

Electric Private Cars and Charging Facilities

23 January 2019

Environmental Protection Department



Why Electric Vehicles ?

- Electric vehicles (EVs) have no tailpipe emissions
- Replacing conventional vehicles with EVs can improve roadside air quality
- Commercial vehicles account for 95% of Nitrogen Oxides and Respirable Suspended Particulates emissions from vehicle fleet. Promoting wider use of commercial EVs and use of public transport should take priority
- The Government has always encouraged the public to use public transport. When buying private cars, we encourage them to choose electric private cars.



Advancement of EV Technology

- With the advancement of EV technology, the performance of the latest electric private cars are comparable to conventional private cars. Their prices are also becoming more affordable.
- Despite the technology of commercial electric vehicles still fails to fully meet the operational needs of commercial vehicles, it has been advancing. Its performance (driving range, payload, etc.) is improving, but the price is still high.



Promoting Electric Private Cars – the Challenges



Challenges

The promotion of electric private cars faces three key issues—

- Technical;
- Physical; and
- Acceptance by the trades and public



Technical Challenges

Issues

- Production cost
- Durability of battery
- Energy capacity
- Charging time

In recent years, the performance of electric private cars have met the requirements of normal vehicle users



Physical Challenges

Issues

- Short of land for setting up chargers
- Condominiums but not houses
- Existing buildings may not have reserved much spare power for future development purposes during construction stage, including power supply for EV charging.
- Space restriction in car parks of existing buildings may make it difficult to install EV chargers and its power cables.



