

**For Discussion
On 3 November 2020**

Legislative Council Panel on Security

Proposal to revamp the Dangerous Goods (General) Regulations (Cap. 295B) and to amend the Dangerous Goods (Application and Exemption) Regulation 2012 (Cap. 295E)

Purpose

This paper briefs Members on the proposal to revamp the Dangerous Goods (General) Regulations (DG(G)R) (Cap. 295B) and to amend the Dangerous Goods (Application and Exemption) Regulation 2012 (DG(A&E)R 2012) (Cap. 295E) under the Dangerous Goods Ordinance (DGO) (Cap. 295). The relevant proposal seeks to -

- (a) update the existing regulatory system of dangerous goods (DG) by aligning it with international standards;
- (b) enhance the safety of manufacture, conveyance, storage and use of DG; and
- (c) facilitate the operations of the trade and the daily use of DG by the public without compromising safety.

Background

2. DGO and its subsidiary legislation¹ provide for the control on the

¹ There are four pieces of subsidiary legislation under DGO which are currently in operation –

- (a) **Dangerous Goods (Application and Exemption) Regulations (Cap. 295A)**, which set out the list of DG to which DGO shall apply and the classification of DG (to be repealed after the **DG(A&E)R 2012 (Cap. 295E)** comes into operation in due course);
- (b) **Dangerous Goods (General) Regulations (Cap. 295B)**, which set out the licensing regime for the manufacture, storage, conveyance and use of DG, as well as requirements for the packing, marking and labelling of DG, etc.;
- (c) **Dangerous Goods (Shipping) Regulations (Cap. 295C)**, which set out the

manufacture, storage, conveyance and use of DG. When DGO was enacted in 1956, there were no harmonized systems governing the classification, transportation, labelling and packaging of DG internationally. Thereafter, an expert committee under the United Nations Economic and Social Council has developed an international system for relevant international organizations to formulate international codes on the classification and transportation of DG which are applicable to different situations. Our major trading partners (such as Australia, the European Union, the Mainland and the United States) have made reference to these codes and gradually amended their regulatory systems on DG to align with the international codes. Although DGO has been updated since its enactment, the regulatory system in Hong Kong has yet to be aligned with the commonly adopted international standards. As a result, the trade in Hong Kong is often required to comply with two distinct sets of requirements prevailing locally and overseas. There is a need to align the domestic regulatory system with the commonly adopted international system. As most DG in Hong Kong are imported and exported by sea, it is the view of the Government that the local regulatory system should follow the International Maritime Dangerous Goods (IMDG) Code, published by the International Maritime Organization on the control of transporting DG as far as possible.

Steps for Legislative Amendments

3. To update the regulatory system of DG with a view to aligning it with the international standards, we have reviewed the DGO and its subsidiary legislation and made legislative amendments by phases -

- (i) In 2002, the Dangerous Goods (Amendment) Bill 2000 was passed by the Legislative Council to provide the legal framework for the amendment to the regulatory system of DG;

control over the conveyance of DG in Hong Kong waters (to be repealed after the **Dangerous Goods (Shipping) Regulation 2012 (Cap. 295F)** comes into operation in due course); and

- (d) **Dangerous Goods (Government Explosives Depots) Regulations (Cap. 295D)**, which set out the control over Government Explosives Depots.

The Fire Services Department is the regulatory authority for all categories of DG on land, except gases under the Gas Safety Ordinance (Cap. 51), which is controlled by the Electrical and Mechanical Services Department, and Category 1 (explosives), which is regulated by the Civil Engineering and Development Department. The Marine Department is the regulatory authority for DG at sea and cargo terminals.

- (ii) In 2012², the DG(A&E)R 2012 and the Dangerous Goods (Shipping) Regulation 2012 were enacted to specify the types and quantities of DG to be controlled on land, and the control over conveyance of DG at sea respectively³;
- (iii) In the current phase, a new subsidiary legislation will be introduced to replace the existing DG(G)R, and DG(A&E)R 2012 will be further amended. See paragraphs 4 to 5 and Appendices I and II for details;
- (iv) The next step is to introduce consequential amendments to other ordinances and subsidiary legislation. As various ordinances and subsidiary legislation involving different regulatory authorities have made reference to the classification and exempt quantity, etc. of DG under DGO, we need to make technical consequential amendments⁴ to these ordinances and subsidiary

² See the press release issued by the Security Bureau on 25 April 2012 for details (<https://www.info.gov.hk/gia/general/201204/25/P201204250421.htm>).

