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Panel on Environmental Affairs

Meeting on 26 February 2018

Background brief on measures to promote the use of electric vehicles prepared by the Legislative Council Secretariat

Purpose

This paper provides background information on the Government's measures to promote the use of electric vehicles ("EVs") in Hong Kong. It also gives a brief account of the views and concerns expressed by Members when related issues were discussed by the relevant committees of the Legislative Council ("LegCo").

Background

2. Vehicle tailpipe emissions are the key roadside air pollution source. To improve roadside air quality, the Government has been promoting the replacement of conventional vehicles by EVs, which do not have tailpipe emissions and are more energy efficient. In April 2009, the Steering Committee on the Promotion of Electric Vehicles was set up to recommend a strategy complementary with specific measures to promote the use of EVs in Hong Kong. The key measures in this regard are summarized in paragraphs 3 to 10 below.

Tax incentives

3. The first registration tax ("FRT") for all EVs was waived in full from 1994 to 31 March 2017. In light of the advancement of electric private car ("e-PC") technologies in recent years and the increased availability of mass-market e-PC models that meet local drivers' needs in general, the Government has capped the FRT concession for e-PCs at \$97,500 from 1 April 2017 to 31 March 2018. As there are still major constraints for EVs to

take up commercial transportation duties,¹ the Government has maintained the full FRT waiver for electric commercial vehicles ("e-CVs") in the same period to promote the commercial adoption of EVs. In addition, enterprises having procured EVs are allowed to have 100% profits tax deduction for capital expenditures on the vehicles in the first year of procurement.

Lower annual vehicle licence fee

4. Under the Road Traffic (Registration and Licensing of Vehicles) Regulations (Cap. 374E), the annual vehicle licence fee for e-PCs is charged based on the unladen weight of the vehicle, at a fee of \$440 for the first tonne and \$95 for each additional 250 kg or part thereof. The fee is lower than that for conventional private cars, which is charged based on the cylinder capacity of the engine, ranging from \$3,815 to \$12,675.

Pilot Green Transport Fund

5. The \$300-million Pilot Green Transport Fund ("PGTF") was set up in March 2011 to encourage the public transport sector and non-profit making organizations to test out green and innovative transport technologies. The Fund subsidizes the capital cost of the relevant hardware, and is applicable to taxis, buses, light buses, goods vehicles and ferries.

6. Taking into account the current stage of e-CV technological development, the Government considers that e-CVs are more likely to be practicable for replacing conventional light goods vehicles ("LGVs"). In particular, LGVs used by some operators, such as schools, universities and non-profit making organizations, may have low daily mileage and short operation time, which allow top-up charging when necessary. The Government has therefore stepped up its efforts in promoting the trial of electric LGVs under PGTF since 2017, especially for operators who do not need to use their LGVs intensively.

Trial of electric franchised buses

7. The Government has been fully subsidizing franchised bus companies to purchase 36 single-deck electric buses (including 28 battery-electric buses and eight supercapacitor buses) and related charging facilities for trial on a number

¹ According to the Administration, high production cost, limited service life, long charging time and low energy density of EV batteries remain the key constraints for EVs to take up commercial transportation duties. The low energy density of EV batteries will reduce the payloads of commercial vehicles, including goods and passengers. These underscore the need for further advancement in the EV technologies before e-CVs can become true rivals to their conventional counterparts.

of routes to assess their operational efficiency and performance under local conditions. Subject to the trial results, the Government will encourage the franchised bus companies to use electric buses on a larger scale. At present, 24 battery-electric buses and two supercapacitor buses have commenced operation.² It is expected that most of the remaining electric buses will commence operation in 2018.

Charging facilities for electric vehicles

8. Regarding the charging arrangements for e-PCs, the Government's policy objective is that e-PC owners should perform daily charging of their e-PCs using the facilities at their homes, workplaces or other suitable places (such as charging facilities provided by e-PC suppliers). When planning for the development of charging facilities for e-PCs, the Government's priority is to facilitate and encourage the installation of charging facilities in private premises, whereas public charging facilities are supplementary in nature.

