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**No. S 299**

ENVIRONMENTAL PROTECTION AND MANAGEMENT ACT  
(CHAPTER 94A)

ENVIRONMENTAL PROTECTION AND MANAGEMENT  
(OFF-ROAD DIESEL ENGINE EMISSIONS)  
REGULATIONS 2012

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In exercise of the powers conferred by sections 12(5) and 77(1) of the Environmental Protection and Management Act, the National Environment Agency, with the approval of the Minister for the Environment and Water Resources, hereby makes the following Regulations:

PART I  
PRELIMINARY

**Citation and commencement**

1. These Regulations may be cited as the Environmental Protection and Management (Off-Road Diesel Engine Emissions) Regulations 2012 and shall come into operation on 1st July 2012.

**Definitions**

2. In these Regulations, unless the context otherwise requires —

“diesel engine” means an internal combustion engine which operates by burning diesel;

“examiner” means a testing facility accredited by the Singapore Accreditation Council or any of its Mutual Recognition Arrangement partners as being able to perform exhaust emission tests for off-road diesel engines in accordance with ISO 8178 test procedures;

“motor vehicle” has the same meaning as in the Road Traffic Act (Cap. 276);

“off-road diesel engine” means a diesel engine except —

(a) a diesel engine that propels an aircraft, a railway locomotive or a vessel; and

(b) a diesel engine to which regulation 4 or 6 of the Environmental Protection and Management (Vehicular Emissions) Regulations (Cap. 94A, Rg 6) applies;

“owner”, in relation to an off-road diesel engine, means —

(a) each person who is the owner, joint owner or part owner of the off-road diesel engine; or

(b) a person who has the use or control of the off-road diesel engine under a credit agreement, hiring agreement, hire-purchase agreement or leasing arrangement,

but does not include any person provided to operate the off-road diesel engine or machinery in which the off-road diesel engine is installed as part of a hiring agreement for the off-road diesel engine or machinery;

“railway” has the same meaning as in the Railways Act (Cap. 263) but does not include any rapid transit system set up under the Rapid Transit Systems Act (Cap. 263A);

“vessel” includes any ship or boat or air-cushioned vehicle or floating rig or platform used in any form of operations in or on water or any other description of vessel;

“visiting force” has the same meaning as in the Visiting Forces Act (Cap. 344).

### **Application**

3. These Regulations do not apply to any off-road diesel engine —
- (a) owned by the Government for the use of the Singapore Armed Forces, the Singapore Police Force or the Singapore Civil Defence Force; or
  - (b) used by or used for the purpose of any visiting force lawfully present in Singapore.

## PART II

### IMPORT OF OFF-ROAD DIESEL ENGINES

#### **Application of this Part**

4. This Part shall only apply to off-road diesel engines that are industrial plant or are installed in an industrial plant.

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**Import of off-road diesel engine**

5.—(1) Subject to paragraph (2), no person shall on or after 1st July 2012 import an off-road diesel engine except with the prior written approval of the Director-General.

(2) Paragraph (1) shall not apply to any off-road diesel engine imported solely for re-export or transshipment to any other country.

(3) Any person who contravenes paragraph (1) shall be guilty of an offence.

**Application for import approval**

6.—(1) An application for approval to import an off-road diesel engine shall be submitted to the Director-General in such form and manner as he may require, together with —

- (a) a test report from the manufacturer of the off-road diesel engine or the manufacturer of the industrial plant in which the off-road diesel engine is installed stating that the off-road diesel engine —
  - (i) conforms to any of the standards for exhaust emission specified in the Schedule; or
  - (ii) belongs to a model or batch of off-road diesel engines that conform to any of the standards for exhaust emission specified in the Schedule; and
- (b) such other documents as the Director-General may require to satisfy the Director-General that the off-road diesel engine conforms to any of the standards for exhaust emission specified in the Schedule.

(2) In considering an application for approval to import an off-road diesel engine, the Director-General may require the applicant to submit to him a test report from an examiner stating that the off-road diesel engine was examined by the examiner on a date not earlier than 3 months before the date of the application and was found to conform to any of the standards for exhaust emission specified in the Schedule.