³ DG(A&E)R 2012 mainly updates the list of DG to which DGO applies for aligning with the classification system of the IMDG Code; updates the maximum quantity of each type of DG for which a licence is not required for the storage, use and conveyance (i.e. “exempt quantity”); and provides for the exemption from the licensing requirement for certain types of DG commonly used by the general public if they are in the form of specified consumer packs. The regulation will repeal and replace the existing Dangerous Goods (Application and Exemption) Regulations.

Dangerous Goods (Shipping) Regulations 2012 mainly updates the control over conveyance of DG in Hong Kong waters to better align it with commonly adopted international practice (including classification of DG conveyed in Hong Kong waters; codifies existing administrative measures; and updates control and precautionary measures for handling or conveying DG on vessels). The regulation will repeal and replace the existing Dangerous Goods (Shipping) Regulations.

⁴ For instance, the Western Harbour Crossing Bylaw (Cap. 436D) stipulates that “The driver or owner of a vehicle carrying any of the goods specified in Category 1 of the Schedule to the Dangerous Goods (Application and Exemption) Regulations (Cap. 295 sub. leg. A) shall not cause or permit the vehicle to enter or remain in the tunnel area.”; Schedule 2 to the Factories and Industrial Undertakings Ordinance (Cap. 59) stipulates that “Any industrial undertaking involving the use of any dangerous goods specified in Category 5 in the Schedule to the Dangerous Goods (Application and Exemption) Regulations (Cap. 295 sub. leg. A) and for which a licence is required under the Dangerous Goods Ordinance (Cap. 295).”; the Radiation (Control of Radioactive Substances) Regulations (Cap. 303A) stipulates that “No person shall convey, or cause or permit to be conveyed, any goods classified in the Dangerous Goods (Application and Exemption) Regulations (Cap. 295 sub. leg. A) as being dangerous goods in the same vehicle as that in

legislation upon completion of legislative amendments work in phases (i) to (iii) above, so as to avoid contradictions and inconsistencies between legal provisions when implementing the new regulatory system; and

- (v) As a last step, the Secretary for Security will appoint an effective date by notice in the Gazette. To ensure that there would not be inconsistencies when implementing the new regulatory system under DGO or contradictions between legal provisions, the Secretary for Security will appoint an effective date after the completion of the legislative amendments mentioned above, for all the provisions to come into operation on the same day.

We are proceeding with phase (iii) of the legislative amendment process mentioned above.

Dangerous Goods (General) Regulation 2021 (DG(G)R 2021)

4. The DG(G)R sets out in detail the licensing regime for the manufacture, storage, conveyance and use of DG as well as requirements for the packing, marking and labelling (PML) of DG. The proposed DG(G)R 2021 will replace DG(G)R so as to align the existing regulatory system with international standards, and at the same time enhance the safety of manufacture, conveyance, storage and use of DG, while facilitating the operations of the trade and the daily use of DG by the public. Moreover, instead of adopting an approach based on the categories of DG (as that under DG(G)R currently), the structure of the DG(G)R will also be revamped such that it will be based on the functional aspects of the regulatory system (e.g. manufacture, storage and use of DG; conveyance of DG; PML requirements for DG, etc.), so as to minimise the repetition of provisions that are applicable to different classes of DG and the legislation (in a consolidated form) may be simpler and more user-friendly. Key points of the legislative amendment proposal are at **Annex I**.

