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Legislative Council

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Panel on Environmental Affairs

Meeting on 20 January 2025

Background brief on charging network for electric vehicles

Purpose

This paper provides background information on the charging network for electric vehicles ("EVs"). It also summarizes the major views and concerns raised by Members when related issues were discussed by the relevant committees of the Legislative Council ("LegCo") in recent years.

Background

2. The Hong Kong Roadmap on Popularization of Electric Vehicles ("the EV Roadmap"), Clean Air Plan for Hong Kong 2035, and Hong Kong's Climate Action Plan 2050, all issued in 2021, set out the policy directions and targets for different initiatives towards the goals of zero vehicular emissions and carbon neutrality before 2050. Major initiatives of the EV Roadmap include promoting the transition to electric private cars ("e-PCs") and electric commercial vehicles ("e-CVs"), and expanding public and private charging infrastructure on multiple fronts.

Charging network

3. The number of EVs in Hong Kong has increased from about 14 000 in 2019 to about 105 000 in October 2024, during which the Government has continued to expand the network of charging facilities to meet the needs of various types of EVs. Measures adopted include providing gross floor area concessions to encourage the installation of EV charging-enabling infrastructure ("EVCEI") in parking spaces of newly built

private buildings,[1] and launching the EV-charging at Home Subsidy Scheme ("EHSS") to subsidize private residential buildings and housing estates to install EVCEI.[2] The target is to increase the number of public and private parking spaces with charging infrastructure to about 200 000 by mid-2027.

4. The private market has provided over 6 600 public charging facilities as at September 2024, which include 1 500 quick or fast chargers ("FCs");[3] together with the public charging facilities provided by the Government, there are about 9 100 public charging facilities in total in Hong Kong. Fast charging technology for EVs is developing rapidly, and is particularly suitable for use in supporting public charging. To expedite the development of a territory-wide fast charging network to greatly enhance the convenience of using EVs, the Government has announced in the 2024 Policy Address that it will earmark $300 million for a new scheme to subsidize the private sector for installing fast charging facilities (with a rated power output of 100 kilowatts ("kW") or above). It is expected that the new scheme can provide impetus to the industry to install a total of 3 000 FCs for public use by 2030, thereby providing additional support for about 160 000 EVs.

Supporting charging facilities for electric commercial vehicles

5. On supporting the charging of e-CVs, the Administration's planned measures include:

(a) converting the conventional petrol filling stations ("PFSs") into fast charging stations ("FCSs") and retrofitting existing PFSs to install fast charging facilities (about 300 FCs to be provided by end-2027). Such FCSs and PFSs are required to cap the charging fee for electric taxi ("e-taxis") at the ceiling price to be announced by the Environmental Protection Department each month, and reserve a certain number of serving spaces and FCs for the charging of e-taxis and electric public light buses ("e-PLBs") during the peak shift-change hours;

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[1] As at September 2023, the Government has approved over 78 000 relevant parking spaces, of which more than 30 800 have been completed.

[2] It is anticipated that upon its completion in 2027-2028, EHSS will have helped with the installation of EVCEI for about 140 000 parking spaces in about 700 car parks of existing private housing estates.

[3] Various chargers for EVs (charging power): (a) standard charger (less than 2.8 kW); (b) medium charger (from 2.8 kW to 20 kW); (c) quick charger (more than 20 kW and less than 100 kW); and (d) FC (more than 100 kW).

(b) franchised bus operators opening up depots' charging facilities during part of the day for providing charging services to other e-CVs (to open up about 70 FCs by end-2027);

(c) earmarking $20 million under the New Energy Transport Fund to roll out trial projects on e-taxi charging facilities (to provide about 100 FCs by end-2027); and

(d) installing fast charging facilities in taxi stands (to provide about 50 FCs by end-2027). The Administration has been installing 12 dedicated FCs for e-taxis on Lantau Island and in Sai Kung in phases, and identifying taxi stands that may be suitable for setting up dedicated e-taxi FCs thereat.

Major views and concerns expressed by Members

6. Members' major views and concerns are summarized in the ensuing paragraphs.

Marketization of charging services for electric vehicles

7. Members supported **marketizing EV charging services**. They urged the Administration to roll out relevant business facilitation measures. Members also enquired about the measures in place for **promoting the installation of EV chargers at existing private residential buildings not covered by EHSS**.

