

# **立法會**

## ***Legislative Council***

LC Paper No. CB(1)810/20-21(04)

Ref.: CB1/PL/EA

### **Panel on Environmental Affairs**

**Meeting on 26 April 2021**

#### **Updated background brief on promoting the use of electric vehicles prepared by the Legislative Council Secretariat**

#### **Purpose**

This paper provides updated background information on the Government's policies and 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. Currently, transportation makes up about 20% of carbon emissions in Hong Kong and promoting the replacement of conventional vehicles by EVs, which do not have tailpipe emissions and are more energy efficient, is one of the key strategies adopted by the Government to improve roadside air quality. Since commercial vehicles ("CVs") account for 95% of the vehicular emissions of respirable suspended particulates and nitrogen oxides, which are major air pollutants, CVs have all along been a major target of such strategy and related measures.

3. In 2009, the Government set up a Steering Committee on the Promotion of Electric Vehicles chaired by the Financial Secretary to coordinate the strategies for promoting the use of EVs. The current measures adopted by the Government are summarized in **Appendix I**.

### Ombudsman's direct investigation

4. The Ombudsman initiated in September 2017 a direct investigation to explore in depth whether the Government's planning and arrangements for ancillary facilities were in line with its policy on promoting the use of EVs,<sup>1</sup> and identified inadequacies on the part of the Environment Bureau and Environmental Protection Department ("EPD") in this regard. For instance, the Ombudsman criticized that the Government had failed to explain clearly to the public its stance in promoting the use of EVs and to increase the number of public charging facilities in tandem with the surge in the number of electric private cars ("e-PCs") since 2014. The Ombudsman considered that the Government should set a clear policy and practicable measures with specific targets in order to encourage the use of EVs.

### The Hong Kong Roadmap on Popularisation of Electric Vehicles

5. The Government announced on 17 March 2021 the "Hong Kong Roadmap on Popularisation of Electric Vehicles" ("the Roadmap"), setting out the long-term policy objectives and plans to promote the adoption of EVs and their associated supporting facilities in Hong Kong, with a view to attaining zero vehicular emissions before 2050.<sup>2</sup> The new key measures under the Roadmap are given in **Appendix II**.

### **Major views and concerns expressed by Members**

6. The Panel on Environmental Affairs ("EA Panel") discussed issues relating to the promotion of EVs at various meetings in recent years. On 26 November 2018, EA Panel appointed a subcommittee to study issues relating to the development of EVs.<sup>3</sup> Members' major views and concerns are summarized in the ensuing paragraphs.

---

<sup>1</sup> The relevant report of the direct investigation, which was published in October 2019, is hyperlinked in **Appendix III**.

<sup>2</sup> The Chief Executive announced in the 2020 Policy Address that Hong Kong would endeavour to achieve carbon neutrality before 2050.

<sup>3</sup> The Subcommittee to Study Issues Relating to the Development of Electric Vehicles held a total of four meetings since the commencement of its work on 21 April 2020 and reported to EA Panel in July 2020. The report is hyperlinked in **Appendix III**.

## Policy direction for promoting the use of electric vehicles

7. Members criticized that the Government's policy for promoting the use of EVs was unclear and inconsistent, as reflected in particular by the withdrawal of the full waiver of the first registration tax ("FRT") for e-PCs in 2017.<sup>4</sup> While the Hong Kong Planning Standards and Guidelines had stipulated the target that 30% of PCs in Hong Kong were EVs or hybrid by 2020, the Ombudsman's relevant direct investigation report revealed that the figure merely represented a hypothetical scenario rather than an objective according to the Environment Bureau. Members urged the Administration to formulate clear policy and practicable measures with specific targets in order to promote the use of EVs.

8. The Administration advised that its policy to promote the use of EVs must tally with the technological development, market supply and competitiveness of EVs, as well as social acceptance. Accordingly, the EV policies had been evolving in three major stages:

- (a) *first stage from mid-1990s to around late 2000s*: EVs were still in early stage of technological research and development and the market supplied mainly models for trials with basically no mass production. The Government's then policy on EV was forward looking which aimed to encourage the development of EV technologies. To this end, the Government had waived FRT for EVs since April 1994 and extended such arrangement for multiple times in order to lower the cost of trying out EVs and promote the technological development of EVs;
- (b) *second stage in late 2000s*: while there was mass supply of EVs in the market, the driving range and performance of EVs could not match that of the conventional petrol PCs due to the immaturity of the overall EV technology. Under the circumstances, the Government continued to promote the technological development of EVs by waiving FRT on EVs and planned ahead the provision of charging facilities; and
- (c) *third stage from around 2014*: EVs became more technically mature with longer driving range and prices more comparable to conventional PCs. As the number of the models of e-PCs was on the rise and EVs began to receive wider market acceptance, the pace in the growth in the number of EVs had noticeably picked up. The Government then introduced a revised FRT concession with an upper limit of \$97,500 and the "One-for-One Replacement"

---

<sup>4</sup> The FRT for e-PCs was waived in full from 1994 to 31 March 2017.