Dangerous Goods (Application and Exemption) Regulation 2012 (Amendment) Regulation 2021 (DG(A&E)R 2012 (A)R 2021)

5. DG(A&E)R 2012 sets out the list of DG to which DGO shall apply and the classification of these DG. As stated in paragraph 3(ii)

which any radioactive substance is conveyed unless such dangerous goods are themselves radioactive substances.”, etc.

above, the regulation was passed in 2012 and updates are now required due to technological developments and regular amendments to the IMDG Code since its passage. Apart from enhancing the safety of the manufacture, conveyance, storage and use of DG, the relevant proposed amendments will facilitate the operations of the trade and the daily use of DG by the public, as well as further aligning the existing regulatory system with the latest international standards. Key points of the legislative amendment proposal are at **Annex II**.

Public Consultation

6. The Government has conducted public consultations and consulted the relevant trades on the proposed amendments, and they are generally supportive of the proposal. For DG under the regulatory control of the Director of Fire Services⁵, the Fire Services Department (FSD) has consulted the Dangerous Goods Standing Committee⁶ in June 2017 and conducted 16 briefing sessions on the proposed amendments (eight open to different trades and eight for specific industries) in June to November 2017, attended by around 1 500 different stakeholders, including the Chemical Safety and Health Advisory Committee of the Occupational Safety and Health Council, the Wholesale and Retail Task Force of the Business Facilitation Advisory Committee (WRTF), the Tertiary Institutions Safety Advisory Group, DG licensees as well as relevant practitioners of DG trades. Moreover, a consultation paper was issued by FSD in September 2017 for public information and inviting comments on the proposed amendments. Thereafter, during the drafting process of the subsidiary legislation from 2018 to the present, FSD has maintained continual engagement with relevant stakeholders, including the Dangerous Goods Standing Committee, Oil Industry Liaison Group, the Chemical Safety and Health Advisory Committee of the Occupational Safety and Health Council and various Trade Liaison Groups, etc. In addition, FSD conducted 6 additional briefing sessions⁷ to different stakeholders with over 1 300 attendees in June and July 2020, and an

⁵ FSD is the regulatory authority of various categories of DG on land, except gases under the Gas Safety Ordinance (Cap. 51), which is controlled by the Electrical and Mechanical Services Department.

⁶ The Dangerous Goods Standing Committee is chaired by the Assistant Director (Licensing and Certification) of FSD, with non-official members representing the Federation of Hong Kong Industries, chemical, shipping, petroleum and godown interests. The Committee advises the Government on matters relating to the classification, storage, manufacture, use, packing and marking standard, etc. of DG.

⁷ Including a webinar.

information paper was circulated to the WRTF in July 2020, for providing updates on the latest progress of the legislative amendment exercise. For DG under the regulatory control of the Commissioner of Mines⁸, the Civil Engineering and Development Department consulted relevant stakeholders from 16 September to 25 October 2019, including members of the Dangerous Goods Standing Committee and Consultative Group on Blasting Regulation⁹, shot firers, explosives suppliers and explosives store owners. A consultation paper was also issued at the same time for inviting comments from the public on the proposed amendments. In a nutshell, the trades and the public generally support the relevant proposals and expect the amendment proposals can be passed as soon as possible.

Way Forward

7. We plan to table DG(G)R 2021 and DG(A&E)R 2012 (A)R 2021 at the Legislative Council for negative vetting in the first quarter of 2021 to complete the current phase mentioned in paragraph 3(iii) above. Thereafter, we will proceed with the next phase (as mentioned in paragraph 3(iv) above), namely the consequential amendments to other ordinances and subsidiary legislation (e.g. provisions relating to the classification of DG in other ordinances and subsidiary legislation). Finetunings to the Dangerous Goods (Amendment) Ordinance 2002 (Amendment Ordinance) are also required¹⁰. We will introduce the relevant Bill to the Legislative Council at the appropriate juncture.

8. After completing the legislation amendment exercise mentioned above, the Amendment Ordinance, the relevant subsidiary legislation and other legislation will come into operation on a day to be appointed by the Secretary for Security by notice in the Gazette. To ensure a smooth

⁸ Category 1 DG (explosives) is regulated by the Civil Engineering and Development Department.