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### PART III

#### USE AND EXAMINATION OF OFF-ROAD DIESEL ENGINES

##### **Application of this Part**

7. This Part shall only apply to off-road diesel engines imported into, or manufactured in, Singapore on or after 1st July 2012.

##### **No use of non-conforming off-road diesel engine**

8.—(1) No owner of an off-road diesel engine shall use the off-road diesel engine, or cause or permit the off-road diesel engine to be used, if it does not conform to any of the standards for exhaust emission specified in the Schedule.

(2) Any person who contravenes paragraph (1) shall be guilty of an offence.

##### **Examination notices**

9.—(1) The Director-General may at any time by notice in writing require the owner of an off-road diesel engine to submit to him, within the time specified in the notice, a test report from an examiner stating that the off-road diesel engine was examined by the examiner on a date not earlier than 3 months before the date of the submission of the test report and was found to conform to any of the standards for exhaust emission specified in the Schedule.

(2) Any owner of an off-road diesel engine who fails to comply with the notice of the Director-General under paragraph (1) shall be guilty of an offence unless he satisfies the court that, owing to some mechanical breakdown of the off-road diesel engine or other sufficient reason, he is unable to comply with the notice.

### PART IV

#### MISCELLANEOUS

##### **Penalty**

10. Any person who is guilty of an offence under any provision of these Regulations shall be liable on conviction to a fine not exceeding

\$10,000 and, in the case of a second or subsequent conviction, to a fine not exceeding \$20,000.

## THE SCHEDULE

Regulations 6, 8(1) and 9(1)

### STANDARDS FOR EXHAUST EMISSION FOR OFF-ROAD DIESEL ENGINES

1. The specified standards for exhaust emission for off-road diesel engines, as tested under ISO 8178 test procedures, are as follows:

(a) US Tier II

Net Power (P) (kW)	CO (g/kWh)	NMHC + NO <sub>x</sub> (g/kWh)	PM (g/kWh)
P > 560	3.5	6.4	0.2
450 ≤ P < 560	3.5	6.4	0.2
225 ≤ P < 450	3.5	6.4	0.2
130 ≤ P < 225	3.5	6.6	0.2
75 ≤ P < 130	5.0	6.6	0.3
37 ≤ P < 75	5.0	7.5	0.4
19 ≤ P < 37	5.5	7.5	0.6
8 ≤ P < 19	6.6	7.5	0.8
P < 8	8.0	7.5	0.8

(b) EU Stage II

Net Power (P) (kW)	HC (g/kWh)	CO (g/kWh)	NO <sub>x</sub> (g/kWh)	PM (g/kWh)
130 ≤ P < 560	1.0	3.5	6.0	0.2
75 ≤ P < 130	1.0	5.0	6.0	0.3
37 ≤ P < 75	1.3	5.0	7.0	0.4
18 ≤ P < 37	1.5	5.5	8.0	0.8

(c) Japan Tier I

THE SCHEDULE — *continued*

Net Power (P) (kW)	HC (g/kWh)	CO (g/kWh)	NO <sub>x</sub> (g/kWh)	PM (g/kWh)	Smoke opacity (%)
130 ≤ P < 560	1.0	3.5	6.0	0.2	40
75 ≤ P < 130	1.0	5.0	6.0	0.3	40
37 ≤ P < 75	1.3	5.0	7.0	0.4	40
19 ≤ P < 37	1.5	5.0	8.0	0.8	40
8 ≤ P < 19	1.5	5.0	9.0	0.8	—

## 2. In this Schedule —

“CO” means carbon monoxide;

“g/kWh” means gram per kilowatt hour;

“HC” means hydrocarbons;

“ISO” means International Standards Organisation;

“NMHC” means non-methane hydrocarbons;

“NO<sub>x</sub>” means oxides of nitrogen;

“PM” means particulate matter.

Made this 22nd day of June 2012.

CHEW GEK KHIM  
*Chairman,*  
*National Environment Agency,*  
*Singapore.*

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(To be presented to Parliament under section 77(3) of the Environmental Protection and Management Act).