

LEGISLATIVE COUNCIL BRIEF

Air Pollution Control Ordinance (Cap. 311)

Air Pollution Control (Non-road Mobile Machinery) (Emission) (Amendment) Regulation 2018

INTRODUCTION

The Secretary for the Environment has made, under section 43 of the Air Pollution Control Ordinance (Cap. 311), the Air Pollution Control (Non-road Mobile Machinery) (Emission) (Amendment) Regulation 2018 (Amendment Regulation), at **Annex A**, to tighten in phases the emission standards for the newly approved “non-road vehicles”.

JUSTIFICATIONS

2. To improve air quality and protect public health, the Government implemented the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation (the Regulation) on 1 June 2015 to control emissions from non-road mobile machinery (NRMM) (including “non-road vehicles”¹ and “regulated machines”²).

3. According to the Regulation, owners of NRMMs supplied for local use must submit applications and relevant documents to the Environmental Protection Department (EPD) for approval, proving that

¹ “Non-road vehicles” means any vehicle powered by an internal combustion engine (including goods vehicle, bus, light bus, private car, motor cycle, motor tricycle or special purpose vehicle) that are not licensed under the Road Traffic (Registration and Licensing of Vehicles) Regulations (Cap 374 sub. leg. E), and are used only in specified locations (including airport restricted areas, container terminals and backup facilities, construction sites, designated waste disposal facilities, etc.). Special purpose vehicle means any motor vehicle designed, constructed or adapted primarily for a use other than the carriage of goods, the driver or passengers, such as forklifts, pump trucks and crane trucks, etc.

² Regulated machine means any mobile machine or transportable industrial equipment (other than a vehicle of a class specified in Schedule 1 to the Road Traffic Ordinance (Cap. 374)) that is powered by an internal combustion engine with a rated engine power output that is greater than 19kW but not greater than 560kW.

the emissions of the NRMM comply with the prescribed emission standards. At present, the statutory emission standards³ for "non-road vehicles" are mainly Euro V standards (or their equivalent standards), and the statutory emission standards for "regulated machines" are EU Stage IIIA standards (or their equivalent standards). When an NRMM is used in specified locations (including airport restricted areas, container terminals and backup facilities, construction sites, designated waste disposal facilities, etc.), a valid approval label issued by EPD must be affixed to it. In 2016, NRMMs emitted 5,448 tonnes of nitrogen oxides (NOx) and 416 tonnes of respirable suspended particulates (RSP), accounting for about 6% and 10% of total emissions respectively in Hong Kong⁴.

NON-ROAD VEHICLES

4. For “non-road vehicles”, it is the Government’s standing policy to adopt the same prescribed emission standards for road vehicles as far as practicable, so as to prevent the transfer of old road vehicles, which are no longer road worthy, into non-road applications. Therefore, the prevailing emission standards for all “non-road vehicles” under the Regulation were the same as those stipulated under the Air Pollution Control (Vehicle Design Standards) (Emission) Regulations (Cap. 311J) when the Regulation was enacted in 2015.

5. The Legislative Council approved the amendment to the Air Pollution Control (Vehicle Design Standards) (Emission) Regulations (Cap. 311J) on 13 April 2017. The emission standards for newly registered road vehicles have been progressively tightened since 1 July 2017 (see Table 1).

³ In respect of "non-road vehicles", the emission standards for goods vehicles, buses, light buses and petrol private cars are Euro V; diesel private cars California emission standard LEV II; motor cycles and motor tricycles Euro III; and special purpose vehicles smoke emission standard.

⁴ The above figures are based on the 2016 Hong Kong air pollutant emission inventory published by EPD in April 2018. The 2017 emission inventory is under preparation. EPD estimated the amount of air pollutant emissions based on the total fuel consumption of NRMM provided by the Census and Statistics Department and the relevant trades. Many of these NRMMs are operated in construction sites in which only the total fuel consumption is available without any breakdown for “non-road vehicles” and “regulated machines”. Therefore, there is no breakdown of the emissions of air pollutants from "non-road vehicles" and "regulated machine".