⁹ The Consultative Group on Blasting Regulation is chaired by the Deputy Head/Geotechnical Engineering Office (Mainland) of the Civil Engineering and Development Department, with non-official members representing local professional organizations and practitioners of blasting and explosives (e.g. Hong Kong Institution of Engineers, Hong Kong Construction Association, Hong Kong Society of Blasting Engineering and Explosives Technology, etc.). The Group collects feedback from the industry on regulatory procedures and practices relating to the use, conveyance and storage of explosives and blasting.

¹⁰ Required finetunings to the Amendment Ordinance include repealing the stipulations that require the forms of licences to be provided for by regulation made by the Chief Executive in Council, so that the licensing authorities could amend the forms of licences for administrative convenience.

transition from the extant regulations to the new regulations, a grace period of 24 months will be given for the trades and the public to adapt to the new regulations. During the grace period, regulatory authorities will maintain close liaison with stakeholders to facilitate their compliance with the new regulations.

Security Bureau
Fire Services Department
Civil Engineering and Development Department

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**Dangerous Goods (General) Regulation 2021
Key Points of the Legislative Amendment Proposal**

(i) To update the existing regulatory system of dangerous goods (DG) by aligning it with international standards

The key changes include the following:

- (a) to convert the existing local classification of DG from 10 categories to 9 classes to align with the International Maritime Dangerous Goods (IMDG) classification system. A comparison of the proposed and existing classification systems of DG is set out at **Appendix A**;
- (b) to remove the existing packing, marking and labelling (PML) requirements of DG and introduce new PML requirements to align with the IMDG Code. In gist, the “UN number”, the “Proper shipping name or true name” and the relevant label(s) shall be clearly marked on the outermost packaging. If the DG are packed, marked and labelled in accordance with the IMDG Code, except otherwise specified, the DG will be deemed as having complied with the PML requirements of the new regulation; and
- (c) to provide for the issue of the codes of practices by the Director of Fire Services to cover technical details (e.g. safety requirements on mixed storage of DG and detailed standards on the testing of pressure receptacles, etc.), so as to provide practical guidelines to local trades and the public to facilitate their compliance with the new legal requirements, as well as to facilitate timely updates of detailed requirements by the Government to keep up with the times.

(ii) To enhance the safety of manufacture, conveyance, storage and use of DG

2. Key changes include the following:

- (a) to enhance the licensing regime on regulating the storage and use of DG by introducing a “store and use licence” as well as additional licensing conditions for the enhancement of safety;
- (b) to step up the control on conveyance of DG (e.g. requiring the display of the vehicle identification disc on the windscreen of all

licensed DG vehicles or at a conspicuous position of the vehicle if the vehicle has no windscreen, authorizing the relevant authority to request licensed vehicles for conveying DG to undergo examination to ensure the DG vehicles comply with safety requirements, tightening the restrictions on conveyance of explosives on public transport carriers¹ to enhance public safety, etc.);

- (c) to update the levels of penalty for offences² under the Dangerous Goods (General) Regulations (DG(G)R) in order to preserve the necessary deterrent effect (the general framework on the increase in maximum penalty is set out in **Appendix B**); and
- (d) to extend regulatory regime currently applicable to certain category of DG to other classes of DG (e.g. extending the prohibition on the use of defective tanks for storing Category 5 DG (i.e. substances giving off inflammable vapour) to those for storing other classes of DG; extending the prohibition on smoking at certain categories of DG stores to stores for other classes of DG) to enhance safety on the manufacture, storage and use of DG.

(iii) To facilitate the operations of the trade and the daily use of DG by the public

3. Under the Dangerous Goods (General) Regulation 2021 (DG(G)R 2021), obsolete requirements in the existing DG(G)R will be removed or updated to facilitate the operations of the trade and the daily use of DG by the public. For instance, updating the provisions on the use of detonating fuses (as they are no longer used in blasting operations), and in view of technological developments, updating provisions on the specifications of DG stores and PML requirements, etc.

4. To ensure a smooth transition from the extant DG(G)R to the new DG(G)R 2021, a grace period of 24 months will be given for the trade and the public to adapt to the new regulation.

¹ Under regulation 7 of the extant Dangerous Goods (General) Regulations, manufactured fireworks in any quantity not exceeding 5 kg, safety cartridges and cartridges for small arms are allowed to be carried in public vehicles or ferries. It is proposed that to enhance public safety, the conveyance of such items in public transport carriers should no longer be allowed in the new regulation.

