

**Inaugural Ceremony of Research Centre for Electric Vehicles cum Forum on
Intelligent EV and Carbon Neutrality Energy**

26 February 2024

**Towards a Sustainable Future:
EMSD's Contribution to Hong Kong's Green Mobility Initiative**

Ir Eric PANG, JP, Director, EMSD

Opening

1. Good afternoon, distinguished guests, ladies and gentlemen. It's my honor to join you at this launch ceremony of the Research Centre for Electric Vehicles cum Forum on Intelligent EV and Energy for Carbon Neutrality. My sincere thanks to the Hong Kong Polytechnic University for inviting me to share the comprehensive efforts of the Government, particularly the Electrical and Mechanical Services Department (EMSD), in supporting Hong Kong's Green Mobility Initiative as we steer toward a sustainable future.

Movement Toward EV Adoption

2. During the 75th United Nations General Assembly session in September 2020, China announced a landmark commitment to peak carbon dioxide emissions before 2030 and to reach carbon neutrality before 2060. The electrification of transportation has then become a pivotal global movement in the face of this urgent climate challenge.
3. Echoing our nation's pledge and recognizing the critical nature of climate change, our Chief Executive, in the 2020 Policy Address, declared Hong Kong's objective to attain carbon neutrality before 2050 and to slash the city's total carbon emissions by 50% from the 2005 levels before 2035. In 2021, the Government published the "Hong Kong's Climate Action Plan 2050", the "Clean Air Plan for Hong Kong 2035" and the "Hong Kong Roadmap on Popularization of Electric Vehicles". Four key strategies for decarbonization are outlined, including "net-zero electricity generation", "energy saving and green buildings", "green transport" and "waste reduction".
4. Transportation is the second-largest carbon emission source of Hong Kong, accounting for 18% of the total carbon emissions. Adopting clean transportation

technology is essential in our efforts to halve the carbon emissions before 2035 from our 2005 benchmark and to reach our ultimate goal of carbon neutrality before 2050. The above documents also outline policy directions and set forth targets across various sectors to encourage the uptake of new energy transportation technologies.

Essential Figures of EV Trends

5. The global sales of electric vehicles (EVs) have shown a consistent upward trend. According to the International Energy Agency (IEA), the sales of electric car crossed the 10 million mark in 2022. The market share of electric cars in the total vehicle sales has increased significantly from around 4% in 2020 to 14% in 2022, reflecting a strong consumer shift towards EV adoption. Our Chinese automaker BYD has overtaken Tesla as the world's top new energy vehicle manufacturer, with total sales exceeding 3 million vehicles last year.
6. In Hong Kong, the government's efforts to promote EVs are yielding positive results. The statistics of Transport Department show that the number of electric vehicles has exceeded 70,000, which is about 8% of all vehicles in the city. The percentage of EV in newly registered private cars jumped from 6.3% in 2019 to 64.1% in November 2023. To support this growth, over 7,000 public EV charging points are now available across all 18 districts as of December 2023.

Government's Initiatives to Encourage EV Adoption

7. The government have devotedly launched a series of new initiatives for facilitating the switch to EVs. Notable among these is the first registration tax (FRT) concession for EVs, which includes the "One-for-One Replacement" Scheme. Data from the Transport Department indicates that in the first 11 months in 2023, two-third of all new private car registrations, or over 25,000, are EVs.
8. To further promote green transportation, since 2011, the government has allocated HKD \$1.1 billion to the New Energy Transport Fund, which supports the transport sector in adopting innovative green transport technologies through trials. To date, the fund has approved 300 trial projects, encompassing a range of electric commercial vehicles and vessels. Additional subsidies have been earmarked for the procurement of proven technologies suitable for local use, as well as trial projects involving electric taxis, heavy vehicles, and ferries.
9. To overcome initial obstacles in EV charging infrastructure, the Environmental

Protection Department (EPD) launched the EV Charging at Home Subsidy Scheme (EHSS) in October 2020 to offer financial support to e-private car owners. This scheme encourages the installation of EV charging-enabling infrastructure in existing private residential buildings, paving the way for car park owners to set up chargers for their EVs. Moreover, the Buildings Department (BD) also published guidelines for granting Gross Floor Area (GFA) concessions for car parking spaces provided with EV charging-enabling infrastructure.

10. In order to further improve the accessibility and convenience of EV charging for the general public and promote market participation in providing charging services, policies and guidelines on conversion of Petrol Filling Station (PFS) sites to serve as Quick Charging Stations (QFS) have recently been formulated. In addition, the Government targets to continuously expand the EV charging network of both public and private sectors to about 200,000 by mid-2027 by progressively marketize the EV charging services in existing government car parks and other measures.