Table 1: Implementation timetable of emission standards⁵ for newly registered road vehicles

Vehicle Class	Commencement Date	
	<i>Euro 6b On Board Diagnostic (OBD) Euro 6-1⁶</i>	<i>Euro 6c OBD Euro 6-2⁷</i>
Private Car (petrol) and Taxi	1 July 2017	1 September 2019
Light bus and Goods Vehicle (both of design weight not more than 3.5 tonnes)	1 January 2018	1 September 2020
	<i>Euro VI OBD Phase A/B⁶</i>	<i>Euro VI OBD Phase C⁷</i>
Bus (design weight more than 9 tonnes) and Goods Vehicle (design weight more than 3.5 tonnes)	1 October 2018	1 April 2019
	<i>California LEV III</i>	
Diesel private cars	1 October 2017	

6. In light of the above tightening of the emission standards for newly registered road vehicles, the Amendment Regulation seeks to tighten the emission standards of the same class of “non-road vehicles” in line with the latest emission standards for road vehicles. Compared with their Euro V counterparts, Euro VI heavy duty diesel vehicles emit about 80% less nitrogen oxides (NOx) and 50% less respirable suspended particulates (RSP), while Euro VI light duty diesel vehicles

⁵ There is no change to the smoke emission standard which applies to special purpose vehicles. For buses with a design weight of not more than 9 tonnes and light buses with a design weight of more than 3.5 tonnes, Euro V emission standards will continue to apply to these vehicles as there is yet to have adequate supply of Euro VI models in the local market.

⁶ The initial phase of the tightening involves the introduction of more stringent emission standards in the certification emission test as well as other requirements such as new testing procedures for heavy duty vehicles, more comprehensive checking on emissions by the On Board Diagnostic (OBD) system, etc.

⁷ The subsequent phases mainly involve tightening the requirements for the OBD system in stages.

emit about 55% less NO_x⁸.

7. By end July 2018, there were about 2 700 "non-road vehicles" belonging to the classes in Table 1 (i.e. buses, goods vehicles, light buses and private cars which are the targets of the Amendment Regulation) in Hong Kong. About 80% of them (about 2 150) are goods vehicles mainly operating in the airport and container terminals, while the remaining ones are mostly petrol private cars, diesel buses and diesel light buses. EPD processes about 150 new applications for approval of the relevant "non-road vehicles" annually.

AMENDMENT REGULATION

8. The Amendment Regulation requires "non-road vehicles" newly supplied for local use to comply with the tightened emission standards according to the following implementation timetable.

Table 2: Proposed timetable for tightening emission standards for newly approved "non-road vehicles"

Vehicle Class	Prevailing Emission Standard	Proposed Emission Standards and Implementation Timetable	
		<i>Euro 6b OBD Euro 6-1</i>	<i>Euro 6c OBD Euro 6-2</i>
Private Car (petrol)	Euro V	1 January 2019	1 September 2019
Light bus and Goods Vehicle (design weight not more than 3.5 tonnes)	Euro V	1 January 2019	1 September 2020

⁸ The RSP emission standards of Euro VI light duty diesel vehicles are the same as Euro V counterparts.

		<i>Euro VI OBD Phase A/B</i>	<i>Euro VI OBD Phase C</i>
Bus (design weight more than 9 tonnes) and Goods Vehicle (design weight more than 3.5 tonnes)	Euro V	1 January 2019	1 April 2019
Diesel private car	California LEV II	<i>California LEV III</i> 1 January 2019	

9. In tightening the emission standards for “non-road vehicles”, we will maintain the current practice of accepting emission standards of other places that are not inferior to the Euro VI requirements, including the Japan and US standards.

10. For those relevant “non-road vehicles” that arrive in Hong Kong and meet the prevailing emission standards before the commencement of the Amendment Regulation, the owner of the “non-road vehicle” must submit an application for approval to EPD before the commencement of the Amendment Regulation.

LEGISLATIVE TIMETABLE

11. We will publish the Amendment Regulation in the Gazette on 19 October 2018 and table it at the Legislative Council for negative vetting on 24 October 2018. Subject to the approval by the Legislative Council, the Amendment Regulation will take effect in phases starting from 1 January 2019.

