

APEC Workshop on Hydrogen for Land Transport (26 September 2025)

Opening Remarks by DEMS

Distinguished guests, ladies, and gentlemen,

Greeting and Introduction

It is my honour to welcome you to the APEC Workshop on Hydrogen for Land Transport.

Climate Emergency

Climate change is no longer a distant threat—it is a present and pressing reality. From record-breaking rainfall to increasingly frequent heatwaves, extreme weather events have become more severe and more common. These challenges underscore the urgency of decarbonization and the need for a comprehensive green transformation.

Since 1991, the Electrical and Mechanical Services Department (EMSD) has represented Hong Kong, China in the APEC Energy Working Group, and its expert groups. Over the years, we have actively contributed to regional collaboration in advancing energy efficiency and promoting sustainable development across the APEC region.

Joint meeting of four APEC Expert Groups

This April, we had the privilege of hosting the first-ever joint meeting of all the four expert groups of APEC Energy Working Group. The event brought together over 100 experts and delegates from 18 APEC member economies to exchange insights on energy security, renewable energy, energy efficiency, and sustainable development.

Building on this momentum, we are switching our focus today to one of the most promising energy vectors for the future – Hydrogen. I am grateful for your presence and look forward to the exchange of experiences, ideas, and collaboration opportunities as we explore hydrogen's role in clean transportation.

Hydrogen for Land Transport

Hydrogen is the most abundant element in the universe and holds immense potential as a

clean energy source. It is increasingly recognised as a key enabler of green transport and a cornerstone of the global energy transition.

According to the International Energy Agency (IEA)'s Global Hydrogen Review 2024, nearly 1200 hydrogen refuelling stations are in operation worldwide. The use of hydrogen in road transport grew by an impressive 55% in 2023, accelerating from 40% in the previous year. For APEC economies, hydrogen has become a key alternative energy vector to decarbonize various sectors such as transportation.

While economies worldwide strive to unlock hydrogen's full potential through innovation, we still face challenges like high production costs, technological barriers, and demand uncertainty.

APEC Energy Goals

The APEC Policy Guidance to Develop and Implement Clean and Low-Carbon Hydrogen Policy Frameworks in the Asia-Pacific provides orientation on key areas and actions to facilitate knowledge, technological and policy exchanges among member economies. It aims to foster innovative, inclusive, and sustainable growth across the region, while supporting the achievement of the APEC energy goals for doubling renewable energy from 2010 levels by 2030 and reducing energy intensity 45 percent from 2005 levels by 2035.

As part of this initiative, we are undertaking this APEC project to drive the development and deployment of hydrogen for land transport, with the goal of accelerating decarbonization and contributing to the establishment of sustainable and environmentally friendly transportation systems.

Before we present the findings of our study later in the programme, please allow me to share our progress and efforts in promoting hydrogen development in Hong Kong, China.

Four Strategies in Hong Kong, China

Transportation is the second-largest source of carbon emissions in our city, accounting for approximately 20% of the total. Recognizing hydrogen as a potential ultimate solution for green transformation, we launched the Strategy of Hydrogen Development in Hong Kong in 2024. This strategy is built on four pillars: "Improving Legislation,"

“Establishing Standards,” “Aligning with the Market,” and “Advancing with Prudence.” It forms the foundation for building a safe and scalable hydrogen ecosystem in Hong Kong, China.

First Strategy: Improving Legislation

As the Gas Authority with over 30 years of experience regulating town gas, liquefied petroleum gas (LPG), and natural gas, the EMSD is committed to a safety-first principle. In 2024, we commenced developing a robust legal framework to govern the entire chain of hydrogen industry, referencing our existing Gas Safety Ordinance.

Following extensive consultation and Legislative Council deliberation, the Gas Safety (Amendment) Ordinance was passed and gazetted in two months ago, marking a major regulatory milestone. Subsidiary regulations, covering the importation, manufacture, storage, transport, supply, and use of hydrogen fuel, are now being drafted for legislative review in next year. The new regulation would provide legal foundation for safe hydrogen development in Hong Kong, China.

Second Strategy: Establishing Standards

We have also made substantial progress formulating technical guidelines for hydrogen fuel applications for land transport, including vehicles, maintenance workshops, refuelling stations and Quantitative Risk Assessment Study for Hydrogen Installations.

These guidelines align with international standards while addressing the city’s unique urban density and geographical characteristics. They are being applied in hydrogen fuel trial projects to safeguard public safety and provide clear guidance for industry.

Furthermore, EMSD conducted a comprehensive Quantitative Risk Assessment (QRA) for hydrogen-fuelled vehicles using our extensive vehicle tunnel network—making us a pioneer in such research. The study confirmed that the risks are comparable to those of LPG and conventional vehicles, provided safety standards are met. These findings have been recognized internationally and published in official journals of the Institution of Gas Engineers and Managers, UK, and the Hong Kong Institution of Engineers.

In July 2024, the first hydrogen fuel cell (HFC) double-decker bus successfully traversed our tunnels. Its operations have expanded across multiple cross-harbour routes and

highways throughout the territory of Hong Kong, China, demonstrating smooth performance.

According to APERC Hydrogen Report 2024, APEC region led the world in committed hydrogen production capacity and reflecting a 68% growth—primarily driven by developments in China, mainly renewable energy-based hydrogen, and North America, mainly natural gas-fuelled hydrogen with carbon capture and storage.

To promote the development of green or low-carbon hydrogen, bridging the hydrogen technologies between China and the global market, as well as facilitating green financing, EMSD is formulating the approach of hydrogen standard certification, aiming for implementation by 2027.

Third Strategy: Aligning with the Market

To meet our pledge of carbon neutrality by 2050, we strive to identify suitable local hydrogen application scenarios, focusing on heavy-duty vehicles and cross-boundary transport. Our recent milestones include launching a hydrogen double-decker bus passenger service, completing a hydrogen light rail vehicle trial, and commencing a trial of three street washing vehicles and the first public hydrogen filling station in June this year. Upcoming trials will cover more vehicle types, with operational data analysis guiding our future planning.

Fourth Strategy: Advancing with Prudence

China is the world's largest hydrogen consumer and a major producer. With strong support from our motherland, Hong Kong, China is leveraging its distinctive role as a “super connector” between China and the global community.

We have signed Memorandum of Cooperation (MoC) with China's Authorities to accelerate hydrogen development through aligning national and international standards, formulating a green hydrogen certification framework, and establish a “Green Corridor” for cross-border hydrogen quality testing and certification, and to simplify customs clearance for hydrogen transportation.

Conclusion

In conclusion, our collaboration with APEC's expert reflects our strong commitment to advancing energy transformation. I look forward to our discussions today inspiring new ideas, forging partnerships, and accelerating our collective transition to green transportation.

Before I close, I warmly invite you to join the International Hydrogen Development Symposium from 18 to 20 May 2026 at the Hong Kong Convention and Exhibition Centre. This signature event will be held as part of Hydrogen Week, focusing on key themes including regulatory framework for hydrogen safety, global certification system for green and low-carbon hydrogen, potential of liquid hydrogen applications, and quality infrastructure for hydrogen development. The event will bring together global industry leaders, policymakers, and technical experts for a dynamic programme of conferences, exhibitions, and technical visits to showcase technologies and share insights.

We are also excited that the 1st APEC Clean and Low-Carbon Hydrogen (CLCH) Annual Convention will be held in conjunction with this event in Hong Kong, China. Your participation will be invaluable in advancing collaboration and innovation across the APEC region.

Together, let us drive toward a greener, and more sustainable future for all.

Thank you.

(Around 1300 words, about 10 minutes)