For discussion on
26 May 2025

LEGISLATIVE COUNCIL
PANEL ON ENVIRONMENTAL AFFAIRS

PROGRESS OF THE IMPLEMENTATION OF THE STRATEGY OF HYDROGEN DEVELOPMENT IN HONG KONG

PURPOSE

The Environment and Ecology Bureau ("EEB") promulgated the Strategy of Hydrogen Development in Hong Kong ("the Hydrogen Strategy") in June 2024, setting out the four major strategies of improving legislations, establishing standards, aligning with the market, and advancing with prudence to create an environment conducive to the development of hydrogen energy in Hong Kong in a prudent and orderly manner. This paper briefs Members on the progress made by the Government in implementing the aforesaid Strategy.

BACKGROUND

2. Our country has been actively assuming its responsibilities as a major country and playing a significant role in the global climate action. As early as 2020, China made it clear that they would endeavour to achieve the peak of carbon emissions before 2030 and carbon neutrality before 2060. To reduce carbon emissions, Hong Kong ceased the construction of new coal-fired generating units following its return to the motherland in 1997, and has been gradually replacing coal-fired power generation with natural gas and zero-carbon energy sources, including nuclear power imported from the Mainland. After years of effort, Hong Kong's carbon emissions reached its peak in 2014. In 2023, Hong Kong's carbon emissions had decreased by approximately one-quarter compared to the peak level. To align with our country's "dual carbon" goals, the Hong Kong Special Administrative Region Government has set an interim target of cutting carbon emissions by half from the 2005 levels before 2035 and achieving carbon neutrality before 2050.

3. To tackle the challenge of climate change, the world is striving to phase

out fossil fuels and accelerate energy transition. Hydrogen energy is a new energy source with significant decarbonisation potential. It produces no carbon emissions during combustion, and its "zero-carbon emission" feature has been gaining traction internationally. Developing hydrogen energy can also encourage technological innovation and research and development, giving impetus to the development of relevant technologies and facilities, creating job opportunities, and promoting economic growth. Though the scarce land resources and dense population have rendered it difficult for Hong Kong to develop into a major manufacturing base for green energy, Hong Kong can still promote green transformation by leveraging the country's advantage as a hydrogen powerhouse energy to expedite our green transition and achieve carbon neutrality. As an international city, Hong Kong can also serve as a demonstration platform for green and low-carbon technologies, and facilitate the export of technologies and products developed in the Mainland and Hong Kong. As an international financial centre, Hong Kong can even help provide green financing and professional services to support the green transformation in various areas and regions.

4. To prepare for opportunities presented by the development of hydrogen energy, the Government announced the Hydrogen Strategy in June 2024, setting out the four major strategies of improving legislations, establishing standards, aligning with the market, and advancing with prudence to create an environment conducive to the development of hydrogen energy in Hong Kong in a prudent and orderly manner, so that Hong Kong would be able to capitalise on the environmental and economic opportunities brought about by the recent developments of hydrogen energy in different parts of the world, our country in particular. It can also help Hong Kong broaden cooperation with the Guangdong-Hong Kong-Macao Greater Bay Area ("GBA") and even the world, integrate into the country's overall development, and develop new quality productive forces.

MAJOR POLICY INITIATIVES AND PROGRESS UPDATES

5. Since the announcement of the Hydrogen Strategy in June 2024, the Government has adopted a multi-pronged approach over the past year by proactively promoting local development of hydrogen energy according to the following four strategies and action plans:

(a) **Improving legislations:** to submit Legislative Council ("LegCo") proposed amendments to the Gas Safety Ordinance (Cap. 51) to

provide the legal basis for regulating hydrogen used or intended to be used as fuel;

(b) **Establishing standards:** to establish comprehensive local standards and guidelines and formulate the approach of green hydrogen standard certification;

(c) **Aligning with the market:** to strengthen regional cooperation on the relevant technological studies, to develop sufficient supporting facilities for the local hydrogen development, and to collaborate with the academia and training institutions on capacity building on an ongoing basis; and

(d) **Advancing with prudence:** to continuously encourage and promote local trial projects to demonstrate technological innovation and industrial application of hydrogen energy, and utilise more cost-effective grey hydrogen for various projects. As the market gradually matures, to facilitate transition from grey hydrogen to blue and green hydrogen.

Progress of the measures taken in the four areas mentioned above is elaborated in the ensuing paragraphs.

