For discussion on
22 April 2024

Legislative Council
Panel on Environmental Affairs

Conversion of Petrol Filling Stations into Quick Charging Stations or Petrol-cum-Charging Stations

Purpose

Following the report to the Panel on 15 December 2023 (LC Paper No. CB(1)1107/2023(01)), this paper provides an update on the Government's efforts to promote conversion of petrol filling stations (PFSs) into quick charging stations (QCSs) or petrol-cum-charging stations (PCSs)[1], and related matters.

Background

2. Green transport is vital to Hong Kong in achieving carbon neutrality before 2050. Since the announcement of the Hong Kong Roadmap on Popularisation of Electric Vehicles (the EV Roadmap) in March 2021, the Government has been actively implementing various policies and measures proposed in the EV Roadmap to promote green transformation of vehicles, with a view to attaining the goal of zero vehicular carbon emissions by 2050 as outlined in the 2023 Policy Address. As the market and technology of electric vehicle (EV) are becoming more mature, the transition to EVs has become a general trend. Up to January this year, about 70% of the newly registered private cars (PCs) were EVs while new registration of fuel-propelled PCs (including hybrid vehicles) will cease in Hong Kong in 2035 or earlier.

3. With the rapid development of green transport, the network of charging facilities needs to be expanded correspondingly so as to meet the long-term demand for EV charging. To this end, the Government has been actively working with various stakeholders to establish a charging network with wide spatial coverage and convenient accessibility. In order to encourage more operators to enter into the market and expand the EV charging network in the

[1] Auto-fuel filling stations cum quick charging stations are referred to as petrol-cum-charging stations (PCSs).

long run, the EV charging services will be progressively handed over to service operators, who will charge drivers for using such services under the principle of marketisation. Specifically, the Government marketised the EV charging services for 153 medium chargers in Kwai Fong and Kennedy Town Car Parks in December 2023 and started imposing EV charging service fees in these car parks. The fee-charging services for some 1 400 EV medium chargers located in the remaining 72 government car parks will be implemented progressively.

4. The Government has been encouraging charging of electric private cars (e-PCs) at home, work places, or places where they regularly travelled to or parked at, whereas public charging facilities mainly provide ad hoc top-up charging services for e-PCs in need of urgent charging while driving, as well as quick charging services for electric commercial vehicles (e-CVs) with long operating hours and high mileage. We consider that the existing PFSs scattered all over Hong Kong can be put to effective use to provide such quick charging services.

Conversion of PFSs into QCSs or PCSs

5. The transition from conventional fuel-propelled vehicles to EVs has become a dominant trend and it is expected that the demand for auto-fuel will continue to decrease. Hence, the Government has to plan ahead for the future development of the existing PFSs and PFS operators may need to adjust the services provided by their PFSs to cater for future market demands.

6. To optimise the use of land resources and tie in with market development, the Government, after consultation with the relevant trades, will gradually convert some existing PFSs into QCSs in the medium to long run as planned, and encourage the existing PFSs to retrofit charging facilities in the stations. Through these two directions, the existing network of PFSs across the city can be used to promptly increase the coverage of the charging network. The conversion of PFSs into QCSs can also enhance the land use flexibility [2] of existing PFSs and the areas in their vicinities, such as adopting the "single site, multiple use" (SSMU) model for topside property development above QCSs. During the transformation process of PFSs, the Government will strive to ensure a stable supply of auto-fuels in order to minimise the impact on motorists.

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[2] Under the existing legislation, the SSMU model is not applicable to PFSs due to safety concerns and there are also constraints, to a certain extent, on the land use in the vicinities of PFSs.

Conversion of PFS sites into QCSs

7. In accordance with the relevant policies and guidelines on matters such as site selection and tenancy arrangement of the QCS sites formulated by the inter-departmental working group [3] and its consultation with stakeholders, the Government invited open tenders for the conversion of two vacant PFS sites in Kowloon East [4] and New Territories East [5] to QCSs in March 2024, and the tender invitations will close in May 2024. The above two projects will provide a total of over 20 quick chargers [6]. The Government will closely monitor the construction and operation of the two projects and, subject to actual market needs, select suitable PFS sites for conversion into QCSs in a timely manner.

Retrofitting charging facilities at existing PFSs

8. Through refining the land lease conditions for PFSs (see **Annex 1** for details), the Government is offering suitable incentives for PFS operators to retrofit EV charging facilities in the usable space of PFSs. After communicating with PFS operators, the Government had written to them in November 2023 to invite submission of expression-of-interest for retrofitting quick charging facilities at PFSs. Among the preliminary proposals received for 98 PFS sites, the number and geographical distribution of these PFSs and their associated chargers are set out in **Annex 2**. In March 2024, Government invited the submission of detailed design proposals covering 60 of the above sites (involving over 200 chargers), and required the submission of supplementary information for 6 of the above sites due to land lease issues or non-compliance with the operational requirements, while the remaining 32 sites are under further analysis and study of the feasibility of retrofitting charging facilities. We expect that a total of approximately 100 quick chargers would be provided in the first batch of about 40 existing PFSs within the 2024-25 financial year.

