

Motion on
“Promoting the Popularization of Electric Vehicles”
passed at the Legislative Council Meeting of 11 April 2018

Progress Report

At its meeting of 11 April 2018, the Legislative Council passed the motion with 13 suggestions on “Promoting the Popularization of Electric Vehicles” moved by Hon Frankie YICK with amendments from Hon Kenneth LEUNG, Hon Charles Peter MOK, Ir Dr Hon LO Wai-kyok, Hon YUNG Hoi-yan, Hon CHAN Hak-kan and Hon Tanya CHAN. This paper reports on the stance of the Environment Bureau (ENB) on the various suggestions of the motion and the follow-up actions.

(1) Comprehensively review the policy on the promotion of EVs and set phased targets for such promotion, such as setting a target proportion of EVs (including electric private cars and electric commercial vehicles) among registered vehicles in Hong Kong

2. Commercial vehicles (CVs) account for about 95% of the vehicular emissions of respirable suspended particulates and nitrogen oxides, both major air pollutants. Hence, CVs have all along been a major target of the Government’s measures to improve roadside air quality. As electric vehicles (EVs) have no tailpipe emissions, it is considered that replacing conventional vehicles, especially CVs, with EVs can help improve roadside air quality.

3. The Government has all along been committed to promoting the use of electric CVs (e-CVs). Measures taken include waiving the first registration tax (FRT) of e-CVs in full since 1994; putting in place since March 2011 a \$300 million Pilot Green Transport Fund (PGTF) to support the transport sector to try out green innovative transport technologies (including e-CVs); and subsidising franchised bus companies to test out electric buses. As for electric private cars (e-PCs), the Government’s standing policy is to encourage the public to use public transport as far as possible, and should they need to acquire private cars (PCs), choose e-PCs. The Government’s main supporting measures include offering financial incentives such as tax concession and lower annual vehicle licence fee, as well as facilitating the development and improvement of charging networks for e-PCs.

4. It is the Government's long-term goal to replace fuel-engined vehicles with clean energy vehicles (CEVs), including EVs, to improve roadside air quality. In considering whether a target year should be set for phasing out petrol or diesel vehicles completely and if phased targets should be set for the promotion of EVs, we have to carefully examine the supply and the technological development of CEVs both overseas and on the Mainland. We are collating relevant information to explore the availability of CEVs suitable for use in Hong Kong and their conditions of use, with a view to formulating our upcoming development strategy.

(2) Amend the relevant provisions of the Buildings Ordinance to mandate that a specified percentage of parking spaces in all newly constructed commercial and residential buildings must be equipped with charging facilities for EVs, and provide incentives and technical support to encourage owners of old buildings to install the relevant facilities

(13) Allocate resources to enhance publicity and promotion to encourage property owners to install more charging facilities in the car parks of private housing estates, so as to perfect the charging network in the community

5. Regarding the charging arrangements for e-PCs, it is the Government's policy direction that e-PC owners should perform daily charging of their e-PCs by using charging facilities at their homes, workplaces or other suitable places (including charging facilities provided by e-PC suppliers). Therefore, the Government's priority is to facilitate and encourage the installation of charging facilities in private premises when planning for the development of charging facilities for e-PCs.

6. The Government launched a series of measures in April 2011 to foster a quality and sustainable built environment in Hong Kong. One of the measures is that only underground car parks provided with infrastructure facilities for EV charging at each parking space can be fully exempted from gross floor area calculations so as to spur developers to provide the EV charging-enabling infrastructure (including provision of sufficient power supply, cabling and conduits for all parking spaces) in private car parks of newly constructed buildings. This serves to ensure that future installation of EV charging devices will not be hindered by any infrastructural constraints in these buildings.

7. The Environmental Protection Department (EPD) is working with relevant departments to review the above arrangement. When considering enhancement to the arrangement, the Government has to study carefully whether administrative measures should be taken or legislation should be enacted/amended. The related operational and technical feasibilities should also be assessed. The existing policy on granting gross floor area concession for newly constructed buildings has been effective in prompting the installation of EV charging-enabling infrastructure at over 80% of private car parking spaces in newly-constructed buildings, the development plans of which were approved between April 2011 and December 2017. Moreover, as EV charging technologies are still evolving, relevant measures need to be more flexible and able to be updated in a timely manner.