² Reference is made to Schedule 8 of the Criminal Procedure Ordinance (Cap. 221).

Appendix A

Comparison of the Proposed and Existing Classification Systems under the Dangerous Goods Ordinance (the Ordinance)

Properties	Examples	Proposed Classification¹	Existing Classification under the Ordinance
Explosives	(i) Detonator and cast booster (ii) Ammunition (iii) Firework	Class 1 ²	Category 1
Life-saving devices containing small amounts of explosives	(i) Air bag inflators, air bag modules, seat-belt pretensioners (ii) Aircraft survival kits	Special Class 9	Category 1
Flammable gases ³	(i) Hydrogen (ii) Ethylene (iii) Acetylene used in welding processes	Class 2.1	Category 2
Non-flammable, non-toxic gases	(i) Oxygen (ii) Nitrogen (iii) Compressed Air used in diving cylinders	Class 2.2	
Toxic gases ³	(i) Chlorine (ii) Anhydrous Ammonia (iii) Carbon Monoxide used for metallurgy	Class 2.3	

¹ The proposed classification is modeled on the classification under the International Maritime Dangerous Goods Code based on the hazard nature of dangerous goods.

² Class 1 dangerous goods are grouped under seven local Groups depending on chemical composition (Groups 1 to 5) and functionality (Groups 6 and 7). In the proposed classification scheme, there will be a Group 8 explosives which are not Class 1 dangerous goods but have the functionality of being used in blasting operations to break rock or concrete etc.

³ Flammable toxic gases comes under “Toxic gases”.

Properties	Examples	Proposed Classification¹	Existing Classification under the Ordinance
Flammable liquids having a flash point below 23°C (73°F) closed cup test [^]	(i) Carbon Disulfide (ii) Acetone (iii) Alcohol used in hand sanitizers	Class 3	Category 5 Class 1*
Flammable liquids having a flash point of 23°C (73°F) up to and including 60°C (140°F) closed cup test [^]	(i) Naphtha (ii) Ethylbenzene (iii) Paints and Turpentine used for decoration		Category 5 Class 2*
Flammable liquids having a flash point exceeding 60°C (140°F) closed cup test [^]	(i) Diesel Oil (ii) Furnace Oil (iii) Fuel Oil used as vehicle fuels	Class 3A	Category 5 Class 3*
Flammable solids	(i) Naphthalene (ii) Hexamine used as fuel tablets	Class 4.1	Category 8
Substances liable to spontaneous combustion	(i) Yellow Phosphorus (ii) Sodium Dithionite used in industrial dyeing processes	Class 4.2	Category 9
Substances which, in contact with water, emit flammable gases	(i) Potassium (ii) Sodium used as a chemical raw material	Class 4.3	Category 6
Oxidizing substances	(i) Sodium Nitrate (ii) Hydrogen peroxide used in hair bleach	Class 5.1	Category 7
Organic peroxides	(i) Organic Peroxide in polyester resin kit (ii) Peroxide-based hardeners for fibre glass	Class 5.2	Category 10

Properties	Examples	Proposed Classification¹	Existing Classification under the Ordinance
Toxic substances	(i) Arsenic Bromide (ii) Chloroform (iii) Hydrogen Cyanide used as rat poison	Class 6.1	Category 4
Corrosives substances	(i) Alkalis such as sodium or potassium hydroxide (ii) Acids such as nitric or hydrochloric acid, sulphuric acid used for pipe cleaner	Class 8	Category 3
Miscellaneous dangerous substances and materials #	Dibromodifluoromethane used as fire extinguishing agents	Class 9	-
Combustible goods exempted from Section 6 to 11 of the Ordinance	(i) Polyethylene (raw material) (ii) Rubber tyres of vehicle	Class 9A	Category 9A

Legend:

- ^ “Closed Cup Test” means a testing method according to commonly adopted international standards, where a closed receptacle apparatus is utilized to determine the flash point of a flammable liquid.
- * The generic definitions of the existing Class 1, Class 2 and Class 3 in Category 5 are as follows :-
Class 1: Substances giving off inflammable vapour having a flash point below 23°C
Class 2: Substances giving off inflammable vapour having a flash point of or exceeding 23°C but not exceeding 66°C
Class 3: Substances giving off inflammable vapour having a flash point exceeding 66°C (diesel oils, furnace oils and other fuel oils only).
- # Most of the dangerous goods in the proposed Class 9 are currently not covered under the Ordinance.