(A) Improving Legislations

Legislative amendments to the Gas Safety Ordinance (Cap. 51)

6. Clear legislation is conducive to innovation. Establishing a comprehensive and holistic regulatory framework to regulate the use of hydrogen as fuel can enhance the public confidence in hydrogen safety and create an environment conducive to the local development of hydrogen energy. The framework covers a range of safety aspects, including gas quality, safety of installations and facilities, personnel and emergency handling, etc.

7. Hydrogen is currently categorised as Class 2 dangerous goods, regulated under the Dangerous Goods Ordinance (Cap. 295). But the adoption of hydrogen as fuel is relatively new. The nature and the supply chain of hydrogen as fuel are very similar to those of other gases currently regulated under the Gas Safety Ordinance (Cap. 51) ("the Ordinance"). In view of the effectiveness of the Ordinance in regulating various gases under the Ordinance in Hong Kong and the trade's familiarity with the Ordinance, we introduced the

Gas Safety (Amendment) Bill 2025 to the LegCo for First Reading and Second Reading on 16 April 2025 after extensive trade consultation. Two major amendments to the Ordinance have been proposed: (i) to include hydrogen as fuel in the safety regulatory framework of the Ordinance; and (ii) to add provisions allowing the introduction of new subsidiary legislation, so as to fully and effectively regulate on the importation, manufacture, storage, transport, supply and use of hydrogen as fuel in Hong Kong.

8. The first meeting of the Bills Committee on Gas Safety (Amendment) Bill 2025 was held on 12 May 2025. We are actively following up Members' comments and are striving to complete the amendment of the Ordinance in 2025. As the hydrogen energy market and its technological advancement are developing fast, we proposed amending the Ordinance to empower the Chief Executive in Council to make subsidiary legislation, subject to negative vetting, on the details of the regulation of hydrogen and related matters. This will provide the flexibility for the Government to update the regulatory requirements in tandem with the latest developments in the market and technologies. The subsidiary legislation will regulate the quality of the hydrogen supplied; registration of companies engaging in the business of importation, manufacture, or supply; the construction and use of hydrogen installations; hydrogen containers; the use of hydrogen systems; hydrogen conveyance vehicles; and registration of personnel who is responsible for works involving the fabrication, connection, disconnection, testing, commissioning, decommissioning, maintenance, repair, or replacement of a hydrogen system of a vehicle. We have commenced the drafting of the subsidiary legislation and target to introduce the subsidiary legislation to the LegCo in 2026.

(B) Establishing Standards

<u>Setting out codes of practice and technical guidelines related to hydrogen fuel safety</u>

9. Although the amendment of the Ordinance has yet to be completed, the Government, following consultation with the trade, had already completed the formulation of the Code of Practice for Hydrogen Fuelled Vehicles and Maintenance Workshops, the Code of Practice for Hydrogen Filling Stations, and Guidance Note on Quantitative Risk Assessment Study for Hydrogen Installations in Hong Kong in 2024, with a view to establishing a comprehensive safety standard system having regard to Hong Kong's urban development needs and natural geographical environment. The purpose is to safeguard public safety while providing clear safety guidelines for the industry to test out and

develop hydrogen energy technologies. The Government is currently compiling the Code of Practice for Stationary Hydrogen Fuel Cell Power Generation Systems to provide technical specifications for the safe configuration and operation of hydrogen fuel cell power generation systems in Hong Kong. The new code is expected to be published in Q4 2025.

10. In addition, in view of the many tunnels in Hong Kong, the Government has completed a risk assessment on hydrogen fuelled vehicles using tunnels. The results show that the risks of using tunnels are comparable to those of LPG vehicles and other fossil fuel vehicles. Hydrogen fuelled vehicles can safely travel in tunnels if they comply with the safety requirements of the relevant codes of practice and vehicle licensing guidelines. Hong Kong is the first place in the world to conduct relevant research, and the research results have been widely recognised by the local and international academia. The academic paper titled "Comprehensive Risk Assessment Study on Hydrogen Fuelled Vehicles Using Tunnels in Hong Kong" was published in the official journal of The Institution of Gas Engineers and Managers "Gas International" on 26 October 2024, and the official journal of the Hong Kong Institution of Engineers "Hong Kong Engineer" on 7 December 2024. The first hydrogen fuel cell ("HFC") double-decker bus in Hong Kong to provide passenger service has already operated on over 90 routes across the city, covering highways and cross-harbour tunnels. Its operation has been smooth.