9. The Government has been granting concessions on gross floor area ("GFA") for private car parks in new buildings since April 2011 to encourage developers to put in place the necessary EV charging infrastructure.³ The GFA concessions have been extended to cover underground public car parks since March 2017. In 2011, the Hong Kong Planning Standards and Guidelines was amended to recommend 30% of private parking spaces in new buildings to be installed with charging facilities for e-PCs.

10. There were 1 846 public chargers for EVs in Hong Kong as at the end of 2017, which included chargers installed at public car parks in government and private premises (such as shopping malls).⁴ The Government and the two

² The Administration reported the progress of trial to the Panel on Environmental Affairs in May 2017. The preliminary trial results of the first batch of five battery-electric buses show that the driving performance of these buses is comparable with that of conventional buses. However, their driving ranges may be less than those of diesel buses running on the same routes when the ambient temperature is high.

³ In the past, all car parks in private developments could be exempted from GFA calculations. In light of the recommendations of the Council for Sustainable Development on fostering a quality and sustainable built environment, the Administration tightened the requirements in April 2011 so that only underground car parks provided with infrastructure for enabling EV charging facilities at each parking space can be fully exempted from GFA calculations.

⁴ Currently, a total of 664 public chargers are provided in government car parks. Among them, 519 chargers were installed by the Environmental Protection Department at 425 parking spaces available for public use (accounting for 7% of the parking spaces) in government car parks under the management of the Transport Department and Government Property Agency.

power companies have been upgrading their existing standard chargers to medium or quick chargers to enhance charging efficiency. The Government has also been encouraging other organizations to actively support the installation of public EV charging facilities.

Ombudsman's direct investigation

11. There have been criticisms that the provision of public EV chargers has not kept pace with the growth in the number of e-PCs in recent years.⁵ As this may impede the wider use of EVs in Hong Kong, the Ombudsman initiated in September 2017 a direct investigation into the work of the Environment Bureau, the leading policy bureau responsible for promoting the use of EVs, and will explore in depth whether the Government's planning and arrangements for ancillary facilities are in line with its policy on promoting the use of EVs.

Major views and concerns expressed by Members

12. The Panel on Environmental Affairs ("EA Panel") discussed issues related to the promotion of EVs at various meetings in recent years. The Subcommittee on the Proposed Resolution under Section 5(4) of the Motor Vehicles (First Registration Tax) Ordinance held a meeting in March 2014 to study the then proposed extension of FRT exemption for all EVs.⁶ Members' major views and concerns raised at these meetings are summarized in the ensuing paragraphs.

First registration tax concessions for electric private cars

13. While Members generally supported the continued provision of full FRT waiver for e-CVs in 2017-2018, they held different views on whether the FRT concession for e-PCs should be capped at \$97,500. Some Members opined that buyers of "luxury e-PCs", such as e-PCs priced above \$600,000, should not be entitled to the FRT waiver; and the FRT concession cap would motivate car manufacturers and suppliers to put on the market more e-PC models with competitive prices, thus promoting the wider adoption of e-PCs in Hong Kong.

⁵ As at December 2017, the ratio of EVs to public charging facilities in Hong Kong was about 7:1.

⁶ As section 5(3) and (4) of the Motor Vehicles (First Registration Tax) Ordinance (Cap. 330) do not allow different waivers for different classes of EVs, the FRT concessions in 2017-2018 were implemented pursuant to sections 5(5) and 6(3) of the Ordinance, which read "The Chief Executive may remit in whole or in part FRT payable and may attach conditions to any remission" and "The Chief Executive may refund in whole or in part FRT paid". The implementation did not require the passing of a resolution by LegCo.

Some other Members however expressed grave concern that the FRT concession cap would drive buyers to choose private cars running on fossil fuels and undermine other efforts to promote the use of EVs. They urged the Administration to reinstate the full FRT waiver for e-PCs, or provide other incentives to encourage the purchase of e-PCs in place of conventional vehicles.