IMPLICATIONS

Environmental Implications

12. Although the number of applications for approval for relevant

“non-road vehicles” is only over a hundred per year and hence the emission reduction due to the tightening of the emission standards is not significant, there is a need to align the emission standards for "non-road vehicles" with those for road vehicles, so as to prevent old road vehicles which are no longer suitable for road use from being converted into non-road applications. The Amendment Regulation can gradually reduce the emissions from “non-road vehicles”, which will help improve the air quality in the vicinity of the airport, container terminals and construction sites.

Other Implications

13. The Amendment Regulation is in conformity with the Basic Law, including the provisions concerning human rights, and will not affect the current binding effect of the Regulation. EPD will use existing resources to cope with the additional workload arising from the implementation of the Amendment Regulation. The proposed amendments are conducive to sustainable development, which is to promote and protect the public health and thereby enhancing the quality of living environment. The Amendment Regulation has no significant economic implications and no gender or family implications.

CONSULTATION

14. We conducted a briefing session in September 2017 to introduce the details of the proposed amendment and consult the relevant NRMM stakeholders on our proposal, including vehicle suppliers⁹, regulated machine suppliers, Hong Kong Construction Association, and operators in the airport and container terminals. The vehicle suppliers confirmed that “non-road vehicles” meeting the relevant emission standards can be supplied to the market in accordance with our proposed timetable for tightening the emission standards. To comply with the more stringent Euro VI emission standards on RSP, Euro VI diesel vehicles must be equipped with diesel particulate filter (DPF)¹⁰. During the consultation,

⁹ The Hong Kong Motor Traders Association (MTA), whose members are local representatives of major motor vehicle manufacturers, was consulted.

¹⁰ Diesel particulate filter is a device to capture RSP generated from fuel combustion inside the

an airport operator raised concern about the regeneration process¹¹ of the DPF. After EPD has liaised with the relevant vehicle supplier and requested the vehicle manufacturer to improve the regeneration process of DPF, the airport operator did not object to the tightening of emission standards for “non-road vehicles”. The airport operator would adjust its working schedule (such as conducting the regeneration process regularly) to adapt to the operation of Euro VI vehicles. Other operators in general were supportive of the proposed amendment.

15. We consulted the Advisory Council on the Environment (ACE) and the Panel on Environmental Affairs of the Legislative Council for the proposed amendment on 5 March and 26 March 2018 respectively. They supported the proposal.

PUBLICITY

16. We will issue a press release when the Amendment Regulation is published in the Gazette and inform the relevant trades accordingly.

ENQUIRIES

17. For any enquiries, please contact Mr. Dave HO, Assistant Director of Environmental Protection (Air Policy) at 2594 6310.

Environmental Protection Department
October 2018

engine. Collected RSP will be oxidized and removed from the filter.

¹¹ Under normal road applications, the temperature of engine exhaust gas passing through the DPF should be high enough to burn off the trapped RSP. However, when operating at slow speed or idling for a prolonged period, the temperature of engine exhaust gas may not be high enough to burn off the trapped RSP. The operator must manually initiate the regeneration process to remove the RSP collected by the DPF.

Air Pollution Control (Non-road Mobile Machinery) (Emission) (Amendment)
Regulation 2018

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**Air Pollution Control (Non-road Mobile Machinery)
(Emission) (Amendment) Regulation 2018**

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Air Pollution Control (Non-road Mobile Machinery) (Emission) (Amendment)
Regulation 2018

Section 1

1

**Air Pollution Control (Non-road Mobile Machinery)
(Emission) (Amendment) Regulation 2018**

(Made by the Secretary for the Environment under section 43 of the Air
Pollution Control Ordinance (Cap. 311) after consultation with the
Advisory Council on the Environment)

1. Commencement

- (1) Subject to subsections (2), (3) and (4), this Regulation comes into operation on 1 January 2019.
- (2) Section 6(11), (12), (13), (14) and (27) comes into operation on 1 April 2019.
- (3) Section 6(4), (5) and (6) comes into operation on 1 September 2019.
- (4) Section 6(7), (8), (9), (10), (15), (16), (17), (18), (26) and (28) comes into operation on 1 September 2020.

2. Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation amended

The Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation (Cap. 311 sub. leg. Z) is amended as set out in sections 3 to 6.

3. Section 14 amended (Authority may permit modification of approved or exempted non-road mobile machinery)

Section 14(1)(a)—

Repeal

“approval was given”

Substitute

“application for the approval was made”.

4. **Section 15 amended (application for modification of non-road mobile machinery)**

Section 15(2)(f)—

Repeal

“approval was given”

Substitute

“application for the approval was made”.

5. **Section 19 added**

After section 18—

Add

“19. Transitional provision relating to Air Pollution Control (Non-road Mobile Machinery) (Emission) (Amendment) Regulation 2018

- (1) If an application for approval under section 7(2) made in respect of a non-road vehicle is pending when the prescribed emission standard applicable to the vehicle is amended by the Amendment Regulation, the standard as in force immediately before the amendment continues to apply in relation to the application and the vehicle as if the standard had not been so amended.

- (2) In this section—

Amendment Regulation (《修訂規例》) means the Air Pollution Control (Non-road Mobile Machinery) (Emission) (Amendment) Regulation 2018.”.

6. **Schedule 1 amended (emission standards)**

- (1) Schedule 1, Part 1, section 1—

Add in alphabetical order

“**design weight** (設計重量), in relation to a particular motor vehicle, means the maximum design loaded vehicle weight recommended by its manufacturer for motor vehicles of the same class or description as the particular vehicle;

direct-injection type (直噴型), in relation to an engine, means a type of engine in which the fuel is injected directly into the combustion space above the piston crown;

indirect-injection type (非直噴型), in relation to an engine, means a type of engine in which the fuel is not injected directly into the combustion space above the piston crown;”.

- (2) Schedule 1, Part 4, section 1—

Repeal

“in column 4”

Substitute

“in column 2”.

- (3) Schedule 1, Part 4, section 1—

Repeal the Table

Substitute

“Table A

Column 1	Column 2
Vehicle	Provisions in which emission standard is specified
1. Private car— (a) that is equipped with a positive-ignition engine of indirect-injection type; and (b) the design weight of which does not exceed 3 tonnes.	Section 3(1), (3) or (4) of this Part
2. Private car— (a) that is equipped with a positive-ignition engine of direct-injection type; and (b) the design weight of which does not exceed 3 tonnes.	Sections 3(1), (3) or (4) and 4(1) of this Part
3. Private car— (a) that is equipped with a compression-ignition engine; and (b) the design weight of which does not exceed 3 tonnes.	Sections 3(3) and 4(2) of this Part
4. Goods vehicle— (a) that is equipped with a positive-ignition engine of indirect-injection type; and (b) the design weight of which does not exceed 3.5 tonnes.	Section 3(1), (3) or (4) of this Part

Column 1	Column 2
Vehicle	Provisions in which emission standard is specified
5. Goods vehicle— (a) that is equipped with a positive-ignition engine of direct-injection type; and (b) the design weight of which does not exceed 3.5 tonnes.	Sections 3(1), (3) or (4) and 4(1) of this Part
6. Goods vehicle— (a) that is equipped with a compression-ignition engine; and (b) the design weight of which does not exceed 3.5 tonnes.	Sections 3(1) or (3) and 4(2) of this Part
7. Goods vehicle— (a) that is equipped with a positive-ignition engine; and (b) the design weight of which exceeds 3.5 tonnes.	Sections 3(5) or (7), 4(4) and 5 of this Part
8. Goods vehicle— (a) that is equipped with a compression-ignition engine; and (b) the design weight of which exceeds 3.5 tonnes.	Sections 3(5) or (7), 4(3) and (4) and 5 of this Part