9. To ensure that the charging facilities to be retrofitted at PFSs will meet the actual transportation needs of Hong Kong and encourage operators to introduce

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[3] The Government established a dedicated inter-departmental working group in 2022 to take forward and monitor the work in relation to the conversion of PFSs into QCSs. Members of the working group include representatives of the Environment and Ecology Bureau (EEB), Development Bureau, Lands Department, Environmental Protection Department (EPD), Fire Services Department, Electrical and Mechanical Services Department, Transport Department, Highways Department, Buildings Department and Planning Department.

[4] The vacant PFS site is located at New Kowloon Inland Lot No. 6639, with a site area of about 1 127 square metres.

[5] The vacant PFS site is located at Sha Tin Town Lot No. 646, with a site area of about 370 square metres.

[6] The minimum power output of each charger is 100 kW.

more advanced charging technologies, the Government will offer additional incentives to support operators to adopt or field-test the most advanced charging technologies (e.g. with a minimum power output of 300 kW or equivalent), such as the water-cooled ultra-fast technology adopted in Mainland China, which can shorten the charging time of an EV to no more than 10 minutes. To ensure effective operation of the PCS as well as a smooth transition, we have set out the operational requirements for the charging facilities to be retrofitted at PFSs, including:

(a) For the charging of electric taxis (e-taxis) and electric public light buses (e-PLBs), operators cannot charge a price that is higher than the ceiling price to be announced by the EPD on a monthly basis;

(b) operators are required to reserve a certain number of chargers and serving spaces for the charging of e-taxis and e-PLBs between 3:00 pm and 6:00 pm every day;

(c) a certain number of chargers must comply with both the International Electrotechnical Commission (IEC) Standard and Guo Biao (GB, the standard in Mainland China), so as to serve the charging needs of EVs manufactured in different places and that of cross-boundary traffic; and

(d) operators are required to share the status of chargers usage on a real-time basis through the EPD's mobile application "EV-Charging Easy".

<u>Overseeing the conversion and retrofitting works and subsequent management</u>

10. The inter-departmental working group will closely follow up on the detailed design proposals submitted by the operators, properly examine the technical requirements of the proposed works and render support in a timely manner. The EPD will assume a coordinating role and liaise with the various government departments regarding their input in the vetting process so that the chargers can be put into service the soonest possible. As regards the site and technical constraints which operators may face (e.g. additional electricity supply required, usable space and impact of the retrofitted chargers on nearby traffic), we are pleased to note that some operators are exploring possible solutions such as power storage systems, car stacking systems and reservation systems, etc., with a view to maximising the number of chargers that can be retrofitted at PFSs. We will continue to facilitate their exploration as far as practicable.

11. In order to minimise the impact of the conversion of PFSs into PCSs and subsequent operation of these stations on drivers and the general public, we have requested the operators to provide in their detailed design proposals the implementation details of the retrofitting works (including the programme and scale of the works and traffic impact assessment) and management plans for the quick chargers. The inter-departmental working group will take all these factors into consideration when vetting the proposals and will request the operators to compress the works programme as far as possible to minimise the inconvenience caused by the retrofitting works. As some of the retrofitting works may involve upgrading of power supply systems, the Government will pay particular attention to such works to ensure that the upgrading works and the subsequent operation of the PCSs concerned will meet the relevant fire and electrical safety standards and avoid disruptions to the regional power supply.

12. To ensure safe and efficient operation of the QCSs and PCSs, the inter-departmental working group has required the operators to fulfil certain requirements, such as deploying staff on site to assist customers round the clock and reporting emergency incidents to the Government. The Government will continue to monitor the progress and effectiveness of the conversion of PFSs into QCSs or PCSs and conduct timely evaluation, with a view to further developing a more comprehensive charging network.

Supporting e-taxis

13. We are mindful that while the conversion of PFSs into QCSs or PCSs will serve as an important element for our city's overall charging network, more comprehensive supporting measures are needed for e-taxis and other e-CVs in order to cater for their round-the-clock operational needs. Apart from the above measures, the Government is identifying suitable locations (such as taxi stands and different government premises) across the city for setting up dedicated charging facilities for e-taxis, in a bid to enable taxi drivers to charge e-taxis with greater convenience.