Formulating the green hydrogen certification framework

11. To help Hong Kong achieve carbon neutrality, our goal is to adopt green hydrogen. There is currently no internationally recognised approach to certify green hydrogen. To help Hong Kong seize the environmental and economic opportunities brought about by the development of hydrogen energy and take the lead in future global hydrogen energy market, the Government will formulate the approach of hydrogen standard certification suitable for Hong Kong's development and circumstances by 2027, with a view to promoting the development of green or low-carbon hydrogen in Hong Kong in the longer run. The Government commenced a dedicated study in August 2024 to benchmark and analyse mainstream green hydrogen certification systems internationally and in the Mainland. The study will propose a preliminary green hydrogen certification framework that is backed by our country's standards, aligned with global practices, and tailored to Hong Kong's actual circumstances. We planned to conduct trade consultation in Q3 2025 to gather feedback for refining the framework. The Government is also collaborating with relevant stakeholders, such as Hong Kong Quality Assurance Agency, to achieve the goal

of establishing the relevant certification system by 2027.

(C) Aligning with the Market

Identifying suitable local hydrogen application scenarios

12. Compared to traditional fuel-propelled vehicles, hydrogen vehicles offer the advantages of zero emissions, high energy efficiency, long driving range and minimal noise, etc. As Hong Kong is a small city geographically and the daily travel distance of most of the vehicles is relatively short, it would be more appropriate to focus on exploring the development of hydrogen heavy-duty vehicles with higher fuel demand and cross-boundary hydrogen passengers and freight vehicles. The Inter-departmental Working Group on Using Hydrogen as Fuel ("the Working Group") established in mid-2022 has been actively promoting trials of hydrogen vehicles. Among them, the trial of the HFC double-decker bus and its hydrogen refuelling facility commenced in November 2023. The HFC double-deck bus started the passenger service officially in February 2024, and the trial of the hydrogen fuelled light rail vehicle was completed in late 2024. The three HFC street washing vehicles of the Food and Environmental Hygiene Department are expected to commence trial in the first half of 2025. More trial projects of hydrogen vehicles are expected to commence progressively, including HFC minibuses, coaches and goods vehicles, etc., with four of these trials belonging to cross-boundary vehicle projects.

13. Moreover, hydrogen energy is suitable for application in areas such as mobile machinery, including vehicles at construction sites. The construction industry in Hong Kong has already started to explore the feasibility of distributed electricity supply using hydrogen to replace traditional diesel generators to supply electricity to offices and machinery at construction sites in remote areas without access to adequate electricity supply, including large-scale construction sites in new development areas. The first trial project in Hong Kong using hydrogen to supply power to construction site facilities was officially launched in February 2025 for the construction project of Hong Kong-Shenzhen Innovation and Technology Park.

Establishing public hydrogen filling facilities

14. To support the future development of hydrogen energy application, we will establish public hydrogen filling infrastructure to cover the Hong Kong Island, Kowloon, and the New Territories by 2027. Currently, the Yuen Long

Au Tau Public Hydrogen Filling Station ("HFS") in the New Territories was completed in November 2024. Testing and commissioning of its hydrogen filling equipment was successfully completed on 20 March 2025. It is expected to commence full operation in the first half of 2025 to support hydrogen transport demonstration projects from more sectors.

15. As for hydrogen filling facilities in Hong Kong Island and Kowloon, the Government has identified a few potential sites. We will carefully evaluate each location by considering multiple factors, including geographical position, safety risk assessment, land use planning, and market demand. The findings of these studies will, as with that of the Yuen Long Au Tau Public HFS, be submitted to the Working Group to review and consider granting agreement-in-principle for the relevant trial projects.

Supporting Research and Development ("R&D") of Hydrogen Technology

16. Technological development as well as on-site trials play a pivotal role in the local development of hydrogen application. The Government has been providing policy and financial support through, for instance, the Green Tech Fund ("GTF") and the New Energy Transport Fund ("NETF") to incentivise research institutions to conduct R&D projects. In particular, the GTF encourages and supports decarbonisation and green technologies projects with potential for application and commercialisation. It has approved a total of 33 R&D projects, of which nine (eight from universities and one from a private enterprise) involve R&D of hydrogen energy technologies, including hydrogen production, storage and hydrogen fuel cell development, etc. We have shared the R&D outcomes of three completed projects on the website of GTF. The R&D teams of some of the projects are also exploring further application and commercialisation of the R&D outcomes in tandem with the development of the hydrogen supply chain industry. One of the projects completed by a local university research team has successfully developed a catalytic device that can efficiently convert solid hydrogen storage materials into hydrogen gas, for enhancing safety and reducing the cost of hydrogen storage and transportation. The team has shared relevant R&D outcomes with the public at the Eco Expo Asia in October 2024.