Acceptance by the Trades and Public

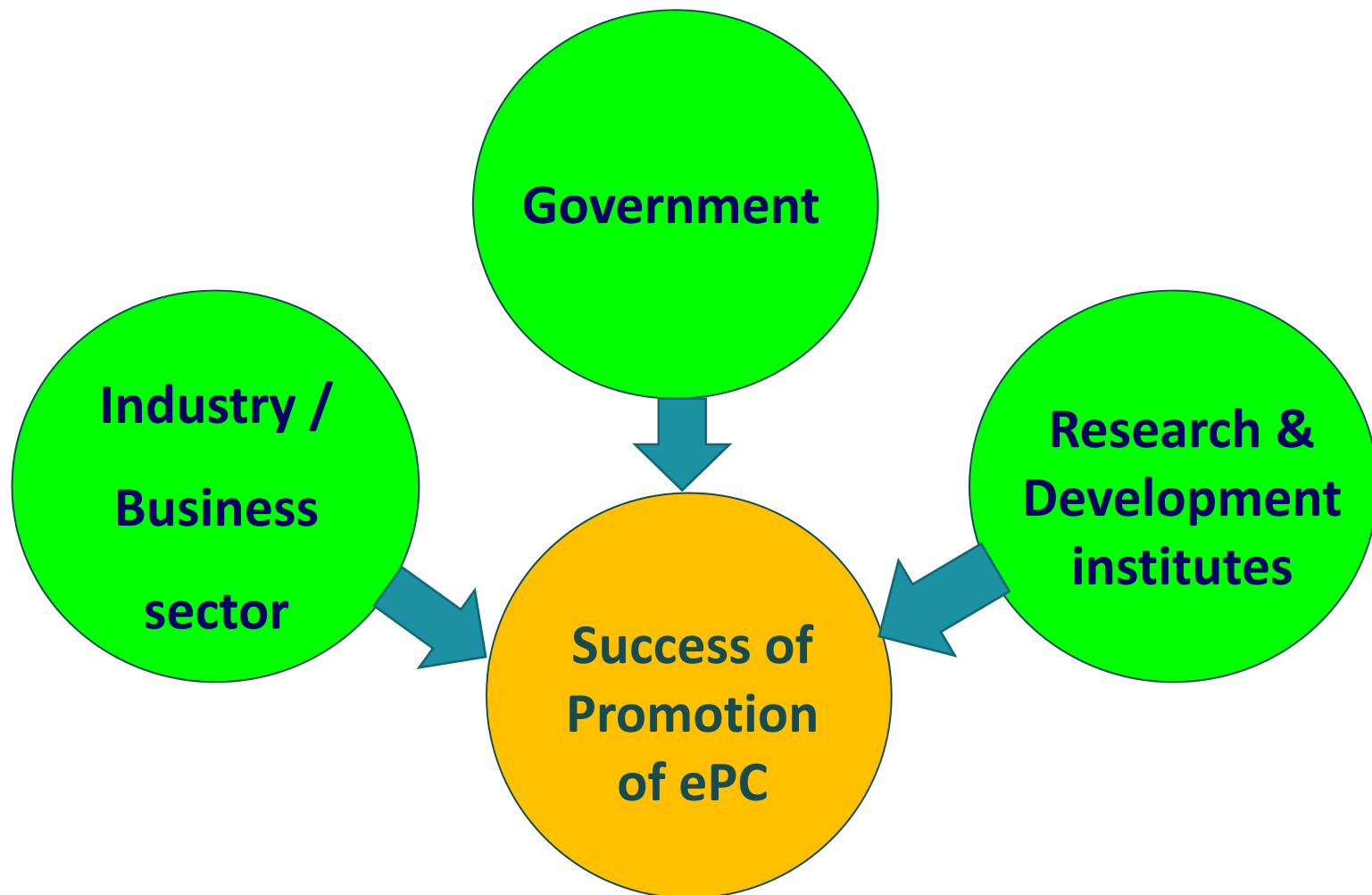
Issues

- Concern on safety and operational reliability of EVs and charging equipment
- Worry that installing chargers will reduce the spare power available for the feasibility of setting up other electrical installations in future.
- How to determine the contribution from individual EV owners to the cost when installing provisions for EV charging equipment (such as cable trunking)?



Solutions

- Key parties should work together



Government Policy Initiatives

The Steering Committee on the Promotion of EVs
chaired by the Financial Secretary

- Tax concessions
- Charging support for EVs
- Guidelines for charging facilities



Tax Concessions for Electric Private Cars



- First Registration Tax concessions extended to 31 March 2021
 - Electric private car : cap at \$97,500 ; “One-for-One Replacement” Scheme cap at \$250,000
 - Full waiver for electric commercial vehicles, electric motor cycles and electric motor tricycles
- Enterprises which procure EVs are allowed 100% profits tax deduction for the capital expenditure on EVs in the first year of procurement.



Tax Concessions for Electric Private Cars

“One-for-One Replacement” Scheme

Eligibility criteria

- To join the “One-for-One Replacement” Scheme, you have to satisfy all the following criteria including arranging to scrap and de-register your “Old PC” and then first register an e-PC (“Replacement e-PC”) under your name within the effective period of the Scheme (i.e. 28 February 2018 to 31 March 2021, both dates inclusive).



Tax Concessions for Electric Private Cars

“One-for-One Replacement” Scheme

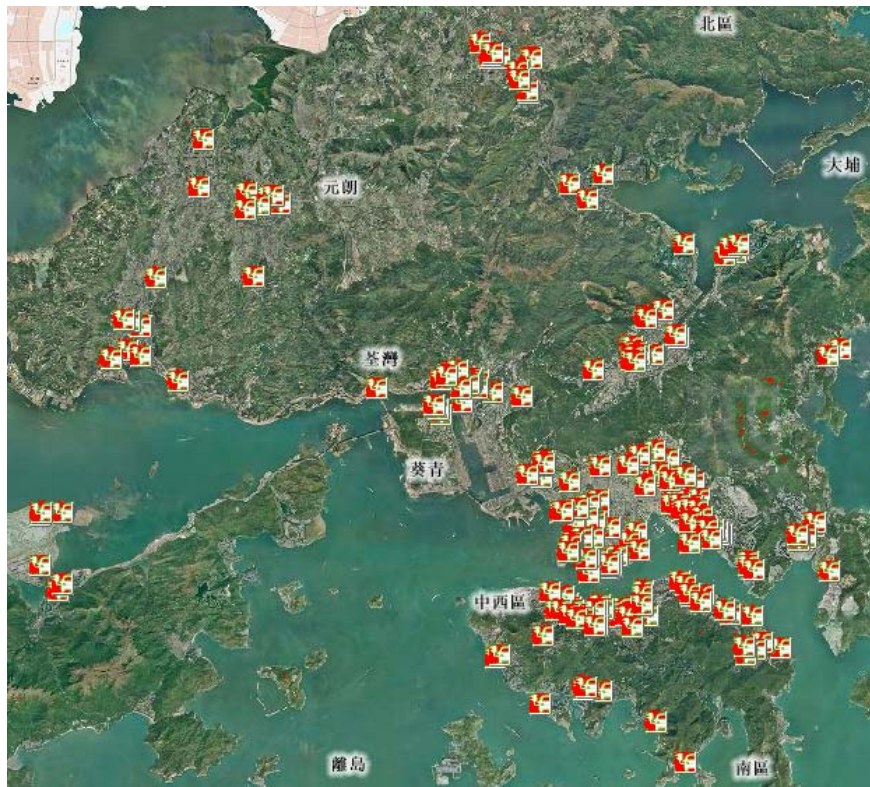
• Eligibility criteria

Old PC	Replacement e-PC
<ul style="list-style-type: none">• When scrapped and de-registered, must be in the vehicle class of private car• Have been first registered in Hong Kong for at least 6 years when it is de-registered after scrapping	<ul style="list-style-type: none">• First registered as a private car, without an internal combustion engine and does not emit any exhaust gas
<ul style="list-style-type: none">• Have been registered for at least 3 years, without interruption, under the owner’s name immediately prior to de-registration of the Old PC• Have been licensed for at least 608 days, with or without interruption, within the 24 months immediately before de-registration	<ul style="list-style-type: none">• First registered under the name of the registered owner of the “Old PC” at scrapping and de-registration



