



香港電動車業總商會有限公司
Hong Kong E-Vehicles Business General Association Limited

電動車市場發展趨勢及充電方案概覽

Overview of Market Trends and Charging Solutions for Electric Vehicles

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Secretary General, Hong Kong E-Vehicles Business General Association

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全球電動車數據概覽

Global Figures on Plug-in Electric Vehicles

2021年電動車銷量
EV SALES IN 2021 :
6,600,000

2021年新售電動車佔比
EV SHARE OF NEW CAR SALES
IN 2021 :
10%

2021年電動車總量
TOTAL NUMBER OF EV IN 2021 :
16,500,000

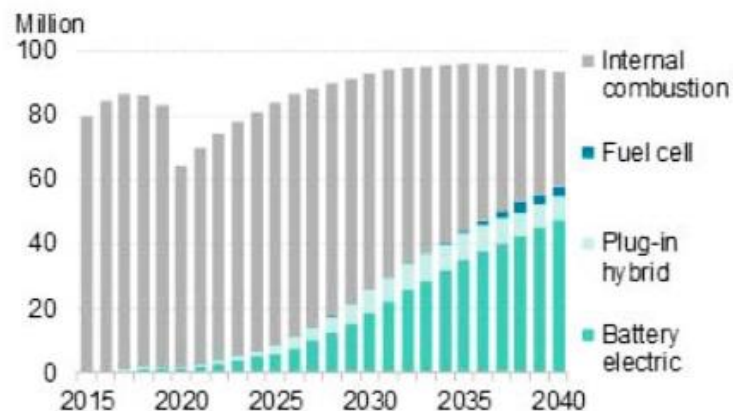
鋰電池包市場價格
LITHIUM-ION BATTERY PACK PRICE :
↓89% FROM 2010 TO 2021

2021年電動車車型數量
NUMBER OF EV MODELS IN 2021 :
450

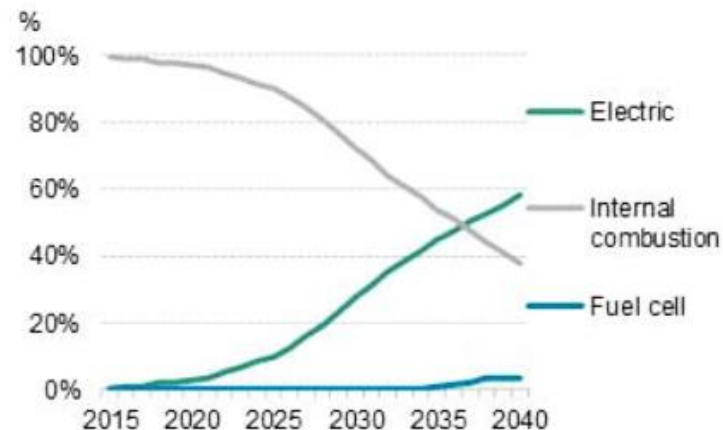
全球電動私家車趨勢預測

Global Trend Predictions on Plug-in Electric Vehicles

全球年度私家車銷量 (按傳動系統分類)
Global annual passenger vehicle sales by drivetrain



全球年度私家車市佔率 (按傳動系統分類)
Global share of total annual passenger vehicle sales by drivetrain



電動
Electric

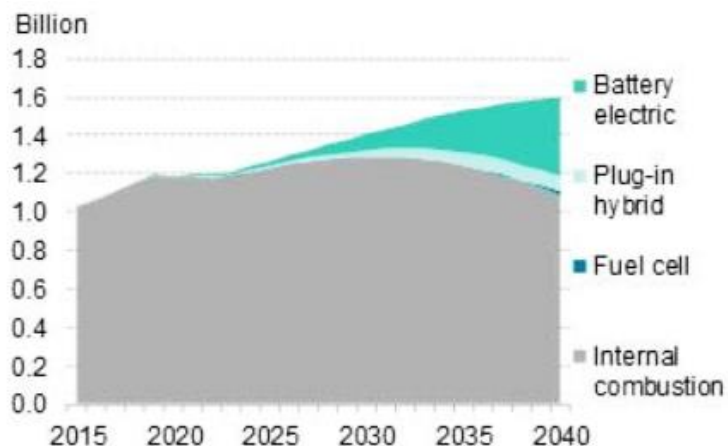
純電動
Battery Electric

油電混合動力
Plug-in Hybrid

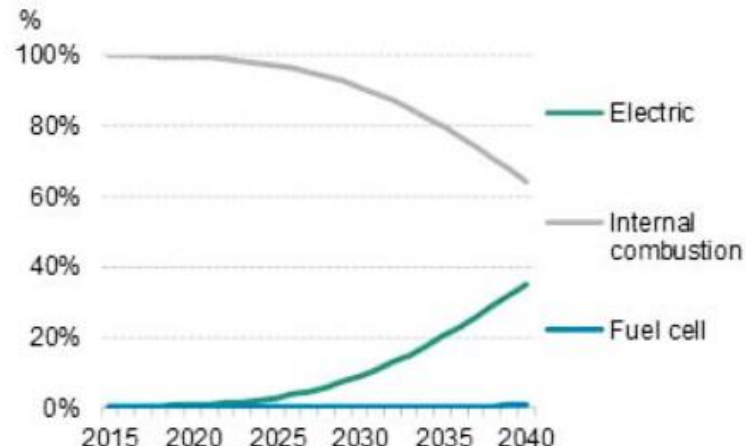
內燃機
Internal Combustion

燃料電池
Fuel Cell

全球年度私家車總量 (按傳動系統分類)
Global passenger vehicle fleet by drivetrain



全球年度私家車行駛里程 (按傳動系統分類)
Global share of annual passenger vehicle distance traveled by drivetrain



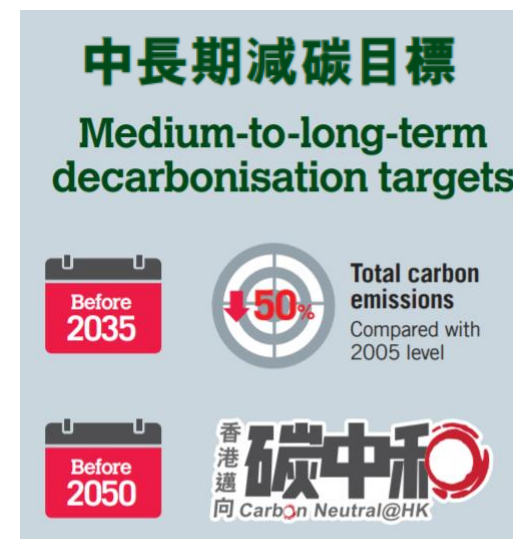
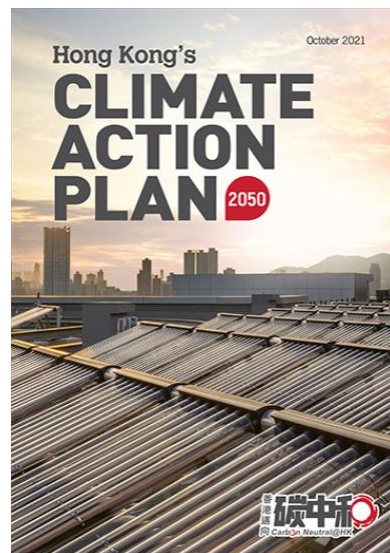
各經濟體新售私家車零排放目標

Targets of Zero Emission Passenger Car Sales of Various Economies

經濟體 Economies	新售私家車零排放目標 Targets of Zero Emission Passenger Car Sales
 挪威 Norway	2025
 丹麥 Denmark	2030
 冰島 Iceland	2030
 愛爾蘭 Ireland	2030
 荷蘭 Netherlands	2030
 新加坡 Singapore	2030
 英國 UK	2030
 香港 Hong Kong	2035
 加拿大 Canada	2040
 法國 France	2040
 西班牙 Spain	2040
 中國 China	正在積極考慮和研究禁令 Actively considering