Scheme to ensure the policy would not be inclined to high-priced e-PCs and could contain the increase in PCs.<sup>5</sup>

#### Financial incentives for private car owners to switch to electric vehicles

9. Members in general considered the existing FRT concessions up to \$97,500 for e-PCs insufficient to incentivize members of the public to purchase such vehicles instead of conventional fuel-engined PCs. Even with the enhanced FRT concessions under the "One-for-One Replacement" Scheme, FRTs payable of many e-PC models on the market remained significantly higher than the relevant concession cap under the Scheme (i.e. \$287,500 with effect from 24 February 2021). This had rendered limited choices of affordable e-PC models to the general public. It was noted that of the 14 661 e-PCs registered in Hong Kong at end of May 2020, 10 076 or 70% were priced at above \$500,000.

10. The Administration stressed that its standing policy was to encourage the public to use public transport as far as possible. Members of the public who needed to acquire PCs were encouraged to choose e-PCs. When determining the FRT concessions for e-PCs, a balance should be struck between promoting the adoption of EVs and controlling vehicular growth. Therefore, the "One-for-One Replacement" Scheme had been implemented to provide higher FRT concessions to car owners that replaced their old PCs with EVs. The Administration considered that the Scheme was effective. Since its launch in 2018 to the end of 2020, around 90% of the 7 500 first registered e-PCs' owners had opted for the Scheme. It was also observed that the number of more affordable e-PC models (i.e. those priced \$400,000 or less (before FRT)) available in the market had increased from 6 in early 2018 to 25 in 2020. The number of e-PCs purchased under the Scheme that were priced at \$200,000 to \$400,000 accounted for about 77% of all the first registered e-PCs under the Scheme as at July 2020. More affordable models were expected to enter the market and some car manufacturers had even set timelines to produce only EVs in the foreseeable future.

#### Charging infrastructure and network

11. Members considered that expanding the EV charging network was crucial to successful EV adoption. They called on the Administration to implement measures to support the installation of charging facilities on all fronts.

---

<sup>5</sup> Under the "One-for-One Replacement" Scheme, purchasers of e-PCs who scrap and de-register their eligible old PCs and then first register a new e-PC can enjoy a higher FRT concession.

12. The Administration advised that it would continue to render support to the parties concerned, including property management companies, on installation of EV charging facilities in existing private buildings. It had also been exploring with the two power companies how to reduce the cost of installing EV charging facilities and increase the power supply to individual buildings without the need to carry out major modification works. In addition, the Administration had tightened the requirements of Gross Floor Area ("GFA") concessions since April 2011 so that only underground car parks in new private buildings provided with EV charging-enabling infrastructure (including provision of sufficient power supply, cabling and conduits for all parking spaces, etc.) at each parking space could be fully exempted from the GFA calculations. The Administration had also been discussing with the Hong Kong Housing Authority, the Hong Kong Housing Society and Link Real Estate Investment Trust on enhancing the provision of EV charging facilities in their car parks. In addition, the Administration was identifying sites for on-street parking spaces to install charging facilities and for setting up public quick charging stations in various districts.

13. The Administration had also taken note of the following suggestions from individual Members:

- (a) if the Government intended to charge fees for public EV charging services in the long run, the mechanism should be simple (such as a flat-rate fee) so as to encourage EV owners to use public charging services more frequently;
- (b) pro-EV measures such as priority road use and reduced tolls might be considered for promoting the use of EVs; and
- (c) the effectiveness of granting GFA concessions to encourage developers to install EV charging-enabling infrastructure (but not including the chargers) in new private buildings should be reviewed.

#### Adoption of electric vehicles by transport sectors

14. Members expressed disappointment about the small number of licensed electric CVs ("e-CVs") (i.e. about 234 as at January 2021) and urged the Administration to step up efforts to promote the use of e-CVs, in particular the use of electric buses in Hong Kong.