17. To promote the green transformation of transport, the Chief Executive's 2024 Policy Address announced the earmarking of funds under the NETF to launch the Subsidy Scheme for Trials of HFC Heavy Vehicles. The Funding Scheme was open for application in December 2024 to subsidise local companies to try out HFC heavy vehicles, including the procurement of HFC

heavy vehicles, the establishment of hydrogen filling facility and the expenses on hydrogen fuel during the project period. Funding for each project is capped at HK$10 million.

18. The Construction Innovation and Technology Fund ("CITF") under the Construction Industry Council ("CIC") has been encouraging wider adoption of innovative construction methods and new technologies in the construction industry with a view to promoting productivity, uplifting built quality, improving site safety and enhancing environmental performance. To drive hydrogen trial applications at construction sites by the construction industry, the Government has been maintaining close communication with CIC. The Electrical and Mechanical Services Department ("EMSD") has participated in CIC's feasibility study on construction site electrification and the adoption of clean energy, providing professional input on hydrogen applications. Furthermore, CIC is exploring the installation of hydrogen-powered generators at its Zero Carbon Park to demonstrate the benefits and feasibility of hydrogen energy for the construction industry. EMSD is also actively supporting this initiative.

Hydrogen supply

19. Given Hong Kong's limited natural resources for renewable energy (such as solar and wind power), the cost-effectiveness of producing green hydrogen locally with traditional renewable energy is limited. The Government is committed to exploring collaboration with the GBA hydrogen supply network to strengthen the overall stability and competitiveness of the supply chain. In this regard, EMSD has been maintaining good communication with Mainland hydrogen suppliers to ensure sufficient supply of hydrogen to meet Hong Kong's future demand.

20. Despite Hong Kong's limited potential for renewable energy development, the Government has been proactively exploring the feasibility of producing green hydrogen locally through innovative technologies, in an attempt to participate in the green hydrogen market through scientific research and innovation in a forward-looking manner. Among these efforts, the hydrogen production trial project using landfill gas at the South East New Territories Landfill Extension was given agreement-in-principle by the Working Group in March 2024 and is expected to commence operation in the second half of 2025. The hydrogen production trial project using solar energy at the restored Pillar Point Valley Landfill in Tuen Mun was given agreement-in-principle by the Working Group in November 2024 and is expected to begin

operation in mid-2026.

Capacity building

21. The Government has been actively promoting STEAM education, which includes advancing sustainability education both inside and outside the classroom. The Education Bureau ("EDB"), in collaboration with The Chinese University of Hong Kong, has developed a STEAM hydrogen-powered vehicle teaching kit, allowing students to experience the hydrogen production process and better understand the use of hydrogen energy as a driving force for electric vehicles. On 22 February 2025, EEB, EDB, EMSD, CIC, and professional organisations and experts from various sectors jointly organised the large-scale event "Hydrogen Zero-Carbon STEAM Carnival & HydroRace Challenge 2025 Kick-off Ceremony", to encourage teachers and students to apply their acquired knowledge and skills in real-life scenarios. EDB and EMSD will continue to strengthen collaboration in developing more teaching materials on hydrogen as fuel, in order to enhance the knowledge base of teachers and students.

22. The Government has been actively promoting the training of professionals in hydrogen energy technology to support local hydrogen industry development and prepare for regulation of hydrogen energy in future. With the Government's support, the Vocational Training Council ("VTC") has signed memoranda of cooperation with a standard and testing institution and a manufacturer of hydrogen fuel systems respectively in June 2024, and is preparing to launch a series of hydrogen safety training courses for trade practitioners. The courses will be divided into three categories:

(a) The first category focuses on enhancing trade practitioners' safety awareness of hydrogen energy. With EMSD's support, VTC has launched the training course "Certificate in Safety Awareness for Hydrogen Fuel Application" [1] which will start providing training in mid-2025;

(b) The second category provides professional training for persons who would like to get registered as "hydrogen vehicle mechanics". Training is planned to start within 2025; and

[1] Certificate in Safety Awareness for Hydrogen Fuel Application https://cpe.vtc.edu.hk/en/admission/programmes/%E6%B0%AB%E7%87%83%E6%96%99%E6%87%89%E7%94%A8%E5%AE%89%E5%85%A8%E8%AA%8D%E7%9F%A5%E8%AD%89%E6%9B%B8/EG423729Q/1

(c) The third category is the training targeted at "competent persons" who will provide professional services for the construction, installation, operation and maintenance of hydrogen installations. Training is planned to start in 2026.