8. To encourage the installation of EV charging facilities in existing private housing estates, the Government will continue to collaborate with flat owners, property management companies and owners' corporations to enhance the communication, publicity, education and technical assistance relating to such installation. Regarding the provision of financial incentives, the Government will, under the principle of proper use of public money, explore the feasibility of providing financial incentives to encourage installation of EV charging infrastructure in existing buildings.

(3) Review the provision of ancillary facilities for charging EVs, including conducting a study on retrofitting the existing car parks in government properties and public housing estates, on-street parking spaces and public car parks with charging facilities for EVs, gradually raise the charging speed of standard EV chargers to medium or quick level, and legislate on the regulation of occupation of EV parking spaces by non-EVs

9. Public charging facilities in Hong Kong, which have been set up for EVs to top up their batteries if needed during journeys, are supplementary in nature and do not serve as daily charging facilities or their alternatives. When purchasing e-PCs, car owners should duly consider the daily charging arrangements required and should not rely on public charging facilities for daily charging of their e-PCs. In addition to taking the lead in providing and enhancing public charging facilities at government car parks, the Government also supports private establishments to set up and enhance non-governmental

public charging networks so as to provide supplementary charging facilities for e-PCs as far as possible.

10. As at the end of March 2018, there were 1 899 chargers (837 standard, 713 medium and 349 quick) available for public use at government and private car parks across the territory. Of these public chargers, 680 ^[1] (305 standard and 375 medium) were installed at government car parks, with the remaining 1 219 (532 standard, 338 medium and 349 quick) at private car parks.

11. Among the 680 chargers provided by the Government, the EPD has been gradually upgrading the standard chargers installed at those government car parks that are open to the public and managed by the Transport Department (TD) or Government Property Agency (GPA) ^[2] in recent years. The upgrading works of these chargers to medium ones were completed in February this year ^[3]. As for standard chargers installed at the car parks of other government departments, the EPD is discussing with the departments concerned on the timetable for upgrading these standard chargers to medium ones.

12. As to the provision of outdoor chargers, the EPD is conducting a pilot scheme at four government open car parks (located at the Electrical and Mechanical Services Department Headquarters, Hong Kong Wetland Park, Wai Tsuen Sports Centre and Shek Kip Mei Park respectively), where a total of 11 outdoor chargers for medium charging have been installed to assess their reliability. In collaboration with other relevant departments, we are considering whether more outdoor chargers can be set up in other government premises.

13. On-street parking spaces are provided primarily to cater for temporary parking needs. Such spaces are usually equipped with parking meters to increase the turnover rate, thereby serving the needs of more drivers. Provision of charging facilities at on-street parking spaces may encourage the prolonged

¹ Installed at the car parks of the TD, the GPA, the Leisure and Cultural Services Department, the Electrical and Mechanical Services Department, the Housing Department and the Cruise Terminal.

² There are 519 chargers provided at 425 parking spaces in those government car parks that are open to the public and managed by the TD or GPA (dual-standard medium chargers for both standard and medium charging are available at 94 of these parking spaces).

³ Excluding the 61 standard chargers at the Star Ferry Car Park and Yau Ma Tei Car Park, both to be demolished.

occupation of these spaces by EV drivers for charging purposes, thus affecting other drivers with parking needs. Such facilities may also draw queues of EVs in the vicinity waiting for charging and lead to traffic congestion. Therefore, the Government should exercise due care in identifying parking spaces to serve the charging purpose. The EPD and other relevant departments will explore the feasibility of providing EV charging facilities at suitable on-street parking spaces on a trial basis.

14. Some take the view that the Government should prohibit non-e-PCs from using those parking spaces with public charging facilities in government car parks. Given that e-PCs currently account for only about 2% of the total number of registered PCs, and that charging facilities furnished at government car parks are supplementary in nature, parking spaces with charging facilities will not be designated for the exclusive use of EVs on the principles of taking full advantage of parking space resources and according equal treatment to users of EVs and non-EVs. Nevertheless, having regard to the utilisation of government car parks, the contractors engaged by the GPA or TD will reserve parking spaces with charging facilities for priority EV charging by arranging for traffic cones to be placed and notices to be displayed at such spaces whenever practicable during non-peak hours.