15. The Administration advised that more e-CV models had become available for some local transport services operators but the technologies were not yet mature. Depending on the global technological development, local EV uptake, development of supporting facilities, etc., the Administration would

consider setting timetables for the electrification of CVs when appropriate. Taking the trial of single-deck electric buses as an example, the results so far indicated that the overall average daily driving range of better performed battery-electric buses was unable to meet the normal daily operational requirement of most of the single-deck buses. As such, top-up charging for single-deck electric buses in daytime was being explored while supercapacitor single-deck electric buses with lower driving range but quick charging were also being tested. Meanwhile, the New Energy Transport Fund (formerly known as the Pilot Green Transport Fund) had approved funding for two franchised bus companies to embark on trials of double-deck electric buses in 2022 to 2023.<sup>6</sup> The scope of the New Energy Transport Fund had been extended in 2020 to cover more kinds of green innovative transport technologies for trial and use. As 95% of the franchised buses in Hong Kong were double-deckers and the technology of double-deck electric buses was still evolving, the Administration considered it pre-mature at this stage to set any target for the use of electric buses in Hong Kong.

#### Disposal and recycling of electric vehicle batteries

16. With the number of waste EV batteries expected to rise with wider adoption of EVs, Members enquired about the Administration's measures for enhancing the management of waste EV batteries.

17. The Administration responded that waste EV batteries had to be properly handled in accordance with the Waste Disposal Ordinance (Cap. 354) and the Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C). Most EV manufacturers or agents had currently engaged licensed collectors to collect the waste batteries of their brands' EVs. After proper preliminary treatment and packaging, waste EV batteries were exported to appropriate treatment facilities overseas for recycling. EPD was also studying how to promote recycling of new energy vehicles batteries and maintaining close liaison with the relevant trade and suppliers in this regard.

#### **Council motion and questions**

18. At its meeting on 11 April 2018, LegCo passed a motion as amended urging the Government to, among other things, set specific targets and take

---

<sup>6</sup> To help improve roadside air quality and reduce carbon emissions, thereby helping to avert global climate change, the Government put in place a Pilot Green Transport Fund of \$300 million to subsidize the transport trade and charitable/non-profit making organizations to try out green innovative transport technologies in March 2011. In 2020, the Government injected additional \$800 million to the fund to extend its scope and renamed the fund as the "New Energy Transport Fund".

forward a number of measures to promote the popularization of EVs. Members also raised questions on related issues at various Council meetings in the Sixth LegCo. Relevant information are hyperlinked in **Appendix III**.

### **Latest development**

19. At the meeting on 26 April 2021, the Administration will brief EA Panel on the key measures of the Roadmap.

### **Relevant papers**

20. A list of relevant papers is set out in **Appendix III**.

Council Business Division 1  
Legislative Council Secretariat  
21 April 2021

### **Current measures adopted by the Government for promoting the use of electric vehicles**

#### Financial incentives

- (a) providing first registration tax ("FRT") concession up to \$97,500 for electric private cars ("e-PCs") and implementing the "One-for-One Replacement" Scheme, under which purchasers of e-PCs who scrap and de-register their eligible old PCs and then first register a new e-PC can enjoy a higher FRT concession;
- (b) waiving in full the FRT for electric commercial vehicles;
- (c) giving enterprises which procure electric vehicles ("EVs") full profits tax deduction for the capital expenditures on the vehicles in the first year of procurement;
- (d) putting in place a Green Tech Fund to fund the research and development of green technologies, including EV projects;

#### Measures to strengthen charging infrastructure

- (e) granting Gross Floor Area concessions for installation of EV charging-enabling infrastructure in car parks of new private buildings;
- (f) implementing the EV-charging at Home Subsidy Scheme to subsidize the installation of EV charging-enabling infrastructure for over 60 000 parking spaces at existing private residential buildings;
- (g) extending the public EV charging networks at government car parks;
- (h) installing EV medium chargers at 30% of the parking spaces at new government buildings; and
- (i) updating the requirements for EV charging network in the Hong Kong Planning Standards and Guidelines and the Government Circular on Green Government Buildings.

[Source: Adapted from Figure 2 on page 6 of the "Hong Kong Roadmap on Popularisation of Electric Vehicles" published by the Environment Bureau in March 2021.]