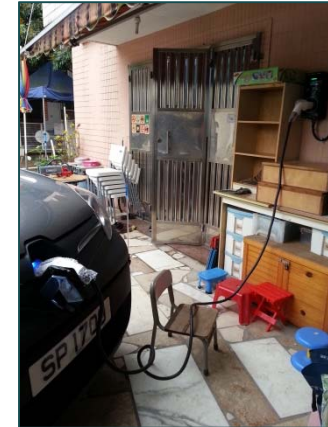
Charging Support for EVs

- As at Dec 2018, there are some 2,166 public EV chargers, including
 - 824 medium chargers
 - 498 quick chargers (>20kW)



Charging Support for Electric Private Cars

- EVs should preferably be charged at homes or workplaces



Role of Public Charging Network

- **Public chargers** are for **opportunity charging**, topping up batteries to complete remaining journeys of EVs when necessary
- **Medium chargers** should form backbone of government public charging network (charging for 1 hour can support driving for about 30km)



Set up Medium Chargers at Government Public Car Parks



Public Charging Facilities Set up by Power Companies

The two power companies have set up public charging facilities including medium and fast chargers on Hong Kong Island, Kowloon and the New Territories.



Cityplaza at Taikoo Shing



The University of Hong Kong



Hing Wah Estate



Public Charging Facilities Set up by Power Companies



Hong Kong International Airport
(Car Park 4)



Cheung On Estate Car Park at Tsing Yi



Heung Yee Kuk Building at Shatin



Jockey Club Kau Sai Chau¹⁸
Golf Course Public Car Park



Public Charging Facilities Set up by Commercial Sector

- The commercial sector also set up charging facilities at their public car parks



EV Charging Service Providers

- There are EV charging service providers providing one-stop EV charging service (including installation of charging facilities and provision of charging service at the EV owners' car parks) to housing estates or commercial organisations



Charging support for EVs

- Provide information and technical support to interested parties to set up EV chargers  查詢熱線 Hotline : 3757 6222
- Guidelines issued on the specific arrangements and technical requirements for setting up EV chargers



Statutory Requirements for Charging Facilities

- EV charger is a fixed electrical installation. The owner of an EV charger is required to employ a **registered electrical contractor/registered electrical worker to install, test and certify** (WR1 form) in accordance with the relevant regulations of the Electricity Ordinance (Cap. 406) and its subsidiary Electricity (Wiring) Regulations.
- In accordance with Code 4 of Code of Practice for the Electricity (Wiring) Regulations, EV chargers **shall pass the type tests complying with the relevant international/national standards (IEC/SAE/GB).**
- The owner of the fixed electrical installation is responsible for ensuring the safety of the installation. If the allowable load of the installation exceeds 100A, the owner **shall arrange maintenance, testing and certification of the fixed electrical installation at least every 5 years** in accordance with the relevant provisions of the Electricity (Wiring) Regulations.



Guidelines for EV Charging Facilities

Issued guidelines on the specific arrangements and technical requirements in setting up EV chargers :

- Guidelines for Setting-up Standard Charging Facilities for Electric Vehicles at Car Parks
- Guidelines for Individual Owners and Tenants of Car Parking Spaces for Setting up EV Chargers
- Technical Guidelines on Charging Facilities for Electric Vehicles



Installation of EV Chargers in Existing Private Buildings

Common problems encountered

- Approval by Owners' Corporation
- Limited spare power (**Real or Misunderstanding?**)
- How to install charging facilities



Installation of EV Chargers in Existing Private Buildings

Approval by Owners' Corporation

- Installation of charging facilities in a car park will usually involve works in/use of common area. Approval by the Owners' Corporation is required.
- **The support of owners' corporations and owners' committees is a key factor** for promoting the wider use of electric private cars.



Installation of EV Chargers in Existing Private Buildings

What can the owner/owners' corporation do if there is doubt on the adequacy of the spare power of the building?

- The two power companies provide one-stop services for installation of EV chargers, including site inspection, provision of technical advice, inspection of completed charging installation and connection of the power supply.
- **If required, the two power companies will provide additional power supply to cope with the requirement of charging facilities.**
- May consider to adopt a **load control system** to allocate the spare power of the building more effectively for EV charging



Installation of EV Chargers in Existing Private Buildings

How to install charging facilities?

- Private companies providing one-stop service for EV charging
- Environmental Protection Department's dedicated team and service hotline (3757 6222)



Outlook

- 11,496 EVs as at Dec 2018
- Private cars make up the bulk of the EV fleet (98%)
- Vehicle vendors are actively sourcing more suitable EV, including commercial ones



- With the advancement of the EV technology, EV will become more popular and will take up more commercial duties



More Government Effort

- **Continue to review and enhance our policies on EV promotion** in a timely manner by monitoring EV developments in other places, listening to different views and examining the efficacy of our policies.
- 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. Considerations –
 - ✓ 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 new buildings



Let's join hands to improve the environment !



Your support could help develop and enhance the charging network for wider use of EVs in a smart city with better air quality