(4) In light of the successive replacement of batteries of registered EVs, formulate expeditiously a policy for the recovery and reuse of EV batteries, so as to prevent such batteries containing toxic substances from being dumped at landfills, seriously polluting the environment and damaging the ecology

15. At present, the age of most EVs in Hong Kong is still relatively low. There are at this stage few retired EV batteries. In anticipation of the growth and wider adoption of EVs in the future, apart from regulating the disposal of waste batteries according to the Waste Disposal Ordinance, EPD has earlier started discussion with the EV suppliers for the promotion of proper collection and handling of waste EV batteries and the long-term arrangements. Preparations for these arrangements are underway. We understand that various EV suppliers have arranged for recovery of batteries from EVs supplied by them.

(5) Provide funding support for tertiary institutions to offer programmes on the design, scientific research, maintenance, etc. of EVs for nurturing talents for the EV industry, so as to assist Hong Kong in developing the industry of EVs or EV parts

(9) Corresponding to its vigorous promotion of the development of scientific research and innovation and technology, support the industry to develop EV batteries and explore the possibility of interoperability among chargers of various standards, so as to further facilitate the use of EVs

16. The Innovation and Technology Fund (ITF), administered by the Innovation and Technology Commission, aims to enhance the added value, productivity and competitiveness of our economic activities by encouraging and assisting Hong Kong companies to upgrade their technological level and introduce innovative ideas to their businesses. Through the ITF, the Government will keep on supporting the transport industry to develop EV-related technical projects, scientific researches and design work.

17. As regards universities funded by the University Grants Committee (UGC), in the 2016/17 school year, some 8 000 students enrolled in undergraduate programmes concerning the design, maintenance and scientific researches in respect of EVs. The academic categories of such programmes include “chemical engineering & materials techniques”, “electrical & electronic engineering (including computer engineering)”, “manufacturing & industrial engineering” and “mechanical engineering”, as well as “transport and communications” and “other engineering”. The Vocational Training Council (VTC) provided full-time or part-time training programmes related to hybrid vehicles and EVs. The programmes include Higher Diploma in Automotive Engineering and a series of on-the-job training programmes concerning the automobile industry. The Diploma in Vocational Education Programme run by the VTC also introduced a new module on new energy vehicles in the 2017/18 school year.

(6) Restore the full waiver of first registration tax for electric private cars to incentivize members of the public to use electric private cars instead of fuel-engined private cars of higher emission

(12) Offer financial incentives to attract vehicle owners to switch to EVs, including conducting a study on offering ex gratia payments to owners of fuel-engined vehicles replacing such vehicles with EVs

18. As mentioned in paragraph 3 above, as for e-PCs, the Government's standing policy is to encourage the public to use public transport as far as possible, and should they need to acquire PCs, choose e-PCs. The Government's main supporting measures include offering financial incentives such as tax concession and lower annual vehicle licence fee, as well as facilitating the development and improvement of charging networks for e-PCs.

19. Taking into account factors such as the technological development and market situation of EVs, as well as road traffic conditions and views of stakeholders, the Government considers it necessary to balance the control of the overall growth of PCs to avoid causing traffic congestion and aggravating roadside air pollution, and encouraging vehicle owners to go for EVs when purchasing PCs. Therefore, apart from continuing with the current FRT concession up to \$97,500 from 28 February 2018 to 31 March 2021, the Government has introduced a new "One-for-One Replacement" Scheme in the same period to allow eligible existing vehicle owners who buy a new e-PC and scrap their own eligible old PC to enjoy a higher FRT concession of up to \$250,000. The Government believes this arrangement already provides suitable financial incentives for eligible existing PC owners to purchase e-PCs when replacing their cars.

(7) Conduct a study on using the revenue from EV registration tax to finance environmental protection work and develop charging facilities, and enhance public education in relation to EVs

20. Some Members have suggested that the Government should conduct a study on using the revenue from EV registration tax to finance environmental protection work, develop charging facilities and enhance public education in relation to EVs. The Government has always exercised prudence in the use of public money to ensure all tax revenues are put into proper use. We will review and enhance our environmental protection initiatives from time to time to meet the needs of society in a timely manner, and will support such initiatives with public money as and when necessary.

(8) Examine the development strategy for environment-friendly vehicles in Hong Kong

21. In addition to promoting the use of EVs, we have been encouraging buyers of CVs to choose environment-friendly CVs. An FRT incentive scheme has been launched since 1 April 2008 to encourage vehicle owners to choose environment-friendly CVs with exhaust emissions that outperform the prevailing statutory emission standards. Under the scheme, vehicle owners who newly register environment-friendly CVs are eligible for the FRT concession depending on their vehicle classes. We review and update annually the qualifying standards for environment-friendly CVs in the light of vehicle technological advancement, market supply and the prevailing statutory emission standards for newly registered vehicles to ensure that the tax reduction is available only to vehicles with an outstanding emission performance. The Government has also subsidised the transport sector under the PGTF to try out green innovative transport technologies, including e-CVs and hybrid CVs (please see item 10).