Column 1	Column 2
Vehicle	Provisions in which emission standard is specified
9. Bus— (a) that is equipped with a positive-ignition engine; and (b) the design weight of which exceeds 3.5 tonnes but does not exceed 9 tonnes.	Section 2(5), (6) or (7) of this Part
10. Bus— (a) that is equipped with a compression-ignition engine; and (b) the design weight of which exceeds 3.5 tonnes but does not exceed 9 tonnes.	Sections 2(1) and 2(5), (6) or (7) of this Part
11. Bus— (a) that is equipped with a positive-ignition engine; and (b) the design weight of which exceeds 9 tonnes.	Sections 3(5) or (7), 4(4) and 5 of this Part
12. Bus— (a) that is equipped with a compression-ignition engine; and (b) the design weight of which exceeds 9 tonnes.	Sections 3(5) or (7), 4(3) and (4) and 5 of this Part

Column 1	Column 2
Vehicle	Provisions in which emission standard is specified
13. Light bus— (a) that is equipped with a positive-ignition engine of indirect-injection type; and (b) the design weight of which does not exceed 3.5 tonnes.	Section 3(1), (3) or (4) of this Part
14. Light bus— (a) that is equipped with a positive-ignition engine of direct-injection type; and (b) the design weight of which does not exceed 3.5 tonnes.	Sections 3(1), (3) or (4) and 4(1) of this Part
15. Light bus— (a) that is equipped with a compression-ignition engine; and (b) the design weight of which does not exceed 3.5 tonnes.	Sections 3(1) or (3) and 4(2) of this Part
16. Light bus— (a) that is equipped with a positive-ignition engine; and (b) the design weight of which exceeds 3.5 tonnes.	Section 2(5), (6) or (7) of this Part

Column 1	Column 2
Vehicle	Provisions in which emission standard is specified
17. Light bus— (a) that is equipped with a compression-ignition engine; and (b) the design weight of which exceeds 3.5 tonnes.	Sections 2(1) and 2(5), (6) or (7) of this Part
18. Motor cycle that is equipped with a positive-ignition engine.	Section 2(8), (9) or (10) of this Part
19. Motor cycle that is equipped with a compression-ignition engine.	Sections 2(1) and 2(8), (9) or (10) of this Part
20. Motor tricycle that is equipped with a positive-ignition engine.	Section 2(11) of this Part
21. Motor tricycle that is equipped with a compression-ignition engine.	Section 2(1) and (11) of this Part
22. Special purpose vehicle that is equipped with a compression-ignition engine.	Section 2(1) of this Part

- (4) Schedule 1, Part 4, section 1, Table A, item 1, column 2—
Repeal
“3(1)”

- Substitute**
“3(2)”.
- (5) Schedule 1, Part 4, section 1, Table A, item 2, column 2—
Repeal
“3(1)”
- Substitute**
“3(2)”.
- (6) Schedule 1, Part 4, section 1, Table A, item 2, column 2—
Repeal
“4(1)”
- Substitute**
“4(2)”.
- (7) Schedule 1, Part 4, section 1, Table A, item 4, column 2—
Repeal
“3(1)”
- Substitute**
“3(2)”.
- (8) Schedule 1, Part 4, section 1, Table A, item 5, column 2—
Repeal
“3(1)”
- Substitute**
“3(2)”.
- (9) Schedule 1, Part 4, section 1, Table A, item 5, column 2—
Repeal
“4(1)”

- Substitute**
“4(2)”.
- (10) Schedule 1, Part 4, section 1, Table A, item 6, column 2—
Repeal
“3(1)”
Substitute
“3(2)”.
- (11) Schedule 1, Part 4, section 1, Table A, item 7, column 2—
Repeal
“3(5)”
Substitute
“3(6)”.
- (12) Schedule 1, Part 4, section 1, Table A, item 8, column 2—
Repeal
“3(5)”
Substitute
“3(6)”.
- (13) Schedule 1, Part 4, section 1, Table A, item 11, column 2—
Repeal
“3(5)”
Substitute
“3(6)”.
- (14) Schedule 1, Part 4, section 1, Table A, item 12, column 2—
Repeal
“3(5)”