23. In addition, VTC will upgrade its facilities at the Jockey Club Heavy Vehicle Emissions Testing and Research Centre at its Hong Kong Institute of Vocational Education (Tsing Yi) to support training programmes for hydrogen vehicle mechanics and competent persons.

Publicity and promotion

24. With the distinctive advantages of enjoying strong support of the motherland and being closely connected to the world under "One Country, Two Systems", Hong Kong is able to participate directly in the vast Mainland market while maintaining global connectivity to serve as a vital bridge between China and the international community. The Hydrogen Strategy emphasises leveraging Hong Kong's roles as a "super connector" and "super value-adder" to promote hydrogen energy development opportunities to potential enterprises and talents both overseas and in the Mainland. The Government has been actively seizing various opportunities to promote our local hydrogen energy industry internationally, with particular focus on promoting business partnerships, technological exchanges, and trade opportunities, with a view to establishing Hong Kong as the demonstration base for hydrogen technologies.

25. Amongst these activities, EMSD organised the first International Hydrogen Development Symposium 2025 on 13 and 14 March 2025 at Hong Kong Science Park. The event was co-organised by the China Hydrogen Alliance ("CHA"). The symposium was one of the Mega Events, with the participation of 27 supporting organisations and more than 70 speakers. It attracted over 800 representatives from local, Mainland and overseas government departments, public organisations, professional institutions, and academia, and provided an interactive exchange platform for the trade to share their latest technology, engineering solutions and views on the future of the hydrogen industry. EMSD is actively making preparations for the International Hydrogen Development Symposium 2026 to be held in May next year.

26. EMSD also collaborated with CHA to co-organise the China International Hydrogen Congress 2025 in Beijing from 26 to 28 March 2025. During the congress, EMSD jointly set up a Hong Kong exhibition booth

with the Hong Kong and China Gas Company Limited (Towngas) and the China Inspection Company Limited to showcase the progress of green hydrogen development in Hong Kong. The Director of Electrical and Mechanical Services delivered a keynote speech on 26 March 2025 and participated in an interview with China Central Television on 27 March 2025.

27. The 2024 Eco Expo Asia held from 30 October to 2 November 2024 once again featured the Hydrogen Economy Forum following its inclusion in the previous edition, enabling international delegations and industry professionals to jointly explore strategies for seizing the environmental and economic opportunities presented by the global development of hydrogen energy. The 2025 Eco Expo Asia will continue to feature key topics including hydrogen energy development.

28. EEB has all along been working closely with Invest Hong Kong (InvestHK) to actively facilitate the development of green technology enterprises in Hong Kong and assist them in grasping the business opportunities in the local hydrogen industry. At the 2024 Eco Expo Asia held in late 2024, InvestHK organised a thematic networking event that brought together 50 green tech enterprises from the Mainland and overseas to foster industry connections and collaboration opportunities. In addition, InvestHK participated in a briefing session for the GTF in February 2025 to share with the enterprises Hong Kong's supportive policies, business advantages, and innovation and technology infrastructure to help them capitalise on green development opportunities in both Hong Kong and the GBA. At the International Hydrogen Development Symposium 2025 held in March 2025, InvestHK also actively supported hydrogen-related enterprises in establishing and expanding their operations in Hong Kong by showcasing Hong Kong's pivotal role as a bridge between the Mainland and global markets, as well as the opportunities arising from the promotion of new energy.

29. Regarding public education, the Government continues to promote hydrogen development to the public through various outreach activities, including stakeholder engagement, student education programmes, social media promotion campaigns, exhibitions, and publication of technical articles. A summary of EMSD's publicity and public education activities up to March 2025 is provided in **Annex I**.

Leveraging our international financial centre status to attract capital to the hydrogen economy

30. Hong Kong is actively strengthening its position as an international green financial centre. Green finance plays a key role in taking Hong Kong towards carbon neutrality by facilitating capital flows towards projects that promote low-carbon transition.

