

ENVIRONMENTAL PROTECTION AND MANAGEMENT ACT
(CHAPTER 94A, SECTION 77)

ENVIRONMENTAL PROTECTION AND MANAGEMENT
(ENERGY CONSERVATION) REGULATIONS

ARRANGEMENT OF REGULATIONS

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-

[1st January 2008]

Citation

1. These Regulations may be cited as the Environmental Protection and Management (Energy Conservation) Regulations.

Definitions

2. In these Regulations, unless the context otherwise requires —
 - “air-conditioner” means a single-phase non-ducted room air-conditioner as specified in Part I of the Schedule to the Environmental Protection and Management (Registrable Goods) Order (O 2);
 - “clothes dryer” means a single-phase clothes dryer as specified in Part II of the Schedule to the Environmental Protection and Management (Registrable Goods) Order (O 2);

“energy efficiency” —

- (a) in relation to air-conditioners, means the Coefficient of Performance as defined in the First Schedule;
- (b) in relation to clothes dryers, means the Energy Consumption as defined in the First Schedule;
- (c) [*Deleted by S 302/2012*]
- (d) in relation to refrigerators, means the Annual Energy Consumption as defined in the First Schedule;

“Energy Label” means an energy label that is in accordance with the requirements specified in the First Schedule;

[*Deleted by S 302/2012*]

“refrigerator” means a single-phase refrigerator as specified in Part I of the Schedule to the Environmental Protection and Management (Registrable Goods) Order (O 2);

[*Deleted by S 302/2012*]

“technical file”, in relation to any registered goods, means the file on the registered goods kept and maintained under regulation 6(1);

“test report”, in relation to any registrable goods or registered goods, means —

- (a) the report of the test carried out for the registrable goods or registered goods (as the case may be) in accordance with the prevailing test standard or method specified in the Second Schedule; and
- (b) where there is more than one such test report in respect of the registrable goods or registered goods (as the case may be), the test report that is the most recent;

[*Deleted by S 302/2012*]

Form and manner of registration

3.—(1) An application to be registered as a registered supplier shall be made —

- (a) using the relevant form provided at <http://www.nea.gov.sg/>;
and
- (b) in the manner specified by the Director-General.
- (2) Every application referred to in paragraph (1) shall be accompanied by —
- (a) such documents and information as may be required in the relevant form; and
- (b) a fee specified in the Third Schedule, which shall not be refundable.
- (3) An application to register any registrable goods, or to renew the registration of any registered goods, shall be made using the electronic application service provided at <http://www.nea.gov.sg/>.
- (4) Every application referred to in paragraph (3) shall be accompanied by —
- (a) a test report issued in respect of the registrable goods or the registered goods (as the case may be), showing the energy efficiency of such goods and such other information as the Director-General may require;
- (b) such other documents and information as may be required in the relevant form; and
- (c) a fee specified in the Third Schedule, which shall not be refundable.
- (5) In the event of a malfunction or failure, or an imminent malfunction or failure, of the website referred to in paragraph (1) or the electronic application service referred to in paragraph (3), the application shall be made in such written form as the Director-General may require.
- (6) Upon the registration of any person as a registered supplier, the Director-General shall issue an identification number to the registered supplier in such form as the Director-General may determine.
- (7) Upon the registration of any registrable goods or the renewal of the registration of any registered goods, the Director-General shall

issue a certificate of registration to the registered supplier in such form as the Director-General may determine.

Registered supplier to notify Director-General of change in particulars

4.—(1) A registered supplier shall notify the Director-General of any change to any of the particulars provided to the Director-General when making an application under regulation 3(1) not less than 14 days before the change.

(2) Any person who, without reasonable excuse, contravenes paragraph (1) shall be guilty of an offence and shall be liable on conviction to a fine not exceeding \$2,000.