### **New key measures under the Hong Kong Roadmap on Popularisation of Electric Vehicles**

- (a) *electric private cars*: no new registration of fuel-propelled private cars including hybrid vehicles in 2035 or earlier;
- (b) *electric commercial vehicles*: promoting trials for electric public transport and commercial vehicles including buses, public light buses, taxis and goods vehicles, with a view to setting a concrete way forward and a timetable around 2025;
- (c) *charging network*: expanding the charging network for electric vehicles ("EVs") on all fronts, and marketizing the charging services progressively;
- (d) *battery recycling*: striving to legislate a producer responsibility scheme for retired EV batteries in the next few years, and promoting green technologies of second-life applications of EV batteries;
- (e) *maintenance services*: providing sufficient training, re-training and education opportunities to groom professionals and mechanics to support development of EV technology and maintenance; and
- (f) *innovation and cooperation*: establishing a task force to examine the high-end development of new decarbonization technology globally, including new energy vehicles and fuel technology such as hydrogen fuel as well as seizing the opportunities to be brought about by the EV technological development in the Guangdong-Hong Kong-Macao Greater Bay Area.

[Source: Adapted from Figure 1 on page 5 of the "Hong Kong Roadmap on Popularisation of Electric Vehicles published by the Environment Bureau in March 2021".]

**Promoting the use of electric vehicles**

**List of relevant papers**

Date of meeting	Event	Paper
27 February 2017	Meeting of the Panel on Environmental Affairs ("EA Panel")	<p>Administration's paper on "Promoting the Use of Electric Vehicles" (LC Paper No. <a href="#">CB(1)574/16-17(04)</a>)</p> <p>Background brief on "Promotion of green vehicles" prepared by the Legislative Council Secretariat (LC Paper No. <a href="#">CB(1)574/16-17(05)</a>)</p> <p>Administration's follow-up paper (LC Paper No. <a href="#">CB(1)881/16-17(02)</a>)</p> <p>Motion passed under the agenda item of "Promoting the use of electric vehicles" at the meeting on 27 February 2017 (LC Paper No. <a href="#">CB(1)621/16-17(01)</a>)</p> <p>Administration's response to the motion passed at the meeting on 27 February 2017 (LC Paper No. <a href="#">CB(1)725/16-17(01)</a>)</p> <p>Minutes of meeting on 27 February 2017 (LC Paper No. <a href="#">CB(1)783/16-17</a>)</p>
26 February 2018	Meeting of EA Panel	<p>Administration's paper on "Promoting the Use of Electric Vehicles" (LC Paper No. <a href="#">CB(1)602/17-18(03)</a>)</p> <p>Background brief on "Measures to promote the use of electric vehicles" prepared by the Legislative Council Secretariat (LC Paper No. <a href="#">CB(1)602/17-18(04)</a>)</p> <p>Administration's follow-up paper (LC Paper No. <a href="#">CB(1)1039/17-18(02)</a>)</p>

Date of meeting	Event	Paper
		Minutes of meeting (LC Paper No. <a href="#">CB(1)742/17-18</a> )
12 April 2018	Council meeting	<a href="#">Wording</a> of the motion "Promoting the Popularization of Electric Vehicles" passed as amended  <a href="#">Progress Report</a>
28 January 2019	Meeting of EA Panel	Administration's paper on "Promoting the Use of Electric Vehicles" (LC Paper No. <a href="#">CB(1)487/18-19(03)</a> )  Updated background brief on "Measures to promote the use of electric vehicles" prepared by the Legislative Council Secretariat (LC Paper No. <a href="#">CB(1)487/18-19(04)</a> )  Letter dated 23 January 2019 from Hon Tanya CHAN on promoting the use of electric vehicles (Chinese version only) (LC Paper No. <a href="#">CB(1)522/18-19(01)</a> )  Administration's response to the letter dated 23 January 2019 from Hon Tanya CHAN (LC Paper No. <a href="#">CB(1)524/18-19(01)</a> )  Motion passed under the agenda item of "Promoting the use of electric vehicles" at the meeting on 28 January 2019 (LC Paper No. <a href="#">CB(1)527/18-19(01)</a> )  Administration's response to the motion passed at the meeting on 28 January 2019 (LC Paper No. <a href="#">CB(1)679/18-19(01)</a> )  Administration's follow-up paper (LC Paper No. <a href="#">CB(1)1196/18-19(02)</a> )  Minutes of meeting (LC Paper No. <a href="#">CB(1)917/18-19</a> )