14. In pursuing the conversion of PFSs to QCSs or PCSs, we are also mindful of the possibility of new types of energies (e.g methanol and hydrogen). However, the adoption of these new types of energies is less mature and in general still on a trial stage. In contrast, the performance of EVs (e.g. range and charging time) has improved significantly in recent years and the market of EVs has become mature. It has been generally accepted around the world that EVs would be the main player for new energy land transport (particularly in the case of small- to medium-sized vehicles). As regards other new energy vehicles,

apart from having to consider the related technical aspects, other issues such as cost and upstream supply chain also need to be taken into account. Nevertheless, the Government will seriously consider the feasibility of adopting other new energies. We aim to formulate a hydrogen development strategy roadmap in mid-2024. The Government will give due consideration to proposals submitted by PFS operators who indicate an interest in providing electricity charging and refilling of other new energy (such as hydrogen) at their PFSs, on a case-by-case basis, on the condition that the technical arrangements at the PFSs comply with the relevant safety guidelines.

Promoting new energy commercial vehicles

15. Separately, the Government has been encouraging the trade through the New Energy Transport (NET) Fund to introduce new energy commercial vehicle models which are suitable for local adoption, so as to promote a healthy market competition. As at the end of February 2024, the NET Fund has approved 319 trial projects, involving a subsidy amount of $274 million. Among these projects, 176 have been completed, 51 are underway and 92 have not yet commenced. The category of "Application for trial" has been extended to cover trials of different charging modes for e-taxis so as to support the taxi trade to test the charging mode that is most suited to their operation. In addition, we will explore the utilisation of the existing commercial quick chargers to facilitate the charging of e-taxis. The NET Fund has earmarked fund to subsidise trials on hydrogen fuel transport technologies on a project basis. Given that a number of trials on new energy transport technologies subsidised by the NET Fund have been completed or have commenced, and that there are other avenues for trials (such as the ultra-fast charging technology as mentioned in paragraph 9 above), the Government is reviewing the subsidy framework, approach and levels of the NET Fund so that it can focus on subsidising new energy technologies that are more suited or better placed in meeting market needs, thereby expediting the green transformation of the transport sector. The Government and the NET Fund Steering Committee will discuss and arrive at the subsidy details of various trial projects, with a view to making the best use of the NET Fund.

Advice Sought

16. Members are invited to note this paper and provide their views.

Environment and Ecology Bureau
April 2024

Annex 1

Refining Land Lease Conditions for Petrol Filling Stations to Expedite the Conversion of Petrol Filling Stations into Quick Charging Stations or Petrol-cum-Charing Stations

The Executive Council endorsed the following refinements to the land lease conditions for petrol filling stations (PFSs):

(i) Offering incentives for current PFS operators to retrofit electric vehicle (EV) chargers

The PFS operators will be granted a conditional short-term extension of lease, subject to the number of additional chargers to be retrofitted[7]. Moreover, the premium for the associated lease modifications covering the quick chargers will be waived.

(ii) Shortening the tenure of new leases for PFSs from 21 years to 12 years

The Government will shorten the tenure of new leases for PFSs from 21 years to 12 years while allowing flexibility for the Environment and Ecology Bureau to make minor adjustments to the land lease tenure on a case-by-case basis to fully unleash the development potential of various sites.

(iii) Enabling the Government to impose a price cap on the charging of electric commercial vehicles (e-CVs)

New leases of PFSs will enable the Government to cap the price of charging for specific types of e-CVs as and when necessary. This condition also applies to chargers retrofitted at existing PFSs in accordance with sub-paragraph (i) above.

[7] For PFSs with the remaining lease term of less than 10 years, if granted with approval for retrofitting EV chargers, their land leases may be extended by 3 to 7 years depending on the number of chargers retrofitted, otherwise, their land leases may not be extended.

(iv) Enabling the Government to mandate provision of additional EV charging facilities

The Government may impose a condition in the new leases for PFSs, mandating operators to install additional EV charging facilities in the stations or replace the existing petrol dispensers with charging facilities within a specific period of time.

Annex 2

Number and Geographical Distribution of Petrol Filling Stations and Quick Chargers in the Operators' Preliminary Proposals

District	No. of Petrol Filling Station	No. of Quick Charger
Central and Western	2	14
Eastern	2	12
Southern	6	13
Wan Chai	7	44
Kowloon City	8	37
Kwun Tong	6	21
Sham Shui Po	6	24
Wong Tai Sin	3	16
Yau Tsim Mong	1	7
Kwai Tsing	9	53
Tsuen Wan	1	2
Sai Kung	7	43
North	3	19
Tai Po	7	26
Sha Tin	7	25
Yuen Long	14	65
Tuen Mun	6	31
Islands	3	19
Total	**98**	**471**