香港政府推廣電動車的目標

Targets of Popularizing EVs by Hong Kong Government



六大主要行動之一

One of Six Major Areas of Action

綠色運輸

電動車路線圖

推展《香港電動車普及化路線圖》訂立的措施，達致2050年前車輛零排放



綠色交通網絡

擴展鐵路網絡，配合發展需求；及於2022年在政府收費隧道和青沙管制區推行不停車繳費系統



環保新發展區 交通運輸模式



新能源渡輪

試驗電動和混合動力渡輪，並與渡輪公司探討於2035年前逐步採用新能源渡輪



Green Transport

EV Roadmap

Take forward measures set forth in the Hong Kong Roadmap on Popularisation of Electric Vehicles to attain zero vehicular emissions before 2050



Green Transport Network

Expand railway network to meet development needs; and implement Free-flow Tolling System at government toll tunnels and Tsing Sha Control Area by 2022



Environmentally Friendly New Development Areas

Adopt environmentally friendly transport mode in new development areas



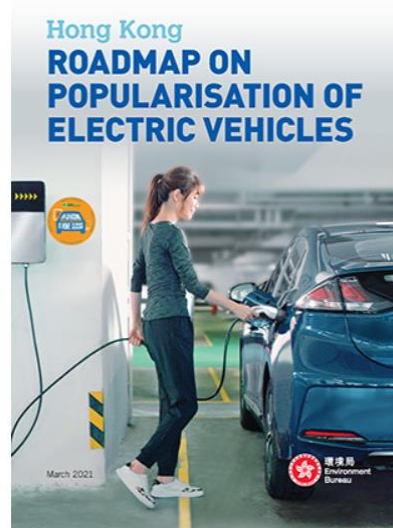
New Energy Ferries

Conduct trials for electric and hybrid ferries, and explore with ferry operators to progressively adopt new energy ferries by 2035



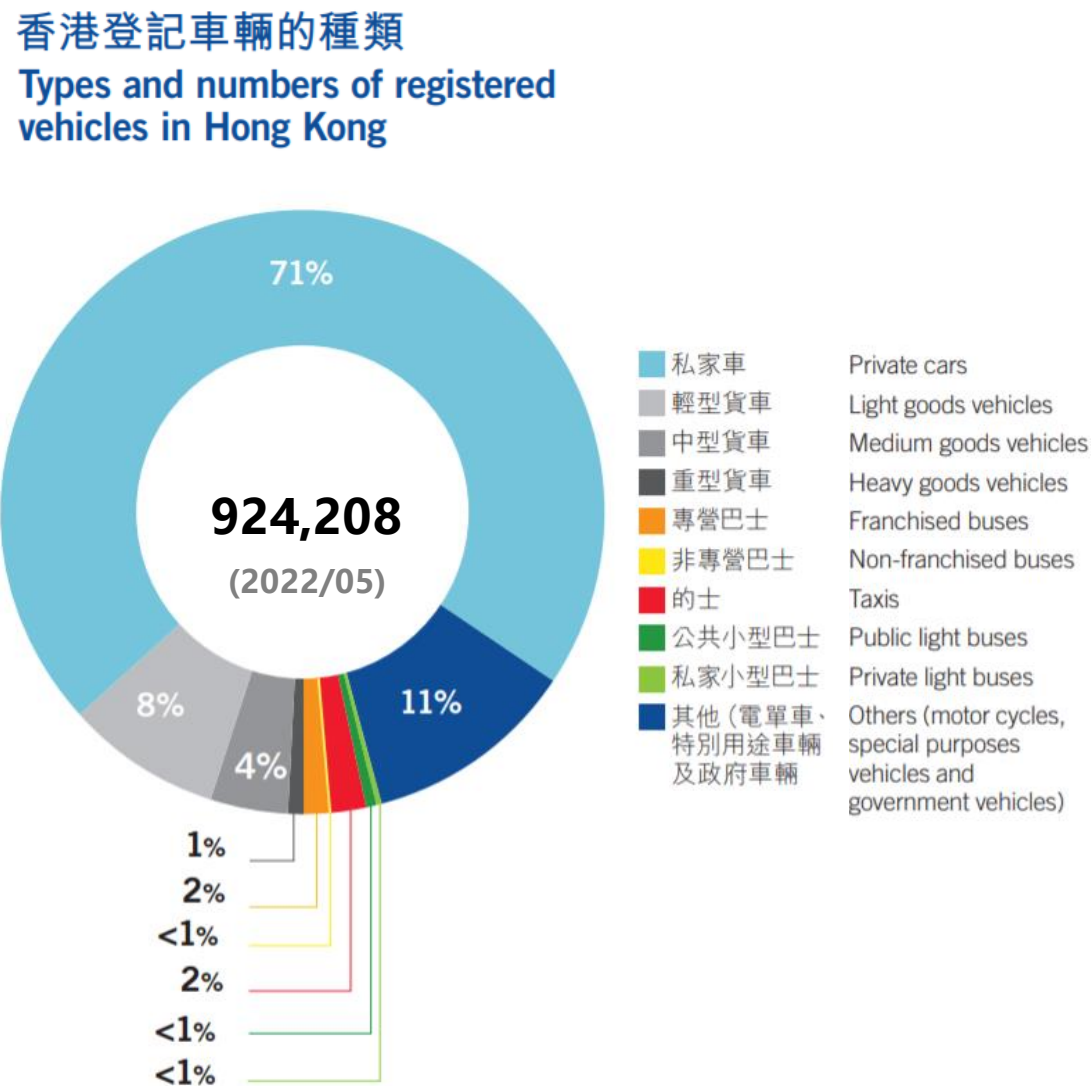
香港電動車普及化路線圖

Roadmap on Popularisation of EVs in Hong Kong



香港登記車輛的概覽

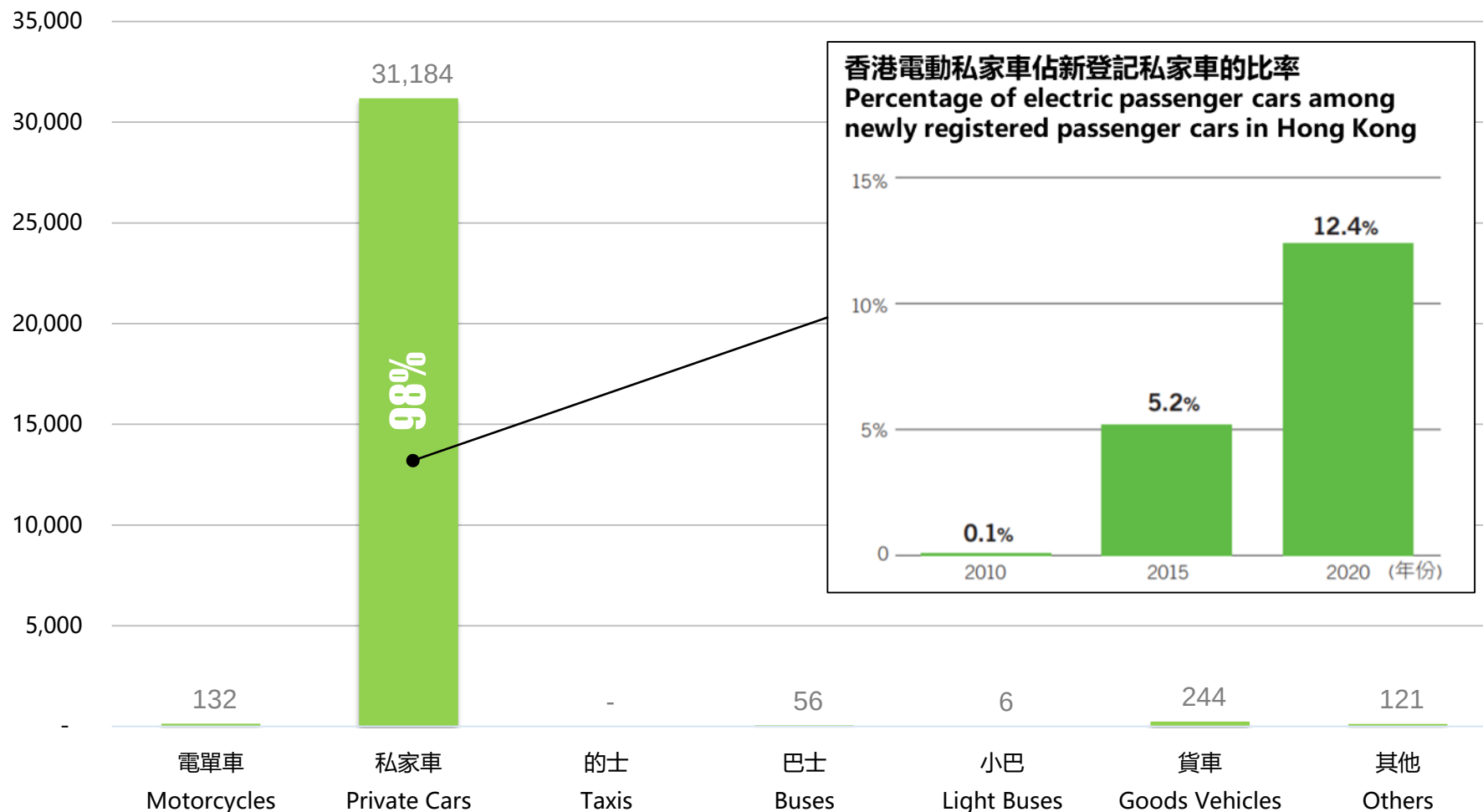
Overview of Vehicle Types and Numbers of Registered Vehicles in HK