31. To enable informed decision making on green and sustainable finance and facilitate relevant finance flows, the Hong Kong Monetary Authority (HKMA) published in May 2024 the Hong Kong Taxonomy for Sustainable Finance (Hong Kong Taxonomy) to provide clearer definitions of green economic activities and enhance interoperability. The Hong Kong Taxonomy also aligns with the Common Ground Taxonomy, China's Green Bond Endorsed Projects Catalogue and the European Union's Taxonomy for Sustainable Activities.

32. In the current phase, the Hong Kong Taxonomy encompasses 12 economic activities under four sectors, namely power generation, transportation, construction, and water and waste management. Under the transportation sector, the sale, purchase, financing, leasing, and operation of vehicles solely powered by hydrogen are classified as green economic activities. The Hong Kong Taxonomy is a living document. EEB will continue to work closely with the HKMA to explore ways to further develop the Hong Kong Taxonomy to cover more hydrogen-related economic activities.

(D) Advancing with Prudence

<u>Facilitating Technology Exchange and Knowledge Sharing with the Mainland</u>

33. Our country's hydrogen technologies and applications are developing rapidly. Foundation for major technologies and production processes in the areas of production, storage, transportation, refuelling, fuel cells and system integration has been established, with some even in the lead. Therefore, the Government has maintained close communication with relevant Mainland authorities to facilitate technical exchanges and knowledge sharing on hydrogen energy development.

34. Currently, the primary application scenarios for hydrogen energy in Hong Kong are predominantly in land transport. The 2025 work plan of the Pearl River Delta Air Quality Management and Monitoring Special Panel under the Hong Kong-Guangdong Joint Working Group on Environmental Protection and Combating Climate Change covers the demonstration projects of cross-boundary delivery vehicles transiting into HFC vehicles. We will make good

use of this platform to take forward the trials as appropriate.

35. EMSD and the State Administration for Market Regulation signed the Memorandum of Cooperation ("MoC") on 18 December 2024 for establishing a platform to accelerate the hydrogen development through (i) collaborative alignment with national and international hydrogen standards; (ii) cross-boundary data sharing and mutual recognition of hydrogen pressure vessel approvals; and (iii) formulation of a green hydrogen certification framework suitable for Hong Kong, and even Mainland China and the world, bridging regional and global practices.

36. EMSD had been working with the General Administration of Customs of the People's Republic of China ("GACC") for (i) establishing the "Green Corridor" for the transport of hydrogen samples from Hong Kong to the Mainland for the hydrogen quality testing and certification; and (ii) simplifying customs clearance arrangements for hydrogen conveyance vehicles to facilitate the cross-boundary transportation of hydrogen from the Mainland to Hong Kong. Under the MoC between the GACC and EMSD, an annual meeting between both sides was held in November 2024, at which the GACC expressed their full support for the above arrangement.

37. The Foshan Municipality in GBA is actively developing Hydrogen Valley to advance its hydrogen energy industry. To strengthen cross-boundary collaboration, EEB, EMSD, the Guangdong Provincial Development and Reform Commission, and the Foshan Municipal Government have agreed to sign a memorandum to establish a collaborative framework. This partnership aims to jointly seize hydrogen energy development opportunities, enhance competitive advantages, and promote green and low-carbon transformation of the energy system.

<u>Establishing a demonstration base for hydrogen technologies</u>

38. Hong Kong faces significant constraints in developing into a major hydrogen production base or manufacturing hydrogen-powered products (such as hydrogen fuel cell vehicles or non-road mobile machinery systems) due to its land shortage and high population density. Moreover, as hydrogen technology and markets are still at the early stage of development with a number of technological and commercial challenges, it is still uncertain if the cost of hydrogen will become competitive in the international markets. In this context, the Hydrogen Strategy proposed launching trial projects across all four key segments of the hydrogen industry chain, i.e. production, storage, transportation,

and utilisation, in a proactive and orderly manner, having regard to the supply of hydrogen energy, the foundation of the industry, room for market development and the level of technological innovation. The purpose is to promote Hong Kong as a demonstration base for hydrogen technologies while laying a holistic foundation for the city's future hydrogen industry development. As the market of blue and green hydrogen gradually matures, we will facilitate the transition from grey hydrogen to blue and green hydrogen.

39. Since its establishment in mid-2022, the Working Group has been promoting local hydrogen application through trial projects. To date, the Working Group has held seven meetings, and reviewed and given agreement-in-principle to 26 hydrogen energy trial project applications. These projects cover hydrogen production, hydrogen transport, HFSs, hydrogen-fuelled vehicles, and other hydrogen application. Details are set out at **Annex II**.