Date of meeting	Event	Paper
22 January 2020	Meeting of EA Panel	<p>Administration's paper on "Further Measures to Improve Air Quality (Part 1)" (LC Paper No. <a href="#">CB(1)233/19-20(05)</a>)</p> <p>Updated background brief on "Measures to promote the use of electric vehicles" prepared by the Legislative Council Secretariat (LC Paper No. <a href="#">CB(1)336/19-20(05)</a>)</p> <p>Administration's follow-up paper (LC Paper No. <a href="#">CB(1)931/19-20(02)</a>)</p> <p>Minutes of meeting (LC Paper No. <a href="#">CB(1)636/19-20</a>)</p>
11 May 2020	Meeting of the Subcommittee to Study Issues Relating to the Development of Electric Vehicles ("the Subcommittee")	<p>Administration's paper on promoting the use of electric vehicles (LC Paper No. <a href="#">CB(1)589/19-20(01)</a>)</p> <p>Background brief prepared by the Legislative Council Secretariat (LC Paper No. <a href="#">CB(1)546/19-20(01)</a>)</p> <p>Administration's follow-up paper (LC Paper No. <a href="#">CB(1)721/19-20(02)</a>)</p> <p>Minutes of meeting (LC Paper No. <a href="#">CB(1)903/19-20</a>)</p>
12 June 2020	Meeting of the Subcommittee	<p>Fact sheet on "Policies and measures on promoting the use of electric vehicles in selected places" prepared by the Research Office of the Legislative Council Secretariat (LC Paper No. <a href="#">FS01/19-20</a>)</p> <p>Administration's follow-up paper (LC Paper No. <a href="#">CB(1)832/19-20(02)</a>)</p> <p>Minutes of meeting (LC Paper No. <a href="#">CB(1)951/19-20</a>)</p>

<b>Date of meeting</b>	<b>Event</b>	<b>Paper</b>
8 July 2020	Meeting of the Subcommittee	Administration's follow-up paper (LC Paper No. <a href="#">CB(1)879/19-20(02)</a> )  Minutes of meeting (LC Paper No. <a href="#">CB(1)959/19-20</a> )
17 July 2020*	Report of the Subcommittee to EA Panel	Report of the Subcommittee to Study Issues Relating to the Development of Electric Vehicles (LC Paper No. <a href="#">CB(1)874/19-20</a> )

\*Issue date of paper

#### **Other relevant documents:**

<b>Government bureau/department/ relevant organization</b>	<b>Document</b>
Transport Department	" <a href="#">Eligibility criteria</a> for the "One-for One Replacement" Scheme (Revised on January 28, 2019)"
The Office of The Ombudsman	" <a href="#">Direct Investigation Report</a> - Government's Planning and Arrangements for Ancillary Facilities for Electric Private Vehicles" published in October 2019 (Chinese version only)
Environment Bureau	" <a href="#">Hong Kong Roadmap on Popularisation of Electric Vehicles</a> " published in March 2021

#### **Hyperlinks to relevant Council questions:**

<b>Date</b>	<b>Council Question</b>
14 December 2016	<a href="#">Press release</a> on Council question (oral) raised by Mr Frankie YICK

Date	Council Question
31 May 2017	<a href="#">Press release</a> on Council question (written) raised by Mr HUI Chi-fung
25 October 2017	<a href="#">Press release</a> on Council question (written) raised by Mr CHAN Hak-kan
13 December 2017	<a href="#">Press release</a> on Council question (oral) raised by Mr CHAN Hak-kan
31 January 2018	<a href="#">Press release</a> on Council question (oral) raised by Mr Kenneth LEUNG
7 February 2018	<a href="#">Press release</a> on Council question (oral) raised by Mr Charles MOK
7 February 2018	<a href="#">Press release</a> on Council question (written) raised by Mr Kenneth LAU
24 October 2018	<a href="#">Press release</a> on Council question (written) raised by Ms Tanya CHAN
12 December 2018	<a href="#">Press release</a> on Council question (oral) raised by Mr Kenneth LEUNG
12 December 2018	<a href="#">Press release</a> on Council question (written) raised by Mr Jeremy TAM
27 February 2019	<a href="#">Press release</a> on Council question (written) raised by Ms Elizabeth QUAT
22 May 2019	<a href="#">Press release</a> on Council question (written) raised by Mr CHAN Hak-kan
29 May 2019	<a href="#">Press release</a> on Council question (written) raised by Mr Dennis KWOK
20 November 2019	<a href="#">Press release</a> on Council question (written) raised by Ms Tanya CHAN
4 December 2019	<a href="#">Press release</a> on Council question (written) raised by Mr Kenneth LEUNG

<b>Date</b>	<b>Council Question</b>
6 May 2020	<a href="#">Press release</a> on Council question (written) raised by Dr KWOK Ka-ki
10 June 2020	<a href="#">Press release</a> on Council question (written) raised by Mr Wilson OR
28 October 2020	<a href="#">Press release</a> on Council question (written) raised by Mr CHAN Hak-kan
9 December 2020	<a href="#">Press release</a> on Council question (written) raised by Mr Tony TSE