(10) Review the mode of subsidization and effectiveness of the Pilot Green Transport Fund, with a view to expediting the promotion of the switch of public transport and commercial vehicles to EVs

22. To improve roadside air quality and reduce carbon emissions, the Government established the \$300 million PGTF in March 2011 to provide funding for the public transport sector (including taxis, light buses, buses and ferries), goods vehicle operators and non-profit-making organisations to try out green innovative transport technologies (including e-CVs), thereby paving the way for the wider use of those technologies with successful trial results. Recipients of the PGTF subsidy are required to enter into agreement with the Government, record the trial data for evaluating the efficiency and performance of the technologies concerned, and share with their peers the trial results.

23. On application of e-CV trial, the level of subsidy provided under the PGTF is half of the cost of the e-CV concerned or the price premium between the e-CV and its conventional counterpart, whichever is higher, and is capped at \$3 million per e-CV. At present, no e-CV among the various models available in the market has half of its cost or the price premium between itself and its

conventional counterpart exceeding the cap. In addition, 50% of the installation cost of EV charging facilities will be covered by the PGTF.

24. As at the end of May 2018, the PGTF has approved 124 trials with a total subsidy of about \$135 million, of which around \$86 million was used to fund 59 trials on e-CVs involving 84 e-CVs (3 taxis, 3 light buses, 21 single-deck buses, 56 light goods vehicles (van type) and 1 medium goods vehicle (tractor)).

25. Although the PGTF subsidy is sufficient to offset the price premiums of e-CVs over their conventional counterparts, members of the transport industry would consider whether e-CVs currently available in the market can meet their daily operational needs before submitting applications. The results of the trials conducted under the PGTF have shown that the high production cost, limited service life, long charging time and low energy density of EV batteries are still the key constraints for e-CVs to become popular. The driving range and charging time of most e-CVs currently available in the local market are yet to completely cope with the requirements of the local transport sector. Besides, prices of e-CVs are not as competitive as their conventional counterparts. Results of the trials have also revealed that electric light goods vehicles (e-LGVs) (van-type) are more likely to become popular as they are suitable for operators who require relatively lower daily mileage and payload. To promote the use of e-LGVs (van type), we have held experience sharing sessions for those transport trades that are suitable to use such vehicles.

26. Looking ahead, we will put more effort to promote the use of e-LGVs (van type) and keep in view the development of all types of e-CV technologies. We will also encourage the transport sector to make use of the PGTF to try out e-CVs, and suppliers to introduce more types of e-CVs suitable for use by the local transport sector.

(11) Launch an official mobile application for EVs to provide drivers with information about EVs, including real-time information on the availability of charging-equipped parking spaces across the territory and the latest official information in relation to EVs

27. Currently, information on the location, type, amount, etc. of public EV chargers has been released via EPD webpages. The Government is exploring

the electronic dissemination of further information on the utilisation of EV chargers installed at those government car parks that are open to the public and managed by the TD or GPA. On a trial basis, equipment has been installed to send information on the status, such as “available” or “occupied”, of these public EV chargers to government electronic platforms for public reference. The trial is expected to be completed within this year.

28. Some private companies in the market help EV owners install charging facilities at their parking spaces or provide them with EV charging services. Certain EV charging service providers have also developed mobile applications through which EV owners may check the status of EV chargers and make reservations accordingly.

Conclusion

29. By making reference to EV developments in other places, listening to different views and examining the efficacy of our policies, the Government will continue to review and enhance our policies on EV promotion in a timely manner.

30. As to the supporting facilities for e-PC charging, the ENB is cooperating with other relevant government bureaux and departments to review the policies and measures concerned. Consideration will be given to enhancement of public EV charging network of and charging facilities provided at government car parks, exploring ways to encourage installation of EV charging facilities at car parks in existing buildings, and reviewing the guidelines on installing EV charging facilities in newly constructed buildings. All these aim to facilitate the installation of charging facilities to support the use of EVs. The progress and findings of our efforts will be announced in due course.

**Environment Bureau
Environmental Protection Department**

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