- Substitute**
“3(6)”.
- (15) Schedule 1, Part 4, section 1, Table A, item 13, column 2—
Repeal
“3(1)”
Substitute
“3(2)”.
- (16) Schedule 1, Part 4, section 1, Table A, item 14, column 2—
Repeal
“3(1)”
Substitute
“3(2)”.
- (17) Schedule 1, Part 4, section 1, Table A, item 14, column 2—
Repeal
“4(1)”
Substitute
“4(2)”.
- (18) Schedule 1, Part 4, section 1, Table A, item 15, column 2—
Repeal
“3(1)”
Substitute
“3(2)”.
- (19) Schedule 1, Part 4, section 2, heading—
Repeal
“standard”

Substitute

“standards for certain non-road vehicles approved on or after 1 June 2015”.

- (20) Schedule 1, Part 4, section 2—

Repeal subsections (2), (3) and (4).

- (21) Schedule 1, Chinese text, Part 4, section 2(5)—

Repeal

“及旅遊” (wherever appearing).

- (22) Schedule 1, Part 4, section 2(7)(a), after “America”—

Add

“as at 20 March 2012”.

- (23) Schedule 1, Part 4, section 2(7)(b)(i)—

Repeal

“emission standards”

Substitute

“the emission standards, as at 20 March 2012,”.

- (24) Schedule 1, Part 4, section 2(7)(b)(ii)—

Repeal

“emission standards and supplemental requirements”

Substitute

“the emission standards and supplemental requirements, as at 20 March 2012,”.

- (25) Schedule 1, Part 4, after section 2—

Add

“3. Emission standards for certain non-road vehicles approved on or after 1 January 2019

- (1) European Union Motor Vehicle Emission Standards, comprising all of the following—
- (a) all the testing procedures, requirements and emission limits, including those for on-board diagnostic system (except Type VI test), specified in—
 - (i) Regulation (EC) No. 715/2007 of the European Parliament and of the Council; and
 - (ii) Commission Regulation (EC) No. 692/2008 as amended by its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/646;
 - (b) the emission limit values for Type I test specified in Table 2 (Euro 6 Emission Limits) of Annex I to Regulation (EC) No. 715/2007 of the European Parliament and of the Council as amended by Commission Regulation (EC) No. 692/2008 and its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/646;
 - (c) the emission standards and on-board diagnostic system standards specified in Row W, X, Y, ZA, ZB or ZC of Table 1 of Appendix 6 to Annex I to Commission Regulation (EC) No. 692/2008 as amended by its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/646;
 - (d) all the type approval requirements specified in Directive 2007/46/EC of the European Parliament

- and of the Council as amended by its subsequent amendments up to and including amendments made by Regulation (EU) No. 2015/758.
- (2) European Union Motor Vehicle Emission Standards, comprising all of the following—
- (a) all the testing procedures, requirements and emission limits, including those for on-board diagnostic system (except Type VI test), specified in—
- (i) Regulation (EC) No. 715/2007 of the European Parliament and of the Council; and
- (ii) Commission Regulation (EC) No. 692/2008 as amended by its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/646;
- (b) the emission limit values for Type I test specified in Table 2 (Euro 6 Emission Limits) of Annex I to Regulation (EC) No. 715/2007 of the European Parliament and of the Council as amended by Commission Regulation (EC) No. 692/2008 and its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/646;
- (c) the emission standards and on-board diagnostic system standards specified in Row ZD, ZE or ZF of Table 1 of Appendix 6 to Annex I to Commission Regulation (EC) No. 692/2008 as amended by its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/646;

- (d) all the type approval requirements specified in Directive 2007/46/EC of the European Parliament and of the Council as amended by its subsequent amendments up to and including amendments made by Regulation (EU) No. 2015/758.
- (3) United States of America Motor Vehicle Emission Standards, comprising all of the following—
- (a) all the testing procedures, requirements and emission limits, including those for on-board diagnostic system, specified in Title 13 of the California Code of Regulations of the United States of America as at 23 December 2016;
- (b) the emission limit values specified in “LEV III” in section 1961.2 of Article 2 of Chapter 1 of Division 3 of Title 13 of the California Code of Regulations of the United States of America as at 23 December 2016;
- (c) all the type approval requirements administered by the California Air Resources Board.
- (4) Japan Motor Vehicle Emission Standards, comprising all of the following—
- (a) all the testing procedures, requirements and emission limits, including those for on-board diagnostic system, specified in—
- (i) the Safety Regulation for Road Vehicles (i.e. the Ministry of Transport Ordinance No. 67 of 28 July 1951) as amended by its subsequent amendments up to and including amendments made by the Ministry of Land, Infrastructure, Transport and Tourism Ordinance No. 18 of 31 March 2015; and