Modification of registered goods

5.—(1) Where any registered goods are modified in any way by the manufacturer of those registered goods, the registered supplier concerned shall do the following before the modified registered goods are supplied in Singapore:

- (a) notify the Director-General in writing of the modification to the registered goods;
- (b) where the modification alters the energy efficiency of the registered goods, submit to the Director-General a test report showing the energy efficiency of such goods, as modified, and such other information as the Director-General may require; and
- (c) update the technical file on the registered goods with details of the modification, including the test report referred to in sub-paragraph (b).

(2) Any person who contravenes paragraph (1) shall be guilty of an offence and shall be liable on conviction to a fine not exceeding \$2,000.

Maintenance of records

6.—(1) For the purposes of section 40I of the Act, a registered supplier shall keep and maintain a technical file on each of the

registered goods for the period of the registration of the registered goods.

- (2) The technical file shall include —
- (a) the certificate of registration issued by the Director-General under regulation 3(7) in respect of the registered goods;
 - (b) the test report issued in respect of the registered goods in accordance with regulation 3(4)(a);
 - (c) detailed records of any modification to the registered goods, including the test report referred to in regulation 5(1)(b), where applicable; and
 - (d) such other documents and information as the Director-General may, from time to time, require by notice in writing.

Minimum Energy Efficiency Standards

6A. The minimum energy efficiency standards specified in the Fourth Schedule for the following registrable goods are prescribed minimum energy efficiency standards for the purposes of section 40C(1)(c) of the Act:

- (a) air-conditioners; and
- (b) refrigerators.

Display and affixing of Energy Label

7.—(1) Every registered supplier of any registrable goods shall affix an Energy Label in the manner specified in paragraph (2), or permitted or directed by the Director-General under paragraph (3) —

- (a) after the certificate of registration has been issued by the Director-General in respect of such goods; and
- (b) before supplying such goods in Singapore.

(2) Every Energy Label shall be affixed securely in a prominent position on the registered goods, conspicuous and unobstructed.

- (3) Where the Director-General is of the opinion that —
- (a) any registered goods are of such a nature as to prevent such goods from being affixed with the Energy Label in the manner specified in paragraph (2); or
 - (b) any registered goods are to be supplied in circumstances which do not require the Energy Label to be displayed to an intending purchaser or user,

the Director-General may, subject to such terms and conditions as he may impose, permit the Energy Label to be affixed —

- (i) to anything in or on the registered goods or with which the registered goods are supplied; or
- (ii) in such other manner as the Director-General may direct so as to be easily read by an intending purchaser or user.

(4) Any person who contravenes paragraph (1) shall be guilty of an offence and shall be liable on conviction to a fine not exceeding \$2,000.

Misuse of Energy Label, etc.

8.—(1) Any person who, without reasonable excuse, defaces, obstructs, removes or misuses any Energy Label shall be guilty of an offence and shall be liable on conviction to a fine not exceeding \$2,000.

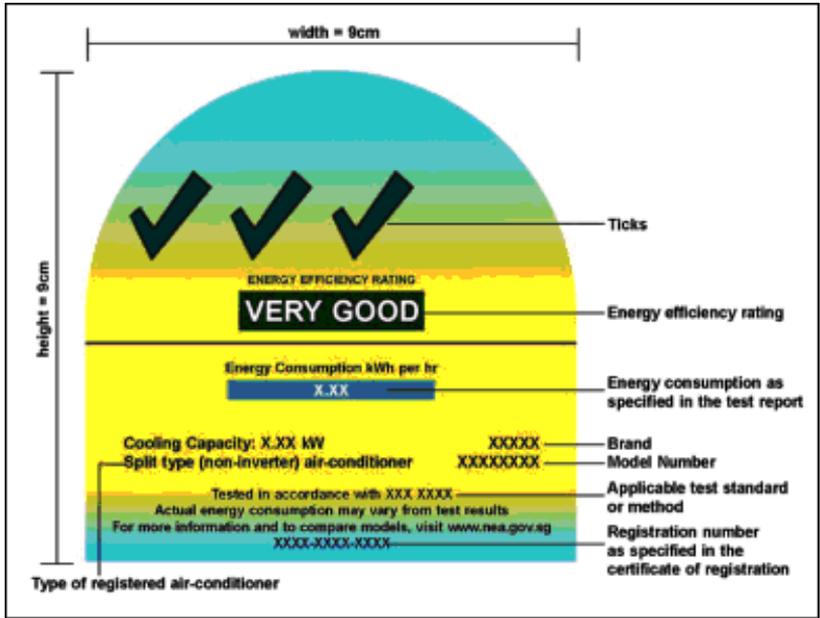
(2) Any person who forges or alters any Energy Label shall be guilty of an offence and shall be liable on conviction to a fine not exceeding \$2,000 or to imprisonment for a term not exceeding 3 months or to both.