香港登記電動車輛的概覽

Registered EVs by Vehicle Type in Hong Kong

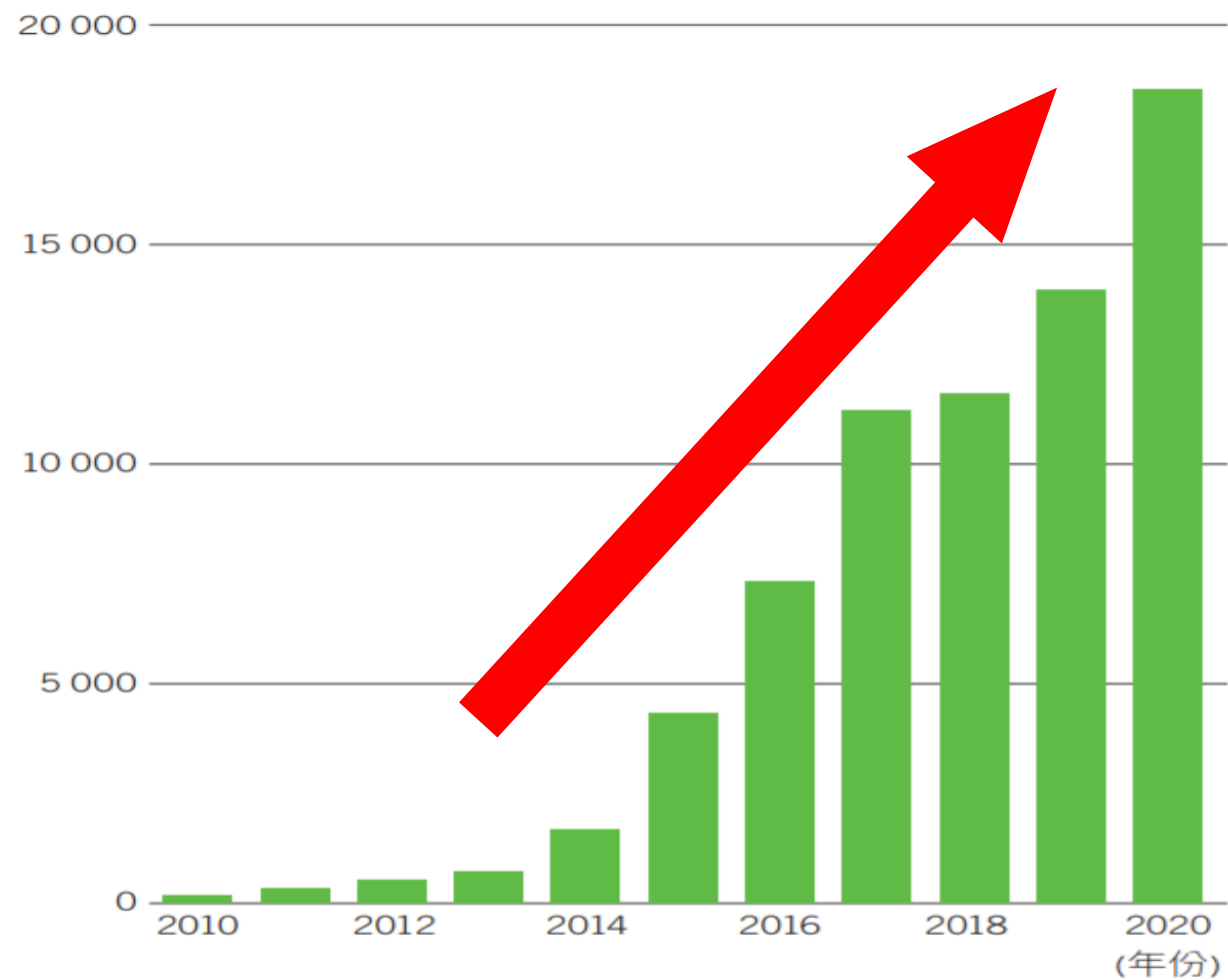
整體電動車數目
TOTAL NUMBER OF
REGISTERED BEV: **31,743**
3.6% (2022/05)



香港登記電動車輛的上升趨勢

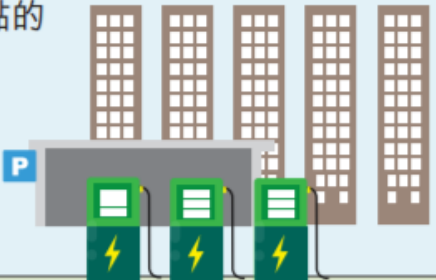
Growing Trends of Registered EVs in Hong Kong