8. The Administration advised that the Environment and Ecology Bureau would coordinate with relevant bureaux/departments on issues relating to the marketization of EV charging services, and provide one-stop service to interested investors. As EV charging cost was significantly lower than auto-fuel cost, it was expected that the marketization initiative could **lead to a win-win situation for EV owners and EV charging service providers**. As observed, paid EV charging services were already gaining traction. Some owners or operators of private shopping malls had started to install more EV chargers in their car parks. EV charging service providers had also been promoting installation and charging services to housing estates.

Public charging facilities

9. Members asked whether the Administration would set a territory-wide **target ratio of public charging facilities to EVs**. The

Administration was also requested to consider **installing charging facilities at on-street parking spaces and smart lampposts**.

10. The Administration advised that under its overall strategies for EV charging, e-PCs should mainly be charged at the owners' homes, work places, or places they frequented. The main purpose of public charging facilities was to provide ad hoc top-up charging services for e-PCs in case of need. The Administration's target is to **increase the number of public and private parking spaces with charging infrastructure to about 200 000 by mid-2027**. While it was technically feasible to install medium chargers at on-street parking spaces, the crux of the matter was how to ensure that such parking spaces would be appropriately used by EVs but not fuel-propelled vehicles. The Administration would consider the provision of EV chargers at on-street parking spaces and smart lampposts after the number of EVs had reached a critical mass.

Fast Charger Incentive Scheme

11. Members enquired about the Administration's measures in place to ensure **a reasonable distribution** of the locations of FCs **based on public demand** under **the Fast Charger Incentive Scheme**. In addition, they called on the Administration to review the relevant administrative procedures and fees for the installation of FCs, with a view to facilitating and encouraging private sector participation in the provision of charging service.

12. The Administration advised that as FCs installed by the private organizations funded under the Fast Charger Incentive Scheme were to be made available for public use, in selecting the locations for installation, the private organizations would, apart from considering the availability of adequate electricity supply, also **cater for market needs** having regard to **commercial considerations**. Moreover, given the small size of Hong Kong, a substantial increase in the number of charging facilities would be an effective approach to support the charging needs of EVs. On the other hand, the Administration would also review issues relating to applications for installation of charging facilities to explore ways to provide appropriate assistance to the relevant organizations.

Charging facilities for electric commercial vehicles

13. Members stressed that the Administration had to **ensure that there would be sufficient and easily accessible charging facilities** (including fast charging facilities) **for e-CVs**. They also urged the Administration to cut red tapes and facilitate the transport trades' installation of dedicated chargers for e-taxis and PLBs at convenient locations. Moreover, expressing concern on the potential traffic impact of EV charging at taxi stands,

Members suggested allowing overnight parking and charging of e-taxis in car parks of government premises.

14. The Administration advised that to meet e-taxis' needs for charging up rapidly, a number of measures had been implemented (including the conversion of PFSs/retrofitting of quick charging facilities), with a view to **contributing at least 500 FCs by end-2027 additionally** on top of the some 1 500 prevailing quick chargers and FCs **dedicated for use by e-taxis, which might also be used by e-PLBs at the same time**. The Administration would also consider requiring that priority be given to e-taxis for using FCs funded under the Fast Charger Incentive Scheme during designated periods.

15. The Administration also advised that it would assist the taxi and PLB trades in resolving technical issues if they had proposals for installing chargers at specific locations. Due to space constraints and traffic impact concerns, it was envisaged that only one or two chargers could be installed at each suitable taxi stand. Nevertheless, the distributed network of chargers for e-taxis in future would enable drivers to charge their vehicles more conveniently and flexibly, thereby reducing traffic congestion. The Administration **was examining the availability of EV chargers in different government premises and the feasibility of opening them for use by the taxi trade**.

Application of advanced charging technologies

16. Members enquired about **the adoption of advanced technologies, such as liquid-cooled ultra-fast chargers**, by the PFS/QCS operators, and suggested using microgrids to expedite the development of the quick charging network for EVs. Members also expressed concern that **long project lead time for increasing power supply to individual places** might hinder the provision of quick chargers at PFS sites.