- (ii) the Announcement that Prescribes Details of Safety Regulations for Road Vehicles (i.e. the Ministry of Land, Infrastructure and Transport Announcement No. 619 of 15 July 2002) as amended by its subsequent amendments up to and including amendments made by the Ministry of Land, Infrastructure, Transport and Tourism Announcement No. 459 of 31 March 2015;
 - (b) the emission limit values specified in Article 41 of the Announcement that Prescribes Details of Safety Regulations for Road Vehicles (i.e. the Ministry of Land, Infrastructure and Transport Announcement No. 619 of 15 July 2002) as amended by its subsequent amendments up to and including amendments made by the Ministry of Land, Infrastructure, Transport and Tourism Announcement No. 459 of 31 March 2015;
 - (c) all the type approval requirements administered by the Ministry of Land, Infrastructure, Transport and Tourism of Japan.
- (5) European Union Motor Vehicle Emission Standards, comprising all of the following—
- (a) all the testing procedures, requirements and emission limits, including those for on-board diagnostic system, specified in—
 - (i) Regulation (EC) No. 595/2009 of the European Parliament and of the Council; and
 - (ii) Commission Regulation (EU) No. 582/2011 as amended by its subsequent amendments up

- to and including amendments made by Commission Regulation (EU) No. 2016/1718;
- (b) the emission limit values of gaseous and particulate pollutants from the engine specified in the Table entitled “Euro VI Emission Limits” of Annex I to Regulation (EC) No. 595/2009 of the European Parliament and of the Council as amended by Commission Regulation (EU) No. 582/2011 and its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/1718;
- (c) the requirements specified in—
 - (i) Row A of Table 1 of Appendix 9 to Annex I to Commission Regulation (EU) No. 582/2011 as amended by its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/1718, for vehicle models equipped with compression-ignition engines; or
 - (ii) Row B of Table 1 of Appendix 9 to Annex I to Commission Regulation (EU) No. 582/2011 as amended by its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/1718, for vehicle models equipped with positive-ignition engines;
- (d) all the type approval requirements specified in Directive 2007/46/EC of the European Parliament and of the Council as amended by its subsequent amendments up to and including amendments made by Regulation (EU) No. 2015/758.

- (6) European Union Motor Vehicle Emission Standards, comprising all of the following—
- (a) all the testing procedures, requirements and emission limits, including those for on-board diagnostic system, specified in—
 - (i) Regulation (EC) No. 595/2009 of the European Parliament and of the Council; and
 - (ii) Commission Regulation (EU) No. 582/2011 as amended by its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/1718;
 - (b) the emission limit values of gaseous and particulate pollutants from the engine specified in the Table entitled “Euro VI Emission Limits” of Annex I to Regulation (EC) No. 595/2009 of the European Parliament and of the Council as amended by Commission Regulation (EU) No. 582/2011 and its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/1718;
 - (c) the requirements specified in Row C of Table 1 of Appendix 9 to Annex I to Commission Regulation (EU) No. 582/2011 as amended by its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/1718;
 - (d) all the type approval requirements specified in Directive 2007/46/EC of the European Parliament and of the Council as amended by its subsequent amendments up to and including amendments made by Regulation (EU) No. 2015/758.