2010至2020年的香港電動車數目
Number of EVs in Hong Kong in 2010-2020



不同電動車種類和使用場景的充電策略

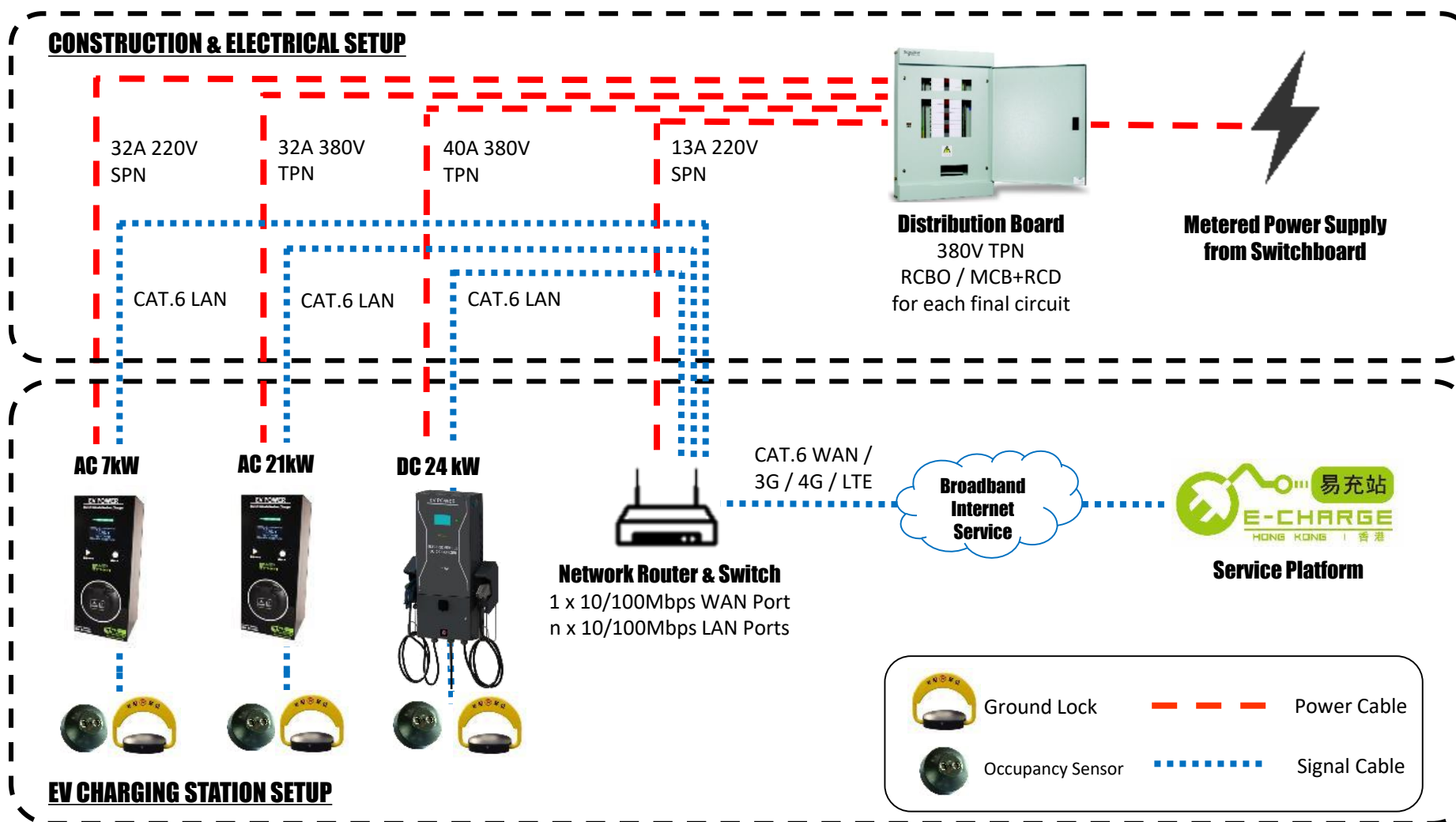
Charging Arrangements for Different Types & Uses of EVs

車輛	主要充電安排
私家車、輕型車輛、電單車 	住所或工作地點的停車位 
大型車輛 (旅遊巴、專營巴士、公共小巴和貨車等) 	車廠、終點站、車站、公共運輸交匯處、通常停泊處 
沒有泊車位安排的商用車， 包括的士 	覆蓋全港的快速充電網絡 

電動車充電設施及系統的概覽

Overviews of EV Charging Facilities and Systems

一般而言，電動車充電設施是指固定電力裝置，包括配電板、配電箱、電纜、管道、線槽以及插座等。如需記錄用電量，則須另設獨立電錶。



香港電動車充電設施的技術指引和守則

Guidelines on EV Charging Facilities in Hong Kong

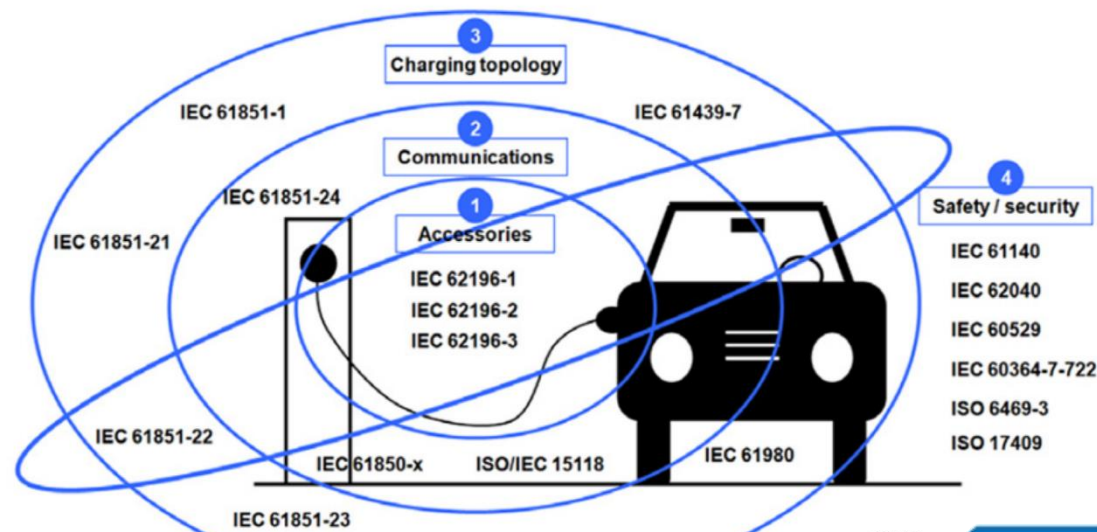
- [Guidelines for Setting-up Standard Charging Facilities for Electric Vehicle at Car Parks](#)
(issued by Environment Bureau)
- [Guidelines for individual owners and tenants of car parking spaces for setting up EV chargers](#)
(issued by Environment Bureau)
- [Technical Guidelines for Electric Vehicle Charging-enabling for Car Parks of New Building Developments](#)
(issued by Environment Bureau / Electrical and Mechanical Services Department)
- [Electric Vehicle Charging Facilities of Internal Transport Facilities in Hong Kong Planning Standards and Guidelines](#)
(issued by Planning Department, see para 7.2.7 to 7.2.11)
- [Technical Guidelines on Charging Facilities for Electric Vehicles](#)
(issued by Electrical and Mechanical Services Department)
- [Additional Fire Safety Requirements for Car Parking Facilities installed with Electric Vehicle Charging Facilities \(4/2020\)](#)
(issued by Fire Services Department)