14. At the meetings of EA Panel held on 27 February and 30 October 2017, the Panel passed two motions requesting the Administration to grant full FRT exemption for e-PCs or raise the relevant concession cap, and offer financial concessions for "one-for-one" replacement to encourage private car users to switch to e-PCs and promote the long-term development of the EV market.

15. The Administration advised that it had long adopted a public transport-oriented policy which aimed to achieve the dual purpose of reducing road traffic congestion and improving air quality. FRT concessions for EVs were intended to reduce the price difference between EVs and conventional vehicles, and to support the adoption of EV technologies in Hong Kong. In recent years, e-PC technologies had made significant advances and manufacturers had been able to produce mass-market e-PC models which could satisfy ordinary transport needs in Hong Kong and whose price difference with conventional private cars was narrowing. The Administration considered that the reduced FRT concession for e-PCs in 2017-2018, coupled with the lower annual vehicle licence fee and fuel cost of e-PCs, would remain attractive to potential e-PC buyers. It was expected that such FRT arrangements could help attain a reasonable balance between promoting the use of e-PCs and stemming the excessive growth of the private car fleet. The Administration would review the FRT arrangements for EVs regularly having regard to the prevailing market conditions.

Charging facilities for electric vehicles

16. Members called on the Administration to offer more assistance to those who were interested in installing EV charging facilities in their own parking spaces, and expand the public EV charging network expeditiously. Specifically, the Administration was requested to consider:

- (a) introducing metered parking spaces on roadside that supported EV charging;
- (b) developing mobile applications to disseminate real-time information on the availability of parking spaces with EV charging, and prohibiting non-EVs from occupying such parking spaces;
- (c) mandating installation of EV charging facilities in private housing estates and buildings; and
- (d) drawing up a set of official charging standards for EVs.

17. The Administration advised that, to help current/prospective EV owners overcome the difficulties in installing charging facilities at their parking spaces, the Environmental Protection Department ("EPD") had established a dedicated team and a hotline to provide relevant information and technical support to them. The two power companies had been offering relevant one-stop services that included site inspection, provision of technical advice, connection of power supply, etc. In addition, some private companies were also providing one-stop EV charging services. The Administration would continue to maintain communication with property management companies with a view to enhancing their knowledge and acceptance of EV charging technologies.

18. As regards public charging facilities for EVs, the Administration stressed that such facilities were supplementary in nature, enabling EVs to top up their batteries to complete their journeys at times of occasional needs. The Administration was conducting a pilot scheme to assess the reliability of outdoor charging facilities, and would consider providing such facilities in more government premises after completion of the review. At the same time, it would explore the feasibility of providing on-street metered parking spaces equipped with EV charging facilities. While information on public chargers was already available on EPD's website and in mobile applications developed by some EV charging service providers and EV suppliers, equipment was being installed in some government car parks for trials on sending instant electronic information of public chargers' utilization to government electronic platforms for public reference.

Adoption of electric vehicles by transport trades

19. Members expressed disappointment about the slow growth in the number of licensed e-CVs, and questioned on the effectiveness of PGTF in promoting the use of EVs by the transport trades. They also asked whether the Administration had set any targets for phasing out conventional commercial vehicles.

20. The Administration advised that commercial adoption of EVs was still constrained by factors including the long charging time, low energy density, heavy weight and high cost of EV batteries, as well as limited choices of e-CV models on the market. As LGVs generally did not operate round the clock and might have a lower daily mileage and lighter payload, the Administration had made electric LGVs a key focus of promotion of PGTF. Regarding replacement of conventional vehicles, the Administration advised that, in line with the practice of many other places, the current priority was to replace the most polluting diesel vehicles. The Administration would continue to explore further measures to encourage the replacement of conventional private cars with electric ones.

Council questions

21. In the Sixth Legislative Council, Hon Frankie YICK, Hon HUI Chi-fung, Hon CHAN Hak-kan, Hon Kenneth LEUNG and Hon Charles Peter MOK raised questions related to the Government's measures to promote the use of EVs. Major issues covered in the questions include the effectiveness of Administration's measures in encouraging vehicle buyers to choose EVs, whether the Administration would consider reinstating the full FRT waiver for e-PCs, and the development of EV charging facilities. The questions and the Administration's replies are hyperlinked in the **Appendix**.