Expanding the functions and membership of the Working Group

40. To implement the actions and measures set out in the Hydrogen Strategy, the roles and functions of the Working Group were expanded in November 2024 to facilitate the effective implementation of the measures set out in the Hydrogen Strategy, including (i) continuing to review and approve trial projects; (ii) co-ordinating the development and continuous enhancement of the relevant technical standards and guidelines for hydrogen application under different scenarios having regard to the local context; (iii) advising on the pathway for wider application and commercialisation of hydrogen energy trial projects; (iv) providing support for local infrastructure development and manpower training for hydrogen application; (v) assisting in the promotion of the popularisation of hydrogen application; and (vi) regularly reviewing progress of implementing the Hydrogen Strategy. In addition, the Labour Department has accepted the invitation to join the Working Group to facilitate assessment of trial applications involving hydrogen-powered mobile machinery.

WAY FORWARD

41. Moving forward, EEB will continue to implement the strategies and actions outlined in the Hydrogen Strategy. The progress would be subject to multiple factors including changes in market conditions, development of hydrogen-related technologies and its price competitiveness compared to other new energy sources. Hence, to achieve our vision and to move with the times, EEB will adopt a pragmatic approach by regularly reviewing the

implementation progress of the Hydrogen Strategy through the Working Group to ensure timely response to the future needs of our society.

42. We will continue to support local R&D innovation in hydrogen technologies through initiatives such as the GTF, while leveraging the Working Group and the policies relevant to the NETF and CITF to facilitate more trial projects. This could foster collaboration among academia, environmental groups, and businesses to ensure steady growth of Hong Kong's hydrogen industry.

43. With the rapid developments in hydrogen markets and technologies, we will actively explore partnerships with Mainland enterprises and institutions, capitalising on our country's robust hydrogen industry foundation to seize innovation opportunities. Moreover, in support of our country's policy directive to build a clean and low-carbon energy system, we will strengthen cooperation with the Guangdong Province to jointly develop the GBA Hydrogen Corridor in order to seize the environmental and economic opportunities brought about by hydrogen development in the area, for the purposes of broadening our co-operation with the GBA and even the world, and integrating into the country's overall development.

ADVICE SOUGHT

44. Members are invited to note EEB's strategies and work under the Hydrogen Strategy, as well as the progress made in implementing the major policy initiatives. Members are invited to offer comments on the paper.

Environment and Ecology Bureau
Electrical and Mechanical Services Department
May 2025

Annex I

List of Publicity and Public Education Activities conducted by EMSD

Date	Event
Sharing with stakeholders and students	
10 December 2024	Briefing for secondary school science (Physics) teachers on hydrogen fuel safety, with a site visit to Au Tau HFS
22 January 2025	Sharing on hydrogen strategy and opportunity at the Forum on "Centre of Advanced Power and Autonomous Systems (APAS) x The Society of Automotive Engineers (SAE) - The Future of Transportation"
7 February 2025	Sharing at EDB's Webinar for Achieving Carbon Neutrality Student Ambassador Training Scheme (with 100 students and teachers)
17 February 2025	Sharing on hydrogen development to teachers at EDB's activities (with 80 teachers)
27 February 2025	Sharing on hydrogen strategy and opportunity at the International Conference on Roadmap to Net Zero organised by Energy Institute (Hong Kong Branch)
29 March 2025 and 12 April 2025	Sharing with the senior secondary science students on hydrogen development, with the support of the Department of Mechanical Engineering of The University of Hong Kong (HKU), at HKU Campus
Publication of technical articles and promotion on social media platforms	
13 March 2025	At the invitation of Radio Television Hong Kong (RTHK), EEB and EMSD participated in filming an episode of Hong Kong Connection (鏗鏘集) with the theme on "氫能運輸之路".
Showcasing and Exhibition	

22 and 23 February 2025	Showcased hydrogen development with the public at Hydrogen Zero Carbon STEAM Carnival at the CIC's Zero Carbon Park
13-15 March 2025	Showcased latest technologies and trade engagement at the International Hydrogen Development Symposium 2025
15 March 2025	Youth engagement at the HydroRace Challenge 2025
19 March 2025	Energy Advisory Committee's visit to Au Tau HFS
26-28 March 2025	EMSD co-organised with CHA the China International Hydrogen Congress 2025 held in Beijing