全球的主要電動車充電標準

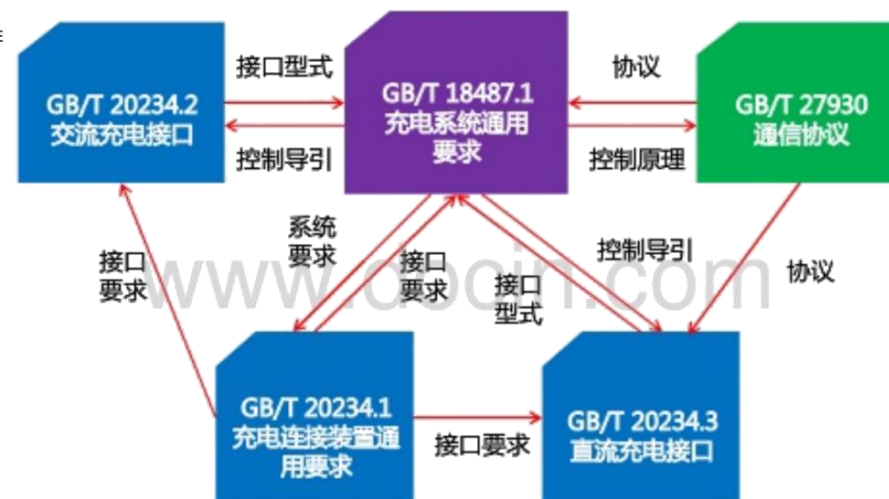
Global EV Charging Standards

歐標標準要求

Overview of Electromobility Standards



国标 标准要求



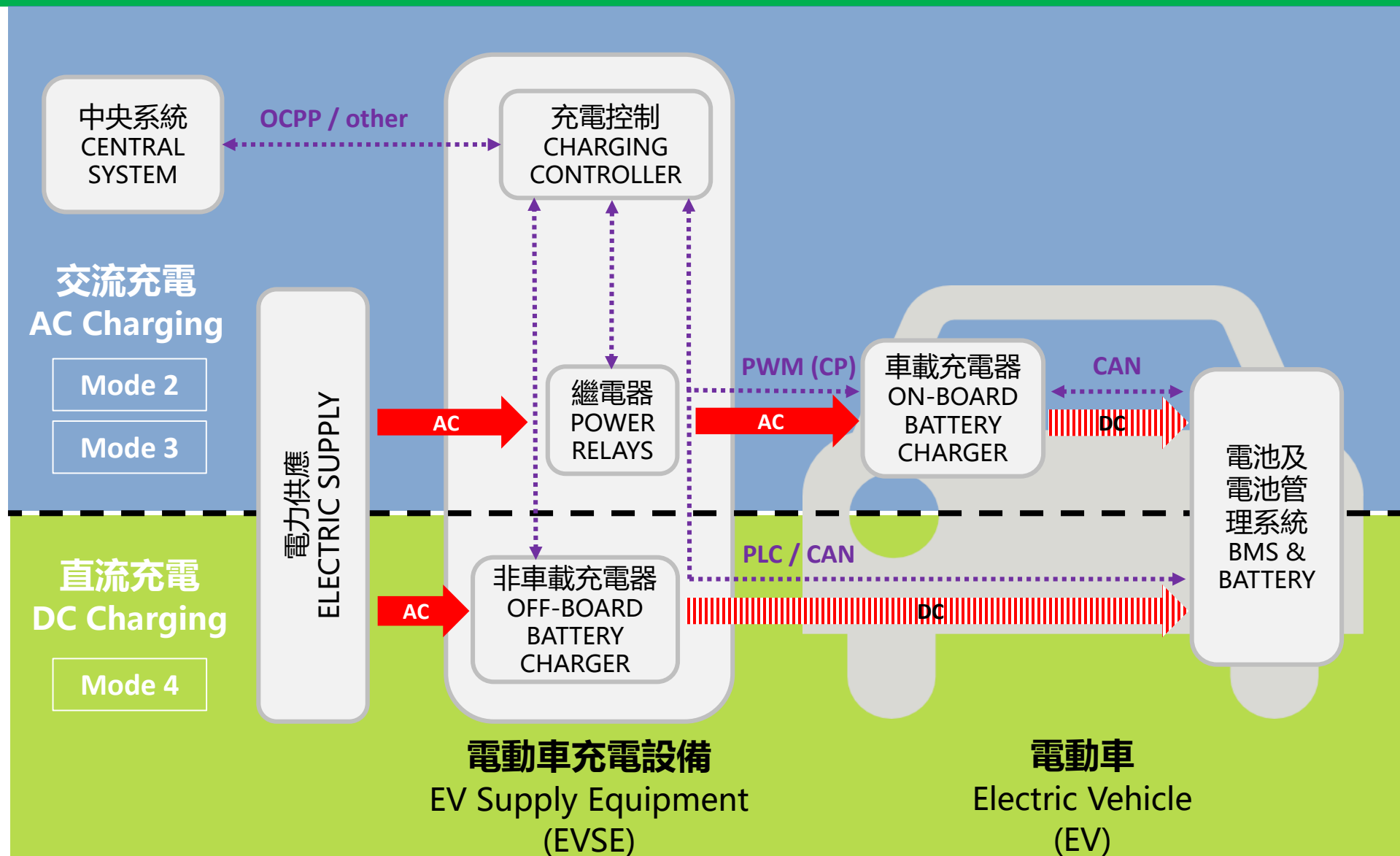
香港主要適用的電動車充電標準

Overview of Applicable Coupler Types & Standards of EV Charging in HK

Vehicle Coupler				
Charging mode		Type 1	Type 2	GB/T Standard
AC charging	 Mode 2 EV Supply Equipment (EVSE)	 In-cable Control Box charging cable assembly	 In-cable Control Box charging cable assembly	 In-cable Control Box charging cable assembly
	 Mode 3 case b EV Supply Equipment (EVSE)	Type 2 Type 1  charging cable assembly	Type 2 Type 2  charging cable assembly	Type 2 / GB/T GB/T  charging cable assembly
	 Mode 3 case c EV Supply Equipment (EVSE)	 SAE J1772 / IEC 62196-2 Type 1	 IEC 62196-2 Type 2	 GB/T 20234.2
DC charging	 Mode 4 EV Supply Equipment (EVSE)	 CHAdeMO / JEV-G105 IEC 62196-3	 CCS Combo 2 IEC 62196-3	 GB/T 20234.3
Charging System & Communication		SAE J1772 / IEC 61851	IEC 61851	GB/T 18487, GB/T 27930

電動車充電設備的基本原理

Basic Concept of EV Charging Equipment



香港電動車適用的交流充電標準

Applicable AC Charging Standards in Hong Kong

 SAE J1772	 	SINGLE PHASE ONLY
 IEC 62196 Type 2	           	SINGLE / THREE PHASE
 GB/T 20234.2		SINGLE / THREE PHASE

電動車交流充電的支持相數

Number of Phases Supported by EVs in AC Charging

支持單相交流充電的電動車型號

Examples of EV Models Support Only Single Phase AC Charging



Hyundai – IONIQ Electric



Nissan - LEAF

支持三相交流充電的電動車型號

Examples of EV Models Support Three Phase AC Charging



Renault - ZOE Z.E.



Tesla – MODEL 3

香港電動車適用的直流充電標準

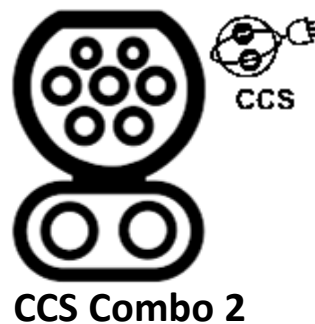
Applicable DC Charging Standards in Hong Kong