17. The Administration advised that ultra-fast charging facilities generally took up more space as they included an on-site power distribution system and might require connection of a dedicated cable to the site to provide sufficient electricity. The Administration had selected some PFS sites with greater potential for adoption of ultra-fast charging for detailed analyses, and would continue to discuss relevant issues with the two power companies. The Administration would also offer **additional incentives**, such as further lease extension, to operators of PFSs to **promote their adoption of such technologies**. The Administration **maintained an open attitude** towards **the use of microgrids to support chargers**. It was expected that the pace of adoption of microgrids would depend largely on the cost of such systems.

18. The Administration also advised that a dedicated interdepartmental working group had been established to take forward and monitor works relating to the conversion of PFSs into QCSs and retrofitting of EV chargers at PFSs.[4] The working group would **work closely with the two power companies**, with a view to **expediting upgrading works for electricity infrastructure where necessary**. The Administration took note of Members' suggestion of setting up a permanent interdepartmental working group to coordinate efforts to expedite the upgrading of electricity infrastructure in various districts.

Council questions and motion

19. Members raised questions related to promoting the transition to EVs at various Council meetings in recent years. In addition, a Member's motion on "Promoting the development of green transport" was passed at the Council meeting of 11 January 2023. The relevant hyperlinks are set out in the **Appendix**.

Relevant papers

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

Council Business Divisions
Legislative Council Secretariat
15 January 2025

[4] Established in 2022, members of the working group include representatives of the Environment and Ecology Bureau, Development Bureau, Lands Department, Environmental Protection Department, Fire Services Department, Electrical and Mechanical Services Department, Transport Department, Highways Department, Buildings Department and Planning Department.

Appendix

Charging network for electric vehicles

List of relevant papers

Committee	Date of meeting	Paper
Panel on Environmental Affairs and Panel on Transport	16 December 2024	Agenda Item II: Green transformation roadmap of public buses and taxis Minutes
Panel on Environmental Affairs	21 April 2023	Agenda Item III: Charging network in support of the popularization of electric vehicles in Hong Kong Minutes Follow-up paper
	30 October 2023	Agenda Item III: Briefing by the Secretary for Environment and Ecology on the Chief Executive's 2023 Policy Address Minutes
	15 December 2023	Agenda Item II: Conversion of petrol filling stations into quick charging stations Minutes
	22 April 2024	Agenda Item III: Conversion of petrol filling stations into quick charging stations or petrol-cum-charging stations Minutes
	24 October 2024	Agenda Item I: Briefing by the Secretary for Environment and Ecology on the Chief Executive's 2024 Policy Address Minutes

Finance Committee	13 April 2023	Administration's written replies to Members' initial questions on the Estimates of Expenditure 2023-2024 (Reply serial numbers: EEB(E)046, 054, 110, 153 and 181)
	17 April 2024	Administration's written replies to Members' initial questions on the Estimates of Expenditure 2024-2025 (Reply serial numbers: EEB(E)030, 056, 097, 102, 118, 161, 166, 181, 185, 192, 199, 203, 204, 206, 208, 210 and 214)

Government bureau	**Paper**
Environment and Ecology Bureau	Hong Kong Roadmap on Popularisation of Electric Vehicles Clean Air Plan for Hong Kong 2035 Hong Kong's Climate Action Plan 2050

Council meeting	**Paper**
11 January 2023	Member's motion: Promoting the development of green transport Progress report
22 February 2023	Council question 15: Promoting the popularization of electric vehicles
22 March 2023	Council question 15: New energy vehicles
17 May 2023	Council question 17: Promoting the popularization of electric taxis
18 October 2023	Council question 11: Electric vehicles
29 November 2023	Council question 21: Electric vehicle charging facilities in government premises

Council meeting	Paper
10 January 2024	Council question 8: Promoting the popularization of electric vehicles
17 January 2024	Council question 8: Promoting the use of electric vehicles
8 May 2024	Council question 4: Electric vehicle charging services in government car parks
22 May 2024	Council question 3: New energy vehicles
19 June 2024	Council question 11: Promoting green transformation of public land transport