Appendix B

Comparison of levels of maximum penalty under the existing Dangerous Goods (General) Regulations (Cap. 295B) and the proposed Dangerous Goods (General) Regulation (DG(G)R) 2021

Original Fine under Cap.295B	Proposed Fine under the new DG(G)R¹
\$1,000	Level 2 (currently at \$5,000)
\$2,000	Level 3 (currently at \$10,000)
\$5,000	Level 4 (currently at \$25,000)
\$10,000	Level 5 (currently at \$50,000)
\$25,000	Level 6 (currently at \$100,000)

Remark : The maximum imprisonment sentence will remain unchanged.

¹ Reference is made to Schedule 8 of the Criminal Procedure Ordinance (Cap. 221).

**Dangerous Goods (Application and Exemption) Regulation 2012
(Amendment) Regulation 2021**

Key Points of the Legislative Amendment Proposal

(i) To further update the existing regulatory system of dangerous goods (DG) by aligning it with the latest international standards

Key amendments include the following:

- (a) to introduce technical updates since the passage of the Dangerous Goods (Application and Exemption) Regulation 2012 (DG(A&E)R 2012) due to technological developments and regular amendments to the International Maritime Dangerous Goods (IMDG) Code¹ (e.g. updating the lists of Schedule 1 DG, Schedule 2 DG and prohibited goods, etc.) in order to align with the latest international standards; and
- (b) to introduce the concept of “limited quantity”² by making reference to IMDG Code and international standards, and exempt certain marking and labelling requirements for DG packed in small packaging to facilitate the alignment of the local requirements with international practices.

(ii) To enhance the safety of manufacture, conveyance, storage and use of DG

2. The amendment Regulation will introduce the concept of “packing group”³ from the IMDG Code, which indicates the degree of hazard of DG. Moreover, the “exempt quantities”⁴ will be revised by

¹ The IMDG Code is updated every two years. The last update was made in 2018.

² “Limited quantity” is a concept used in the IMDG Code to indicate the size of a package that is small enough to be exempted from the packing, marking and labelling requirements. A new column specifying the “limited quantity” of various DG will be added in the DG list under Schedule 2 to Dangerous Goods (Application and Exemption) Regulation 2012 (Amendment) Regulation 2021 (DG(A&E)R 2012 (A)R 2021).

³ “Packing group” is a concept used in the IMDG Code to indicate the degree of hazard of DG. There are 3 “packing groups” (i.e. PG I, PG II and PG III, with PG I representing the highest level of hazard). The “packing group” of DG will be shown in the DG list under Schedule 2 of DG(A&E)R 2012 (A)R 2021.

⁴ “Exempt quantity” refers to the specified maximum quantity of DG under which a licence for storage, use or conveyance is not required.

making reference to the respective degree of hazard identified by the “packing group”, thereby enhancing the safety of the manufacture, conveyance, storage and use of DG through a risk-based approach.

(iii) To facilitate the public and the trade in the daily use of DG

3. By taking local context and international standards into consideration, certain exemptions will be introduced to facilitate the daily use of DG by the public without compromising safety, including:

- (a) exemption of the conveyance of special Class 9 DG (e.g. life-saving appliances such as air bag modules for vehicles) from the licensing requirement if the DG’s packing, marking and labelling comply with the relevant requirements set out in the IMDG Code; and
- (b) exemption from the regulatory control under the Dangerous Goods Ordinance of certain DG when they are contained in items commonly found in daily use by members of the public (including medicines, pesticides, food, plants or animals, inflated tyres, inflated balls or balloons intended to be use for educational, recreational or other similar purposes, and lighting devices such as light bulbs, fluorescent tubes, halogen tubes, etc.).