Mainly Passenger Cars



with
Tesla CHAdeMO Adapter



Mainly Passenger Cars



Mercedes-Benz



PORSCHE



HYUNDAI



Mainly Buses & Goods Vehicles



DFSK



中國動力
China Dynamics



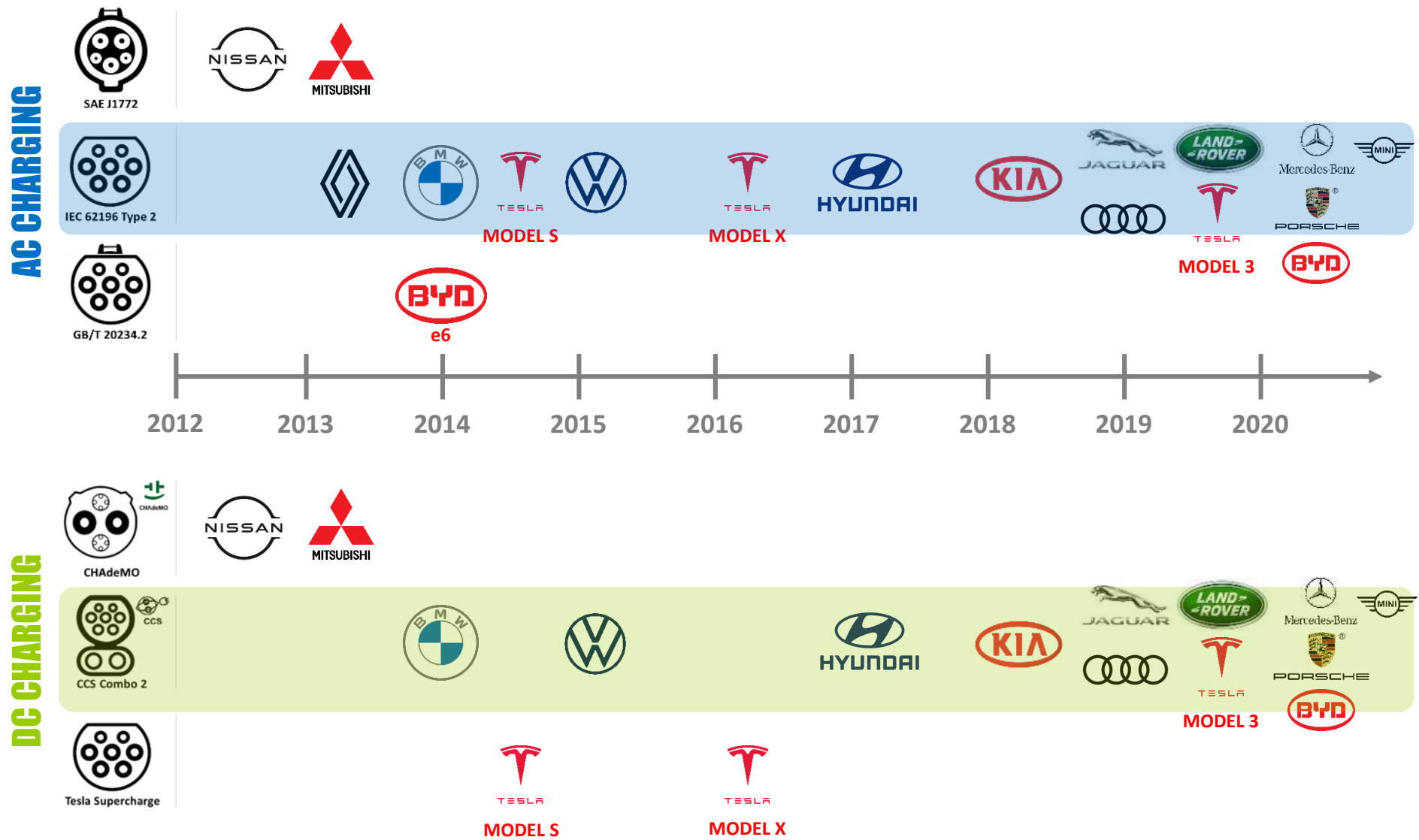
五洲龙
WUZHOU LONG MOTORS



青年汽车
YOUNGMAN

香港電動車充電標準的發展趨勢

Trends of EV Charging Standards Applicable in Hong Kong



電動車充電器的概覽

Overview of EV Chargers

EVG / EVCB



EVQ



Raption 50



Raption 150



Terra HP 350



**4-21 kW
AC
Chargers**

**24-50 kW
DC Chargers**

**100-350 kW
DC Chargers**



EVG



SEV750/60



SEV750/120



SEV750/180



SEV750/360F

全球主要電動車直流充電標準的發展

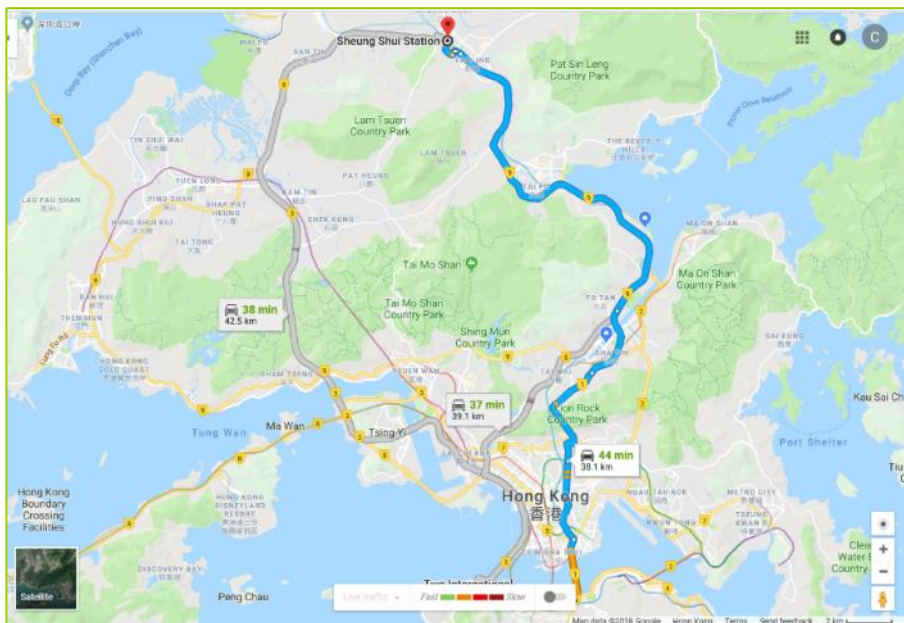
Global Trends on DC Charging Standards

Charging Standard	CHAdeMO		CCS		GB/T	
	Existing	New	Existing	New	Existing	New *
Version	1.0	2.0	1.0	2.0	GB/T	New GB/T
Power	62.5kW (max.)	400kW (max.)	80kW (max.)	350kW (max.)	250kW (max.)	900kW (max.)
Voltage	500V (max.)	1000V (max.)	400V (max.)	1000V (max.)	1000V (max.)	1500V (max.)
Current	125A (max.)	400A (max.)	200A (max.)	500A (max.)	250A (max.)	600A (max.)
Communication with EV	CAN (ISO 11898)	CAN (ISO 11898)	PLC (DIN 70121)	PLC (ISO 15118)	CAN (SAE J1939)	CAN (SAE J1939)

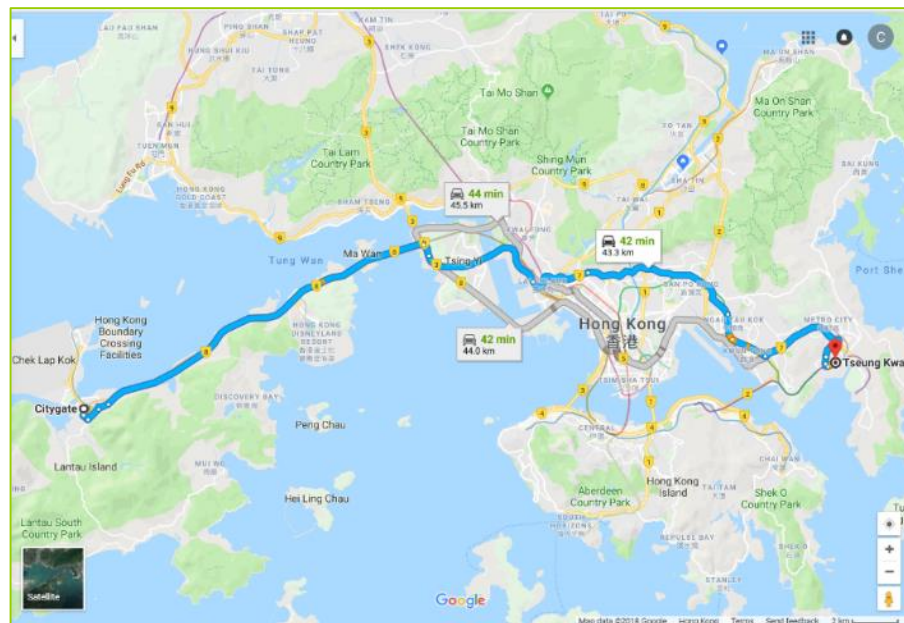
* Note: As of 2022, China Electricity Council and CHAdeMO are developing a new unified **ChaoJi** system (also known as CHAdeMO 3.0), which will replace both GB/T DC and CHAdeMO, and will feature backward compatibility for GB/T DC, CHAdeMO and CCS, all with adapters.

香港私家車輛的行駛概況

Traveling Practice of Passenger Cars in Hong Kong



中環 至 上水
Central to Sheung Shui
38 km Approx.



東涌 至 將軍澳
Tung Chung to Tseung Kwan O
44 km Approx.

香港私家車輛每天平均行駛里程
Average Kilometrage per Day per Passenger Cars in Hong Kong
49.25 km