FIRST SCHEDULE

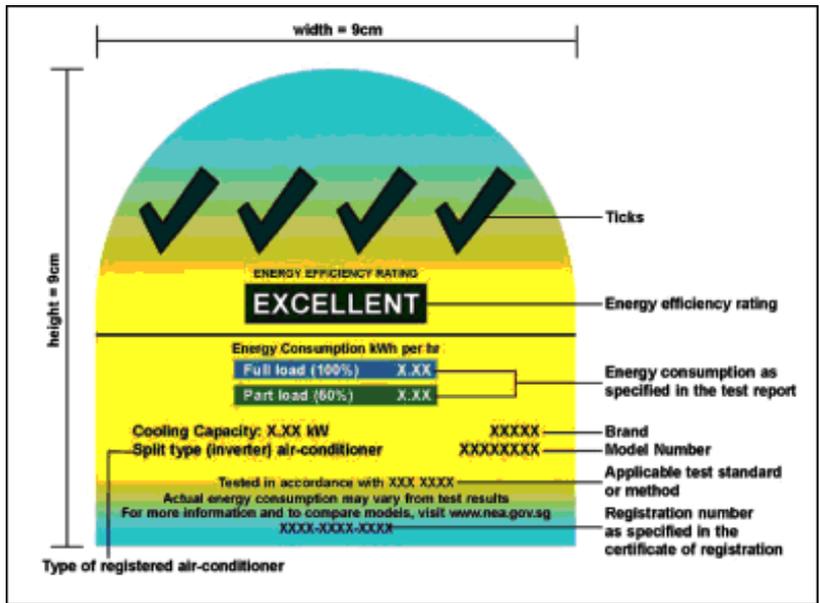
Regulation 2

ENERGY LABEL FOR CASEMENT, WINDOW AND SPLIT TYPE (NON-INVERTER) AIR-CONDITIONERS

FIRST SCHEDULE — continued

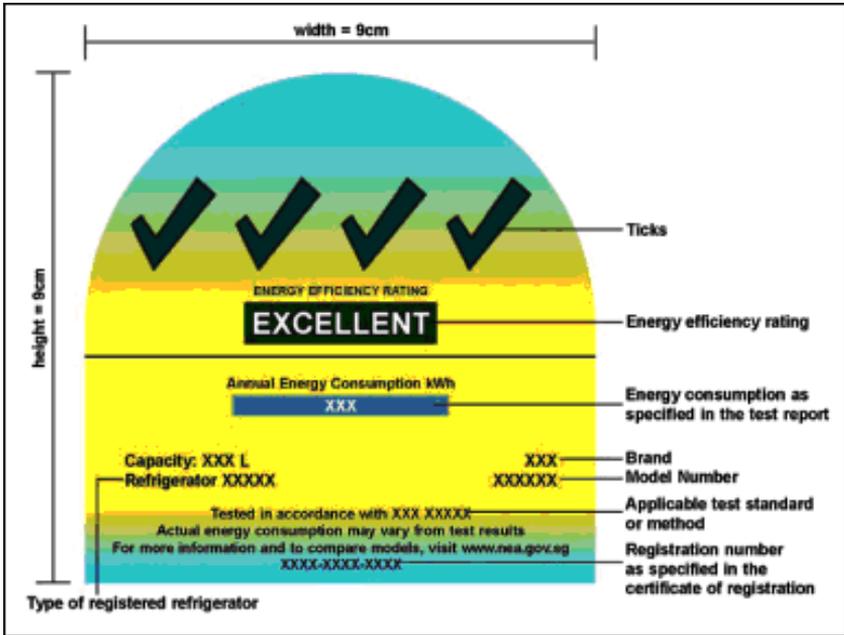


ENERGY LABEL FOR SPLIT TYPE (INVERTER) AIR-CONDITIONERS

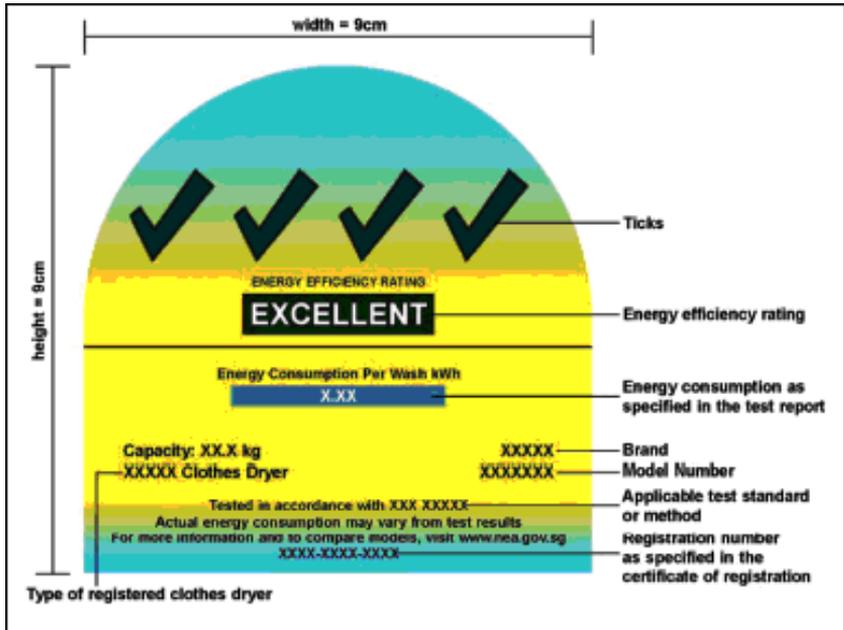


ENERGY LABEL FOR REFRIGERATORS

FIRST SCHEDULE — *continued*



ENERGY LABEL FOR CLOTHES DRYERS



FIRST SCHEDULE — *continued*

1. Subject to these Regulations, every Energy Label —
- (a) shall be of the dimensions as shown in this Schedule or be proportionately larger;
 - (b) shall be of the shape, colour and contain text that is of the typeface Arial as shown in this Schedule, legible and in the English language only;
 - (c) shall contain information that is consistent with or drawn from the relevant test report;
 - (d) shall be printed in an indelible manner and with a minimum resolution of 300 pixels per inch; and
 - (e) shall be made of such material as the Director-General may approve.
2. The number of ticks and energy efficiency rating to be shown on the Energy Label for air-conditioners, refrigerators and clothes dryers shall be determined as follows:

- (a) for casement and window type air-conditioners —

<i>Ticks</i>	<i>Energy efficiency rating</i>	<i>Coefficient of Performance (COP) range</i>
1	Fair	$2.50 \leq \text{COP} < 2.78$
2	Good	$2.78 \leq \text{COP} < 3.20$
3	Very Good	$\text{COP} \geq 3.20$

- (b) for split type (non-inverter) air-conditioners with one indoor unit —
- (i) cooling capacity less than 7kW:

<i>Ticks</i>	<i>Energy efficiency rating</i>	<i>Coefficient of Performance (COP) range</i>
2	Good	$2.96 \leq \text{COP} < 3.20$
3	Very Good	$\text{COP} \geq 3.20$

- (ii) cooling capacity equal to or more than 7kW:

<i>Ticks</i>	<i>Energy efficiency rating</i>	<i>Coefficient of Performance (COP) range</i>
1	Fair	$2.50 \leq \text{COP} < 2.78$
2	Good	$2.78 \leq \text{COP} < 3.20$
3	Very Good	$\text{COP} \geq 3.20$

FIRST SCHEDULE — *continued*

(c) for split type (non-inverter) air-conditioners with more than one indoor unit —

(i) cooling capacity less than 7kW:

<i>Ticks</i>	<i>Energy efficiency rating</i>	<i>Coefficient of Performance (COP) range</i>
2	Good	$2.96 \leq \text{COP} < 3.34$
3	Very Good	$\text{COP} \geq 3.34$

(ii) cooling capacity equal to or more than 7kW:

<i>Ticks</i>	<i>Energy efficiency rating</i>	<i>Coefficient of Performance (COP) range</i>
1	Fair	$2.64 \leq \text{COP} < 2.92$
2	Good	$2.92 \leq \text{COP} < 3.34$
3	Very Good	$\text{COP} \geq 3.34$

(d) for split type (inverter) air-conditioners with one indoor unit —

(i) cooling capacity less than 7kW:

<i>Ticks</i>	<i>Energy efficiency rating</i>	<i>Coefficient of Performance (COP) range</i>
2	Good	$2.96 \leq \text{Weighted COP} < 3.34$
3	Very Good	$\text{Weighted COP} \geq 3.34$ and $\text{COP} \geq 3.06$
4	Excellent	$\text{Weighted COP} \geq 3.76$ and $\text{COP} \geq 3.34$

(ii) cooling capacity equal to or more than 7kW:

<i>Ticks</i>	<i>Energy efficiency rating</i>	<i>Coefficient of Performance (COP) range</i>
1	Fair	$2.64 \leq \text{Weighted COP} < 2.92$
2	Good	$2.92 \leq \text{Weighted COP} < 3.34$
3	Very Good	$\text{Weighted COP} \geq 3.34$ and $\text{COP} \geq 3.06$

FIRST SCHEDULE — *continued*

4	Excellent	Weighted COP ≥ 3.76 and COP ≥ 3.34
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(e) for split type (inverter) air-conditioners with more than one indoor unit —

(i) cooling capacity less than 7kW:

<i>Ticks</i>	<i>Energy efficiency rating</i>	<i>Coefficient of Performance (COP) range</i>
2	Good	$2.96 \leq \text{Weighted COP} < 3.34$
3	Very Good	Weighted COP ≥ 3.34 and COP ≥ 3.06
4	Excellent	Weighted COP ≥ 3.76 and COP ≥ 3.34

(ii) cooling capacity equal to or more than 7kW:

<i>Ticks</i>	<i>Energy efficiency rating</i>	<i>Coefficient of Performance (COP) range</i>
1	Fair	$2.64 \leq \text{Weighted COP} < 2.92$
2	Good	$2.92 \leq \text{Weighted COP} < 3.34$
3	Very Good	Weighted COP ≥ 3.34 and COP ≥ 3.06
4	Excellent	Weighted COP ≥ 3.76 and COP ≥ 3.34

(f) for refrigerators —

(i) without freezer:

<i>Ticks</i>	<i>Energy efficiency rating</i>	<i>Annual Energy Consumption (AEC) in kWh</i>
2	Good	$(368 + 0.892 \times \text{Vadj tot}) \times 0.812 \geq \text{AEC} > (368 + 0.892 \times \text{Vadj tot}) \times 0.74$
3	Very Good	$(368 + 0.892 \times \text{Vadj tot}) \times 0.74 \geq \text{AEC} > (368 + 0.892 \times \text{Vadj tot}) \times 0.64$

FIRST SCHEDULE — *continued*

4	Excellent	$(368 + 0.892 \times \text{Vadj tot}) \times 0.64 \geq \text{AEC}$
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(ii) with freezer:

<i>Ticks</i>	<i>Energy efficiency rating</i>	<i>Annual Energy Consumption (AEC) in kWh</i>
2	Good	$(465 + 1.378 \times \text{Vadj tot}) \times 0.699 \geq \text{AEC} > (465 + 1.378 \times \text{Vadj tot}) \times 0.593$
3	Very Good	$(465 + 1.378 \times \text{Vadj tot}) \times 0.593 \geq \text{AEC} > (465 + 1.378 \times \text{Vadj tot}) \times 0.457$
4	Excellent	$(465 + 1.378 \times \text{Vadj tot}) \times 0.457 \geq \text{AEC}$

(iii) with freezer and through-the-door ice dispenser:

<i>Ticks</i>	<i>Energy efficiency rating</i>	<i>Annual Energy Consumption (AEC) in kWh</i>
2	Good	$(585 + 1.378 \times \text{Vadj tot}) \times 0.646 \geq \text{AEC} > (585 + 1.378 \times \text{Vadj tot}) \times 0.593$
3	Very Good	$(585 + 1.378 \times \text{Vadj tot}) \times 0.593 \geq \text{AEC} > (585 + 1.378 \times \text{Vadj tot}) \times 0.457$
4	Excellent	$(585 + 1.378 \times \text{Vadj tot}) \times 0.457 \geq \text{AEC}$

(g) for clothes dryers —

<i>Ticks</i>	<i>Energy efficiency rating</i>	<i>Energy Consumption (EC) Per Wash in kWh</i>
0	Low	EC > Rated Capacity
1	Fair	Rated Capacity \geq EC > Rated Capacity x 0.83
2	Good	Rated Capacity x 0.83 \geq EC > Rated Capacity x 0.67

FIRST SCHEDULE — *continued*

3	Very Good	Rated Capacity x 0.67 ≥ EC > Rated Capacity x 0.50
4	Excellent	Rated Capacity x 0.50 ≥ EC

3. "[Deleted by S 302/2012]"

4. In this Schedule, unless the context otherwise requires —

“Annual Energy Consumption” or “AEC” means the amount of energy consumed over 8,760 hours expressed in kilowatt-hour as specified in the test report;

“Coefficient of Performance” or “COP” means the ratio of the total cooling capacity expressed as Watts to the total effective input power expressed as Watts, as specified in the test report;

“Energy Consumption” or “EC” , in relation to clothes dryers, means the amount of energy consumed per cycle as specified in the test report;

[Deleted by S 302/2012]

“split type (inverter) air-conditioner” and “split type (non-inverter) air-conditioner” have the same meanings as in Part I of the Schedule to the Environmental Protection and Management (Registrable Goods) Order (O 2);

“Weighted COP” means the sum of 0.4 x COP at full-load cooling capacity and 0.6 x COP at part-load cooling capacity.

SECOND SCHEDULE

Regulation 2

TEST STANDARD OR METHOD

1. The test report shall contain the results of tests carried out for the registrable goods in accordance with the applicable test standard or method, as follows:

<i>Registrable goods</i>	<i>Type</i>	<i>Applicable test standard or method</i>
Air-conditioner	Casement/ Window type	ISO 5151 (1994)
	Split type (inverter)	JIS C 9612 (1994)
		The cooling tests shall be conducted at 2 points, namely,

SECOND SCHEDULE — *continued*

		the full-load cooling capacity and the part-load cooling capacity
	Split type (non-inverter)	ISO 5151 (1994).
Clothes Dryers	All	IEC 61121 (2005) The test shall be conducted on cotton textiles using the dry cotton drying programme.
[Deleted by S 302/2012 wef 01/07/2012]		
Refrigerator	All	ISO 15502 (2005) IEC 62552 (2007)
	Without freezer	ISO 7371 (1995) with amendment 1 valid up to 30th June 2010
	With freezer	ISO 8187 (1991) with amendment 1 valid up to 30th June 2010
	With frost-free freezer	ISO 8561 (1995) valid up to 30th June 2010.