Recent development

22. At the EA Panel meeting on 26 February 2018, the Administration will update members on the measures to promote the use of EVs.

Relevant papers

23. A list of relevant papers is set out in the **Appendix**.

Council Business Division 1
Legislative Council Secretariat
22 February 2018

Measures to promote the use of electric vehicles

List of relevant papers

Date	Event	Paper
March 2014	Subcommittee on Proposed Resolution under Section 5(4) of the Motor Vehicles (First Registration Tax) Ordinance	Report of the Subcommittee (LC Paper No. CB(1)1078/13-14)
24 March 2014	Meeting of Panel on Environmental Affairs ("EA Panel")	Administration's paper on "Progress of the Pilot Green Transport Fund" (LC Paper No. CB(1)1104/13-14(06)) Minutes of meeting (LC Paper No. CB(1)1654/13-14)
26 January 2015	Policy briefing cum meeting of EA Panel	Administration's paper on "2015 Policy Address – Policy initiatives of Environment Bureau: Environmental protection" (LC Paper No. CB(1)436/14-15(01)) Minutes of meeting (LC Paper No. CB(1)674/14-15)
23 March 2015	EA Panel meeting	Administration's paper on "2015-16 Budget-related initiatives of Environmental Protection" (LC Paper No. CB(1)652/14-15(03)) Minutes of meeting (LC Paper No. CB(1)847/14-15)
21 July 2015	EA Panel meeting	Administration's paper on "Progress report on the Pilot Green Transport Fund" (LC Paper No. CB(1)1113/14-15(01)) Minutes of meeting (LC Paper No. CB(1)1270/14-15)

Date	Event	Paper
25 January 2016	Policy briefing cum meeting of EA Panel	<p>Administration's paper on "2016 Policy Address – Policy initiatives of Environment Bureau: Environmental protection" (LC Paper No. CB(1)459/15-16(03))</p> <p>Minutes of meeting (LC Paper No. CB(1)739/15-16)</p>
23 January 2017	Policy briefing cum meeting of EA Panel	<p>Administration's paper on "2017 Policy Address – Policy initiatives of Environment Bureau: Environmental protection" (LC Paper No. CB(1)451/16-17(01))</p> <p>Minutes of meeting (LC Paper No. CB(1)683/16-17)</p>
27 February 2017	EA Panel meeting	<p>Administration's paper on "Promoting the Use of Electric Vehicles" (LC Paper No. CB(1)574/16-17(04))</p> <p>Minutes of meeting (LC Paper No. CB(1)783/16-17)</p> <p>Administration's follow-up papers (LC Paper No. CB(1)725/16-17(01)) (LC Paper No. CB(1)881/16-17(02))</p>
22 May 2017	EA Panel meeting	<p>Administration's paper on "Improvement of roadside air quality" (LC Paper No. CB(1)949/16-17(03))</p> <p>Minutes of meeting (LC Paper No. CB(1)1369/16-17)</p>
30 October 2017	Policy briefing cum meeting of EA Panel	<p>Administration's paper on "2017 Policy Address – Policy initiatives of Environment Bureau: Environmental protection" (LC Paper No. CB(1)75/17-18(01))</p> <p>Minutes of meeting (LC Paper No. CB(1)399/17-18)</p>

Hyperlinks to relevant Council Questions:

Date	Council Question
14 December 2016	Press release on Council question (oral) raised by Hon Frankie YICK
31 May 2017	Press release on Council question (written) raised by Hon HUI Chi-fung
25 October 2017	Press release on Council question (written) raised by Hon CHAN Hak-kan
13 December 2017	Press release on Council question (oral) raised by Hon CHAN Hak-kan
31 January 2018	Press release on Council question (oral) raised by Hon Kenneth LEUNG
7 February 2018	Press release on Council question (oral) raised by Hon Charles Peter MOK