- (7) United States of America Motor Vehicle Emission Standards, comprising all of the following—
- (a) all the testing procedures, requirements and emission limits, including those for on-board diagnostic system for 2017 and later model years, specified in the Code of Federal Regulations Title 40 Protection of Environment Part 86 Control of Emissions from New and In-use Highway Vehicles and Engines of the United States of America including and up to the amendments on 25 October 2016;
 - (b) the emission limit values specified in—
 - (i) section 86.008-10 entitled “Emission standards for 2008 and later model year Otto-cycle heavy-duty engines and vehicles” in the Code of Federal Regulations Title 40 Protection of Environment Part 86 Control of Emissions from New and In-use Highway Vehicles and Engines of the United States of America including and up to the amendments on 25 October 2016, for vehicle models equipped with positive-ignition engines including all the phase-in requirements for 2009; or
 - (ii) section 86.007-11 entitled “Emission standards and supplemental requirements for 2007 and later model year diesel heavy-duty engines and vehicles” in the Code of Federal Regulations Title 40 Protection of Environment Part 86 Control of Emissions from New and In-use Highway Vehicles and Engines of the United States of America

- including and up to the amendments on 25 October 2016, for vehicle models equipped with compression-ignition engines including all the phase-in requirements for 2010;
- (c) all the type approval requirements administered by the United States Environmental Protection Agency.

4. Emission standards for particulate emission from certain non-road vehicles approved on or after 1 January 2019

- (1) Number of particles emitted must not exceed 6×10^{12} per kilometre, as measured by the Type I test procedure specified in—
- (a) Regulation (EC) No. 715/2007 of the European Parliament and of the Council; and
- (b) Commission Regulation (EC) No. 692/2008 as amended by its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/646.
- (2) Number of particles emitted must not exceed 6×10^{11} per kilometre, as measured by the Type I test procedure specified in—
- (a) Regulation (EC) No. 715/2007 of the European Parliament and of the Council; and
- (b) Commission Regulation (EC) No. 692/2008 as amended by its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/646.
- (3) Number of particles emitted must not exceed 8×10^{11} per kilowatt-hour, as measured by the Worldwide

Harmonised Steady State Cycle (WHSC) test procedure specified in—

- (a) Regulation (EC) No. 595/2009 of the European Parliament and of the Council; and
- (b) Commission Regulation (EU) No. 582/2011 as amended by its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/1718.
- (4) Number of particles emitted must not exceed 6×10^{11} per kilowatt-hour, as measured by the Worldwide Harmonised Transient Driving Cycle (WHTC) test procedure specified in—
- (a) Regulation (EC) No. 595/2009 of the European Parliament and of the Council; and
- (b) Commission Regulation (EU) No. 582/2011 as amended by its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/1718.

5. Emission standards: portable emissions measurement system demonstration test at type approval

Portable emissions measurement system demonstration test at type approval specified in Appendix 1 to Annex VI to Commission Regulation (EU) No. 582/2011 as amended by its subsequent amendments up to and including amendments made by Commission Regulation (EU) No. 2016/1718.”.

- (26) Schedule 1, Part 4, section 3—
Repeal subsection (1).
- (27) Schedule 1, Part 4, section 3—
Repeal subsection (5).

- (28) Schedule 1, Part 4, section 4—
Repeal subsection (1).

Secretary for the Environment

2018

Explanatory Note

To reduce emission of air-pollutants from vehicles that are used exclusively in the Restricted Area of the Hong Kong International Airport, construction sites and industrial sites, etc. (*non-road vehicles*), this Regulation amends the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation (Cap. 311 sub. leg. Z) (*principal Regulation*) to impose more stringent emission standards on the following non-road vehicles starting from 1 January 2019—

- (a) private cars;
 - (b) goods vehicles;
 - (c) buses having a design weight that exceeds 9 tonnes;
 - (d) light buses having a design weight that does not exceed 3.5 tonnes.
2. Moreover, the emission standards are to be further tightened for—
- (a) goods vehicles having a design weight that exceeds 3.5 tonnes and buses having a design weight that exceeds 9 tonnes starting from 1 April 2019;
 - (b) private cars that are equipped with positive-ignition engines starting from 1 September 2019; and
 - (c) goods vehicles having a design weight that does not exceed 3.5 tonnes and light buses having a design weight that does not exceed 3.5 tonnes starting from 1 September 2020.
3. The Regulation also makes minor textual amendments to the principal Regulation.