Annex II

Trial Projects Assessed and Given Agreement-in-Principle by the Working Group (As at May 2025)

No.	Applicant	Trial Projects
1.	Citybus Limited	A hydrogen refuelling facility at its West Kowloon Depot
2.	Sinopec (Hong Kong) Limited	A public hydrogen refuelling station at Au Tau, Yuen Long
3.	Hong Kong and China Gas Company	A hydrogen extraction facility at its Tai Po Plant
4.	Citybus Limited	One hydrogen fuel cell double-deck bus
5.	Linde HKO Limited	Use of a hydrogen tube trailer to deliver hydrogen to a hydrogen fuelled light rail vehicle
6.	MTR Corporation Limited	A hydrogen fuelled light rail vehicle in Tuen Mun as a non-revenue train
7.	Citybus Limited	Five hydrogen fuel cell double-deck buses and a hydrogen refuelling facility at its bus depot in Chai Wan
8.	China State Construction Engineering (Hong Kong) Limited, Hong Kong Nation-Synergy International Hydrogen Power Technology Co., Limited, and Sinopec (Hong Kong) Limited	Providing electricity for a site office at a construction site in Lok Ma Chau with hydrogen fuel

9.	Hong Kong and China Gas Company Limited and Hong Kong Padel Academy Limited	Extracting hydrogen from the existing towngas network at a suitable site in Sai Kung to generate electricity for charging electric vehicles
10.	Epro Advance Technology Limited	Use of silicon to produce hydrogen for power generation set to provide electricity at a public housing construction site in Tung Chung
11.	Waihong Environmental Services Limited	Two hydrogen fuel cell refuse collection vehicles
12.	Food and Environmental Hygiene Department	Three hydrogen fuel cell street washing vehicles
13.	China State Construction Engineering (Hong Kong) Limited, Hong Kong Nation-Synergy International Hydrogen Power Technology Co., Limited, and Sinopec (Hong Kong) Limited	Provision of electricity with hydrogen power generation equipment for the operation of electric machinery at a construction site in Sheung Shui
14.	Veolia Hong Kong Holding Limited	Production of hydrogen by using landfill gas and installation of related hydrogen refuelling facilities at the South East New Territories Landfill Extension
15.	China State Construction Engineering (Hong Kong) Limited, Hong Kong Nation-Synergy International Hydrogen Power Technology Co., Limited, and Sinopec (Hong Kong) Limited	A 19-seater hydrogen fuel cell (HFC) minibus and a 55-seater HFC coach for providing shuttle service commuting the construction site for workers, and three HFC forklifts to be used at the construction site

16.	Kingroad Logistics Limited, Allenbus Automotive Technology Co. Limited and Hong Kong Hydrogen Fuel Cell Company Limited	A hydrogen fuel cell medium goods vehicle for cross-boundary transport
17.	Sinopec (Hong Kong) Limited	A hydrogen fuel cell light goods vehicle for local transport at its oil terminal in Tsing Yi
18.	Sinopec (Hong Kong) Limited	Production of hydrogen with solar energy at the restored Pillar Point Valley Landfill in Tuen Mun
19.	International New Energy Industry Alliance Limited, Wing Tat Cargo&Trading (HK) Limited, H2 Powertrains Limited and Ontime International L ogistics (HK) Co., Limited	Ten hydrogen fuel cell (HFC) goods vehicles for cross-boundary transport
20.	Wilson Logistics Limited	Two HFC goods vehicles for cross-boundary transport
21.	Kam Wai Tourist Bus (HK) Company Limited	Two HFC coaches for local passenger services
22.	China Travel Tours Transportation Services HK Ltd., Allenbus Automotive Technology Co., Limited and REFIRE Hong Kong Limited	Two HFC coaches for cross-boundary passenger services
23.	The Hong Kong and China Gas Company Limited and CIMC Enric Hong Kong Limited	Provision of electricity with hydrogen power generation equipment for charging electric vehicles at a commercial building in North Point

24.	The Hong Kong and China Gas Company Limited and Hong Kong Housing Society	Extracting hydrogen from the existing towngas network at a construction site in Sau Kei Wan to generate electricity for charging electric vehicles and providing electricity for site office
25.	Affluent Coach Services Company Limited	Two HFC coaches for local passenger services
26.	The Hong Kong and China Gas Company Limited and Hong Kong Science and Technology Parks Corporation	Extracting hydrogen from the existing towngas network at Hong Kong Science Park to generate electricity for charging electric vehicles