不同的電動車型號一小時充電後可行駛里程概覽

Top-up Ranges after 1-hour Charging for Different EV Models

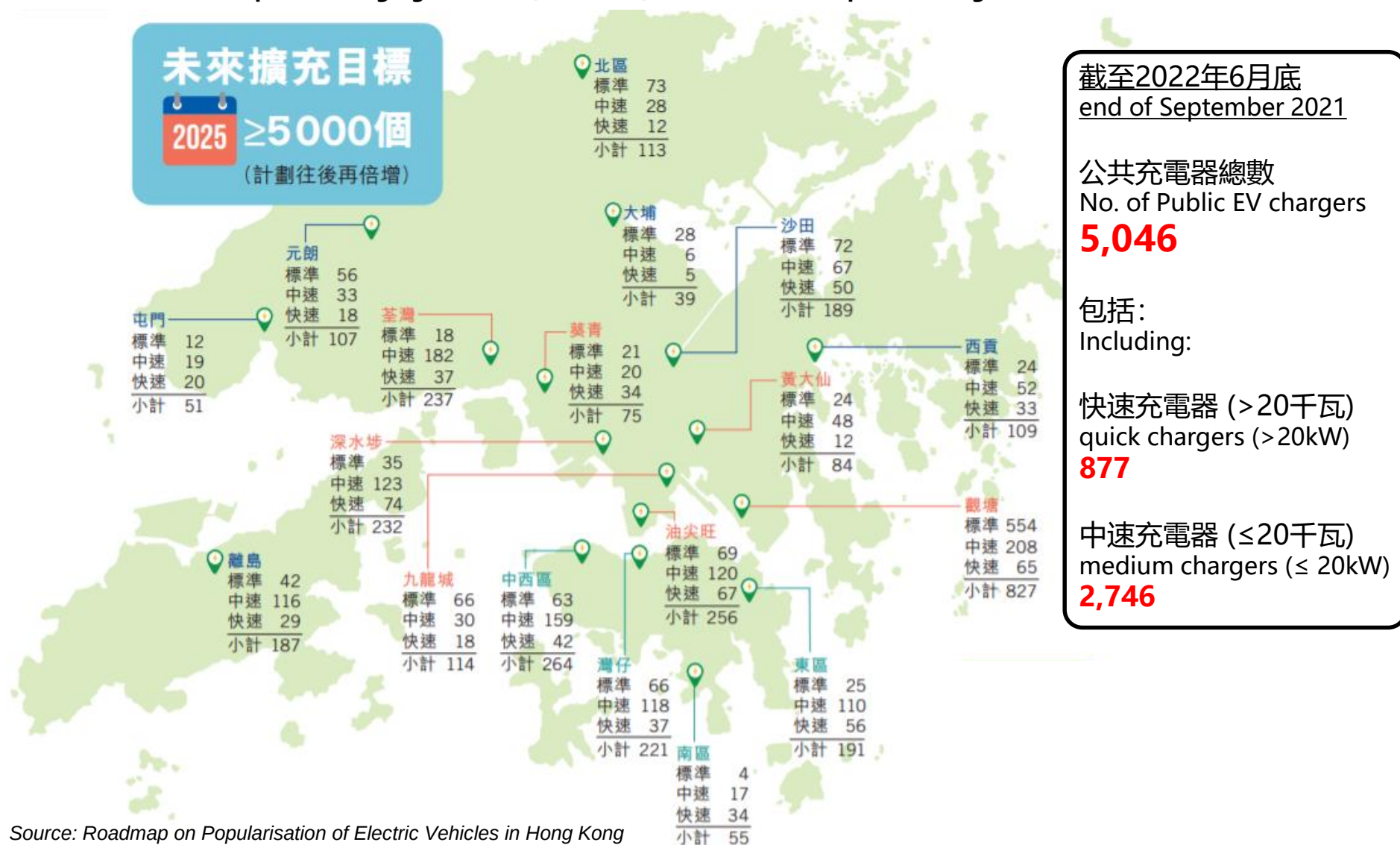
Brand & Model of Common EV	Approx. Range after Full Charge	Max. AC Charging Capacity	DC Charging Standard	Estimated Range Top-up after 1-hour Charging, approx.			
				32A 1-ph 7kW	32A 3-ph 21kW	DC 24kW	DC 50kW
Mercedes-Benz EQC400	450 km	32A, 1-Phase (7kW)	CCS 2	39 km	39 km	135 km	280 km
Audi E-tron Quattro	410 km	16A, 3-Phase (11kW)	CCS 2	30 km	45 km	103 km	215 km
Jaguar I-Pace	470 km	32A, 1-Phase (7kW)	CCS 2	36 km	36 km	125 km	260 km
Nissan LEAF 2018	310 km	32A, 1-Phase (7kW)	CHAdemo	54 km	54 km	186 km	310 km
Kia Niro	480 km	32A, 1-Phase (7kW)	CCS 2	52 km	52 km	180 km	375 km
Hyundai KONA electric	310 km	32A, 1-Phase (7kW)	CCS 2	55 km	55 km	190 km	310 km
Tesla Model 3	560 km	24A, 3-Phase (16kW)	CCS 2	71 km	160 km	244 km	509 km
Tesla Model X	500 km	24A, 3-Phase (16kW)	Tesla Supercharger	35 km	79 km	120 km	250 km
Tesla Model S	610 km	24A, 3-Phase (16kW)	Tesla Supercharger	42 km	96 km	146 km	305 km
Renault Zoe Z.E.	400 km	32A, 3-Phase (21kW)	N/A	68 km	204 km	N/A	N/A
BMW i3 2017	330 km	16A, 3-Phase (11kW)	CCS 2	70 km	105 km	240 km	330 km
Volkswagen E-Golf 2017	300 km	16A, 2-Phase (7kW)	CCS 2	30 km	60 km	205 km	300 km

香港公共充電設施的分佈

Distribution of Public Charging Facilities in Hong Kong

公共充電設施現時分佈 (2020年底) 及未來擴充目標

Current distribution of public charging facilities (end-2020) and the future expansion target



