

**For discussion on  
20 January 2025**

**LEGISLATIVE COUNCIL  
PANEL ON ENVIRONMENTAL AFFAIRS**

**PROPOSED AMENDMENTS TO  
THE GAS SAFETY ORDINANCE  
FOR THE REGULATION OF HYDROGEN AS FUEL**

**PURPOSE**

This paper briefs Members on the proposed amendments to the Gas Safety Ordinance (Cap. 51) and invites Members' views.

**BACKGROUND**

2. In June 2024, the Government briefed Members on the Strategy of Hydrogen Development in Hong Kong ("the Strategy") promulgated in the same month. The Strategy sets 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 development of hydrogen energy in different parts of the world, our country in particular. It also aims to help Hong Kong enhance co-operation with the Guangdong-Hong Kong-Macao Greater Bay Area and the world, integrate into the country's overall development, and develop new quality productive forces. According to the Strategy, the Government will introduce legislative amendments to provide a legal basis for regulating the manufacture, storage, transport, supply and use of hydrogen used or intended to be used as fuel. The Chief Executive also announced in the Policy Address 2024 to introduce a bill into the Legislation Council within 2025 for regulating hydrogen used or intended to be used as fuel.

3. Hydrogen is highly energy-efficient and less polluting. It can be used as a fuel for transportation, mobile machinery and power generation facilities, etc. Due to its potential in promoting low-carbon green transition, hydrogen energy is gaining traction internationally, and would be an important component of the national energy system in the future. In Hong Kong, hydrogen is currently categorised as a Class 2 dangerous goods and regulated under the Dangerous Goods Ordinance (Cap. 295) similar to other compressed gases. However, the existing Dangerous Goods Ordinance only covers the storage of hydrogen for general use. There is no comprehensive and holistic legislation to regulate the potential safety risks associated with the use of hydrogen as fuel, including gas quality, safety of installations and facilities, personnel and emergency handling, etc.

4. To help Hong Kong seize the environmental and economic opportunities arising from hydrogen development, the Environment and Ecology Bureau set up the Inter-departmental Working Group on Using Hydrogen as Fuel (“the Working Group”) in 2022 to provide technical advice for the launching of hydrogen applications, and examine individual hydrogen energy trial applications before the relevant regulatory measures are in place. Trial projects that have been given agreement-in-principle by the Working Group include hydrogen fuel cell (“HFC”) double-deck buses, refuse collection vehicles and street washing vehicles, hydrogen filling facilities, electricity generation at construction sites, and transformation of landfill gas into hydrogen energy, etc., to prepare for the future popularisation of hydrogen energy in Hong Kong. With the commencement of more hydrogen fuel projects, we need to provide an appropriate regulatory regime for the manufacture, storage, transport, supply and use of hydrogen used or intended to be used as fuel as soon as possible, in order to create an environment conducive to the local hydrogen development in the longer run.

#### Amendments to the Gas Safety Ordinance (Cap. 51)

5. Comprehensive legislation, i.e. the Gas Safety Ordinance (Cap. 51) (“the Ordinance”), has already been implemented in Hong Kong to control, in the interests of ensuring public safety, the importation, manufacture, storage, transport, supply and use of gas (including town gas, natural gas

and liquefied petroleum gas (“LPG”)), and to provide for matters incidental thereto or connected therewith. The Director of Electrical and Mechanical Services has been appointed as the Gas Authority, with the principal function to promote and provide for the implementation of safe working practices in relation to the importation, manufacture, storage, transport, supply and use of gas. The Ordinance stipulates that only registered gas supply companies can carry on business of imports, manufactures and supplies of any gas. In addition to approving applications from the gas supply companies in accordance with the Ordinance and its subsidiary legislation, the Gas Authority is also responsible for recording, maintaining and administering the registration list of Registration of Gas Installers and Gas Contractors, monitoring their performance in line with safety standards and taking disciplinary action when necessary. The Gas Authority will also monitor, inspect and approve the construction and operation of new and existing LPG installations and storage facilities as stipulated by the regulations. It gives approval to vehicles that transport LPG, and oversee and regulate the operation of natural gas supply facilities and pipelines, gas production facilities, storage systems, and the entire network for transmission and sales across the region.

6. The Ordinance provides for comprehensive provisions, including the making of regulations by the Chief Executive in Council in relation to any matters relevant to the importation, manufacture, storage, transport, supply and use of gas, the empowerment of the Gas Authority to approve and issue Codes of Practice for the purpose of providing practical guidance in respect of any requirements under the Ordinance, as well as the appointment of inspectors. The Ordinance also specifies the formation of an appeal board panel and the handling of appeals against a decision or action taken by the Gas Authority.

7. The nature and the supply chain of hydrogen as fuel are very similar to those of other gases regulated under the Ordinance. Given the proven track record of regulating the safety of various gases in Hong Kong under the Ordinance, we propose amending the Ordinance to establish a suitable legislative framework to regulate the importation, manufacture, storage, transport, supply and use of hydrogen as fuel in Hong Kong comprehensively and effectively.

## **PROPOSED AMENDMENTS**

8. We propose making two major amendments to the Ordinance: (i) to include hydrogen as fuel in the regulatory framework under the Ordinance; and (ii) to add provisions to allow the introduction of new subsidiary legislation.