EMSD's Effort in EV Popularization

11. The Electrical and Mechanical Services Department (EMSD) has stepped forward in the green transportation revolution. We've published comprehensive "EV Charger Technical Guidelines", setting the standard for the design, installation, and operation of electric vehicle chargers in Hong Kong. These rigorous guidelines are crafted to ensure the safety, performance, and reliability in EV charging, which are essential for the promotion of EVs. Many EMSD colleagues are working in various departments to provide expert technical advice on the EV approval.
12. We also recognize the importance and safety of EV maintenance in EV development. With our effort, the Vehicle Maintenance Technical Advisory Committee (VMTAC), with members from the government and stakeholders of the vehicle trade, has agreed to add the scope of EV maintenance into the existing voluntary registration schemes for vehicle mechanics and vehicle maintenance workshops. We are now closely liaising with the vehicle trade, training institutes and relevant stakeholders in formulating the registration requirements of EV vehicle mechanics and EV vehicle maintenance workshops.
13. We are also actively working with various stakeholders to jointly establish and promote training courses to build up the technical knowledge and maintenance skills of talents. The Occupational Safety and Health Council (OSHC) has launched an electric vehicles maintenance safety awareness course on electric vehicles work safety;

the Vocational Training Council (VTC) is progressively introducing certificate courses in EV HV and LV repair and maintenance, aiming to equip our mechanics to cope with the development of electric vehicles.

Trial projects on Hydrogen-fueled EVs

14. Looking beyond conventional EVs, we recognize the transformative potential of hydrogen-fueled electric vehicles, which are also crucial in achieving the city's goal of zero vehicular emissions, especially for heavy vehicles. There are two categories of hydrogen-powered vehicles, they are the hydrogen fuel cell vehicle (HFCV), which is actually another form of EV, and the other is hydrogen internal combustion engine (ICE) vehicle. HFCV, which is equipped with regenerative braking capability and supplementary battery, offers higher operating energy efficiency and superior uphill performance compared to hydrogen ICE vehicle. Besides, HFCV is more commercially available in the current market compared to hydrogen ICE vehicle. Consequently, HFCV, similar to conventional EV, is a more feasible and greener transportation alternative. The Government has committed to collaborate with stakeholders to conduct trials of hydrogen-fueled electric vehicles within the three years from 2023. These trials are steps towards formulating a roadmap for implementation of new energy public transport by 2025. In this regard, the Government established an Inter-departmental Working Group on Using Hydrogen as Fuel in 2021, comprising of thirteen Government policy bureaux and departments, to put forward the hydrogen trials.
15. To propel the development of hydrogen-fueled electric vehicles towards a sustainable future, EMSD is actively connecting with national laboratories, such as the China Automotive Technology & Research Center, and suppliers to explore opportunities for facilitating the online collection of key safety parameters with a view to closely monitoring the hydrogen vehicle and infrastructure performances to safeguard public safety.
16. Currently, there are 9 active hydrogen trial projects. All data collected from these trial projects are crucial for us to consider paving a more concrete way in scaling up and commercializing the hydrogen-fueled electric vehicles, thereby propelling us towards a more sustainable future.

Amendment to Cap. 51

17. The rapid emergence of new hydrogen technologies and the increasing demand for

their wider applications has outpaced regulatory development. After benchmarking with other pioneering regions in the hydrogen economy, we will amend the Gas Safety Ordinance (Cap.51) to regulate the safety of using hydrogen as fuel, and to match the pace of advancement of hydrogen development.

18. Hong Kong's distinguished history of fuel gas safety over the past thirty years provides a firm foundation for this endeavor. Our Gas Safety Ordinance is a testament to a robust regulatory framework that has effectively governed fuel gas safety within our city. Active preparations for the legislative amendment are underway, and it is targeted to introduce the proposal to the Legislative Council by 2025.

Concluding remarks

19. Leveraging Hong Kong's position as a highly-connected international city with strong connections with the Guangdong-Hong Kong-Macao Greater Bay Area, the Hong Kong Government is committed to working hand-in-hand with trade and stakeholders to promote electric vehicles and realize our vision for decarbonization.
20. Last but not least, I would like to thank PolyU for setting up the Research Centre for Electric Vehicles and rolling out the latest master course in electric vehicles, which help cultivate more talents for the industry and contribute to green mobility in Hong Kong. Building a clean future requires concerted efforts of every one of us. I believe that through active participation and discussions, governments and industries can together forge a pathway towards sustainable future. Thank you.