香港公共充電設施的分佈

Distribution of Public Charging Facilities in Hong Kong



**Public Charging Stations at
HK Government Car Parks**



**Public Charging Stations at
MTR Shopping Malls**



香港公共充電設施的分佈

Distribution of Public Charging Facilities in Hong Kong



**Public Medium & Quick Charging Station at
Hong Kong – Zhuhai – Macao Bridge HK Port**



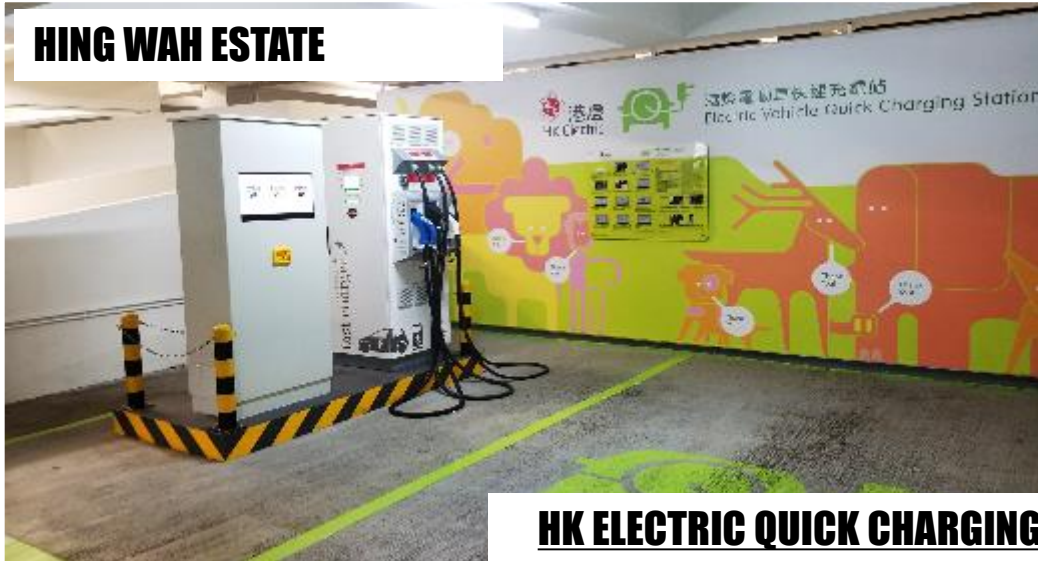
**Project Status:
Completed in 2018**



香港公共充電設施的分佈

Distribution of Public Charging Facilities in Hong Kong

HING WAH ESTATE



CITY PLAZA

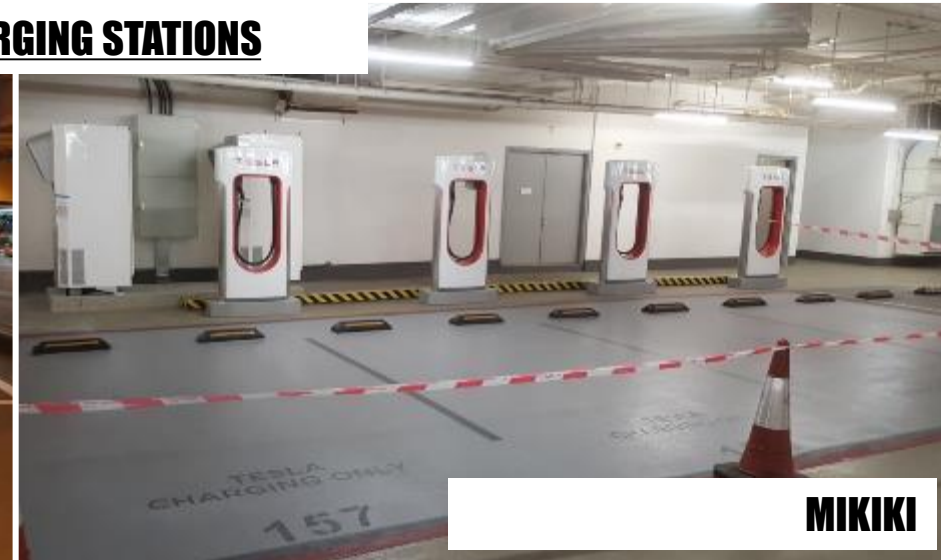


HK ELECTRIC QUICK CHARGING STATIONS

TESLA SUPERCHARGING STATIONS



KAI TAK CRUISE TERMINAL



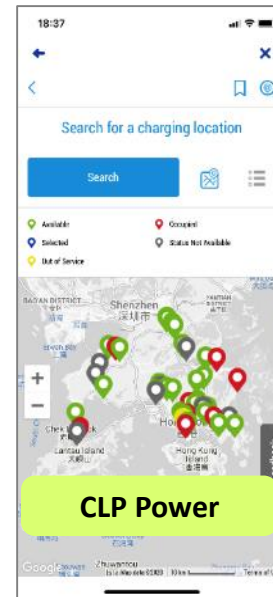
MIKIKI

香港現有的電動車公共充電網絡

Public Charging Networks in Hong Kong



E-CHARGE (HK)



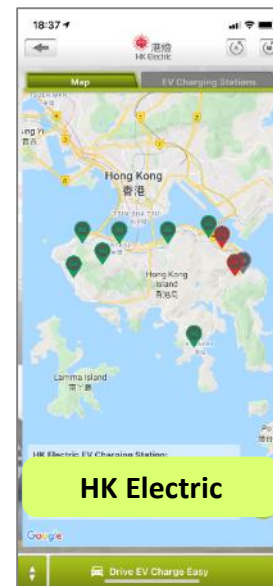
CLP Power



Tesla Supercharge



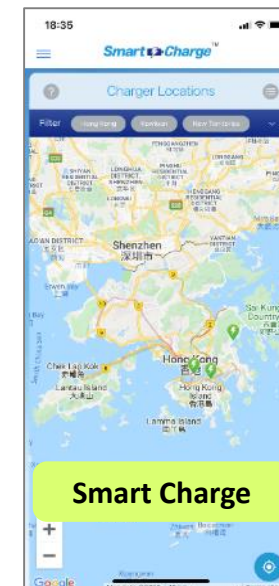
evMega



HK Electric



Autotoll



Smart Charge

香港公共充電設施的收費概覽

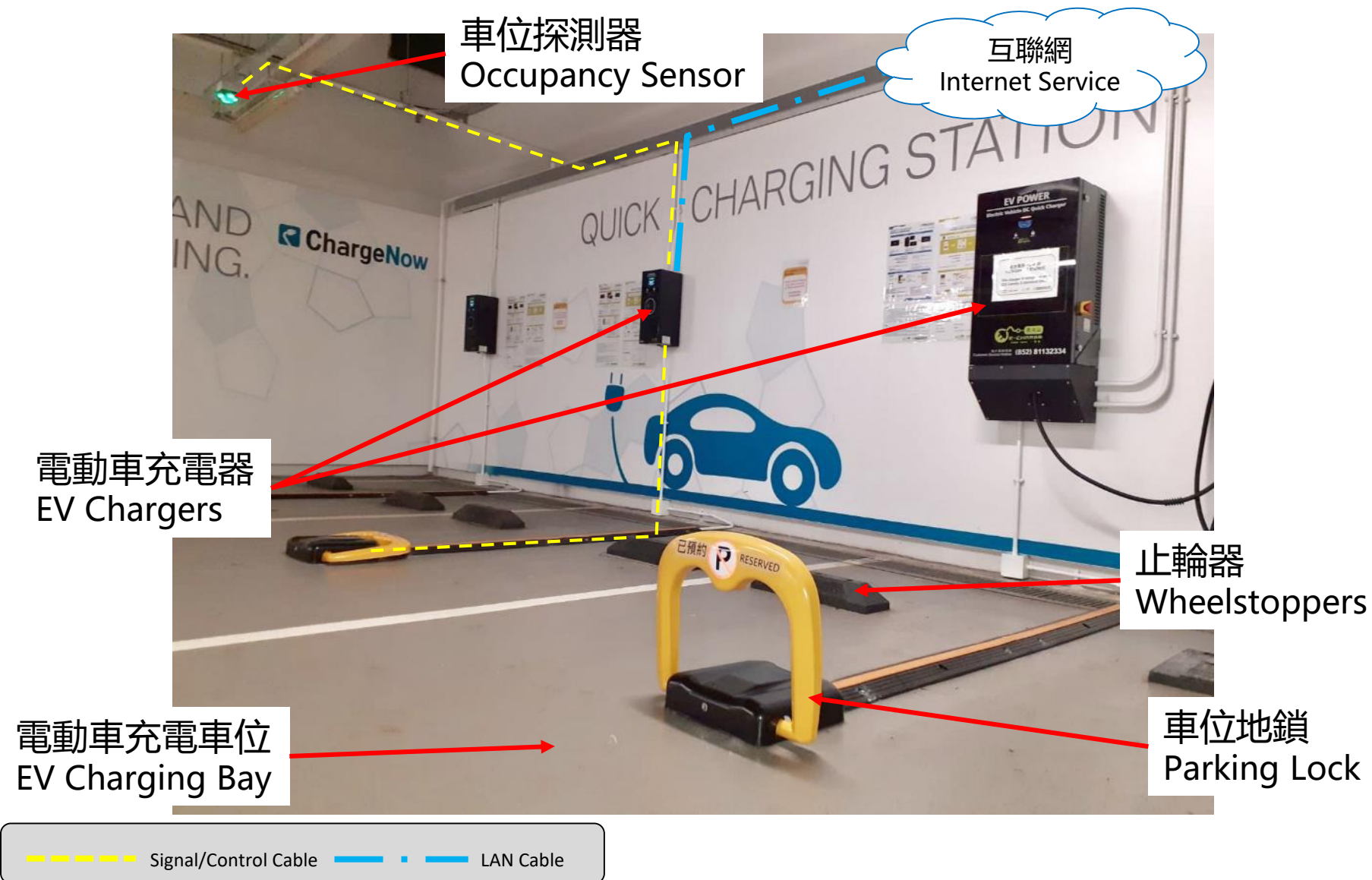
Service Charges of Paid Public Charging Facilities in Hong Kong

Charging Service Fees of different Public EV Charging Stations in E-CHARGE (HK) Network:

E-CHARGE (HK) Public Charging Station	District	Rated Output of EV Charger	Charging Fee (HKD)
New Town Plaza III	Sha Tin	50kW, DC	\$24 / 15-min
Cheung Kong Center	Central	32A, 3-Phase	\$40 / hour
Kowloon Bay International Trade and Exhibition Centre	Kowloon Bay	32A, 3-Phase	\$24 / hour
AIA Tower	North Point	32A, 1-Phase	\$20 / hour
AIA Financial Centre	San Po Kwong	32A, 1-Phase	\$20 / hour
Manulife Financial Centre	Kwun Tong	32A, 1-Phase	\$20 / hour
Grand Promenade	Sai Wan Ho	32A, 1-Phase	\$20 / hour

電動車智能充電網絡的配套設施和服務

Additional Facilities & Services of Intelligent EV Charging Networks





(a member of EV POWER Group)

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www.hkev.com.hk

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Your Reliable Charging Partner



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