### **Inclusion of Hydrogen as Fuel in the Regulatory Framework**

9. Major proposed amendments to the Ordinance include:
- i. amending the definition of “gas” under the Ordinance to include hydrogen as fuel, with a view to bringing it under the regulatory framework. Hydrogen as fuel refers to any gas that is primarily hydrogen to be used or intended to be used as fuel for (1) the propulsion of a vehicle or train; or (2) the operation of machinery, etc.;
  - ii. amending certain existing provisions in the Ordinance for application to hydrogen as fuel and its related areas. This includes making regulations and Codes of Practice concerning the importation, manufacture, storage, transport, supply, and use of hydrogen as fuel, incorporating hydrogen as fuel into the jurisdiction of the Gas Authority, such as the power of entry to associated premises and issuance of improvement notice, and including hydrogen as fuel in the areas of responsibility of the Gas Safety Advisory Committee and the Appeal Board; and
  - iii. amending the Ordinance to empower the Chief Executive in Council to make regulations in relation to the safety of hydrogen as fuel. The new subsidiary legislation will be subject to negative vetting by the Legislative Council (“LegCo”).

## New Subsidiary Legislation

10. The hydrogen energy market and its technological advancement are experiencing rapid development. The new subsidiary legislation provides more flexibility for updates in tandem with the latest market and technology development. The proposed new subsidiary legislation will cover the entire supply chain of hydrogen as fuel. Major areas to be covered include:

### *Hydrogen Quality*

11. With a view to ensuring the quality of hydrogen supplied or used, the proposed new subsidiary legislation will include regulations on hydrogen quality, similar to Cap. 51A of the Ordinance governing the gas quality of LPG, town gas and natural gas.

### *Registration of Hydrogen Supply Company*

12. Under the regulatory framework of Cap. 51E of the Ordinance, a registered gas supply company is required to ensure, in carrying on its business as a gas supply company, its employee's health and safety at work, and to conduct its operations in a safe manner so that members of the public are not exposed to undue risks from gas. We propose to adopt a similar approach to that of Cap. 51E of the Ordinance. The proposed new subsidiary legislation will stipulate that hydrogen supply companies upstream in the supply chain must register and establish general self-regulatory responsibilities in order to carry on hydrogen supply business.

### *Construction and Use of Hydrogen Installation*

13. Relevant regulations will be made to define "Hydrogen Installation". Similar to the approach under Cap. 51B of the Ordinance, the construction and the use of hydrogen installations would require approval from the Gas Authority.

### *Type Approval of Hydrogen Container*

14. Hydrogen container is the pressure receptacle that is intended or

designed to use in containing hydrogen or connecting to a facility for the withdrawal of hydrogen through hydrogen pipes. Similar to the regulation of LPG containers under Cap. 51B of the Ordinance, hydrogen containers must be given written approval from the Gas Authority, or belong to the types approved by the Gas Authority, before being used for the transfer or storage of hydrogen as fuel.

#### *Use of Hydrogen System*

15. Hydrogen system is an assembly of hydrogen components and fuel systems that include hydrogen containers, HFCs or other hydrogen fuelled systems, etc., on vehicles or in mobile power generation facilities at construction sites. The use of hydrogen in hydrogen systems requires approval from the Gas Authority.

#### *Permit for Hydrogen Conveyance Vehicle*

16. Permit from the Gas Authority must be obtained before hydrogen conveyance vehicles (such as hydrogen tube trailers) may transport hydrogen as fuel. The regulatory requirements will be formulated with reference to the existing provisions governing LPG road tankers or cylinder wagons under Cap. 51B of the Ordinance.

#### *Registration of Hydrogen Vehicle Mechanics*

17. It is proposed to require individuals responsible for tasks related to fabrication, connection, disconnection, testing, commissioning, decommissioning, maintenance, repair, or replacement of any components of hydrogen systems on hydrogen vehicles to be registered before carrying out relevant works.

18. As hydrogen is currently classified as a dangerous goods regulated by the Dangerous Goods Ordinance, we have communicated and agreed with the Security Bureau and the Fire Services Department the scope of the Ordinance after amendment. The amended Ordinance will regulate the safety of hydrogen as fuel, while other forms of hydrogen will continue to be regulated as dangerous goods under the Dangerous Goods Ordinance. To avoid double regulation, consequential amendments will be made to the Dangerous Goods Ordinance to exempt hydrogen as fuel from its

regulation. The amendments to both ordinances will take effect simultaneously to ensure a seamless transition.

## **TRADE CONSULTATION**

19. To prepare for the relevant legislative amendments, the Electrical and Mechanical Services Department (“EMSD”) consulted the trades from 20 February to 19 March 2024, during which briefing sessions and focus group meetings had been held. About 230 survey responses were collected from representatives of hydrogen energy trade, vehicle maintenance trade and various professional bodies. The consultation outcome indicates that the trade strongly supports the relevant legislative amendments for providing an appropriate legal framework and enhancing public confidence in hydrogen safety, which is an important element for the successful promotion of hydrogen development in Hong Kong. EMSD has also conducted a study on the proposed amendments’ impact on the business environment, and the results indicate that the proposals would have a positive impact on the business environment.

## **WAY FORWARD**

20. We have commenced law drafting and aim to introduce an amendment bill to the LegCo in Q2 2025. Subject to the passage of the amendment bill, we will introduce the proposed subsidiary legislation as mentioned in paragraphs 10 to 17 to LegCo for negative vetting.

## **ADVICE SOUGHT**

21. Members are invited to note the above proposals and offer views on the proposed amendments to the Ordinance.

**Environment and Ecology Bureau**  
**Electrical and Mechanical Services Department**  
**January 2025**