2. In this Schedule, unless the context otherwise requires —

“IEC” means the International Electrotechnical Commission;

“ISO” means the International Organization for Standardization;

“JIS” means the Japanese Industrial Standard;

“casement or window type air-conditioner”, “split type (inverter) air-conditioner” and “split type (non-inverter) air-conditioner” have the same meanings as in Part I of the Schedule to the Environmental Protection and Management (Registrable Goods) Order (O 2);

[Deleted by S 302/2012]

THIRD SCHEDULE

Regulation 3(2)(b) and (4)(c)

FEES

- | | |
|--|------------|
| 1. Application for registration as a registered supplier | No charge. |
| 2. Application for registration for each registrable good — | |
| (a) air-conditioner | \$34 |
| (b) clothes dryer | \$34 |
| (c) [<i>Deleted by S 302/2012 wef 01/07/2012</i>] | |
| (d) refrigerator | \$34. |
| 3. Application for renewal of registration for each registrable good — | |
| (a) air-conditioner | \$18 |
| (b) clothes dryer | \$18 |
| (c) [<i>Deleted by S 302/2012 wef 01/07/2012</i>] | |
| (d) refrigerator | \$18. |

FOURTH SCHEDULE

Regulation 6A

MINIMUM ENERGY EFFICIENCY STANDARDS

<i>Registrable Goods</i>	<i>Minimum Energy Efficiency Standards</i>
1. Casement and window type air-conditioners	COP \geq 2.50
2. Split type (non-inverter) air-conditioners with one indoor unit (cooling capacity less than 7kW)	COP \geq 2.96
3. Split type (non-inverter) air-conditioners with one indoor unit (cooling capacity equal to or more than 7kW)	COP \geq 2.50
4. Split type (non-inverter) air-conditioners with more than one	COP \geq 2.96

FOURTH SCHEDULE — *continued*

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|---|--|
| indoor unit (cooling capacity less than 7kW) | |
| 5. Split type (non-inverter) air-conditioners with more than one indoor unit (cooling capacity equal to or more than 7kW) | COP \geq 2.64 |
| 6. Split type (inverter) air-conditioners with one indoor unit (cooling capacity less than 7kW) | Weighted COP \geq 2.96 |
| 7. Split type (inverter) air-conditioners with one indoor unit (cooling capacity equal to or more than 7kW) | Weighted COP \geq 2.64 |
| 8. Split type (inverter) air-conditioners with more than one indoor unit (cooling capacity less than 7kW) | Weighted COP \geq 2.96 |
| 9. Split type (inverter) air-conditioners with more than one indoor unit (cooling capacity equal to or more than 7kW) | Weighted COP \geq 2.64 |
| 10. Refrigerators without freezer | AEC \leq (368 + 0.892 x V _{adj tot}) x 0.812 |
| 11. Refrigerators with freezer | AEC \leq (465 + 1.378 x V _{adj tot}) x 0.699 |
| 12. Refrigerators with freezer and through-the-door ice dispenser | AEC \leq (585 + 1.378 x V _{adj tot}) x 0.646 |

THE SCHEDULE

[G.N. No. S 311/2007]

LEGISLATIVE HISTORY
ENVIRONMENTAL PROTECTION AND MANAGEMENT
(ENERGY CONSERVATION) REGULATIONS
(CHAPTER 94A, RG 10)

This Legislative History is provided for the convenience of users of the Environmental Protection and Management (Energy Conservation) Regulations. It is not part of these Regulations.

**1. G. N. No. S 311/2007 — Environmental Protection and Management
(Energy Conservation) Regulations 2007**

Date of commencement : 1 January 2008

**2. 2008 Revised Edition — Environmental Protection and Management
(Energy Conservation) Regulations**

Date of operation : 31 January 2008

**3. G. N. No. S 92/2009 — Environmental Protection and Management
(Energy Conservation) (Amendment)
Regulations 2009**

Date of commencement : 1 April 2009

**4. G. N. No. S 352/2010 — Environmental Protection and Management
(Energy Conservation) (Amendment)
Regulations 2010**

Date of commencement : 1 July 2010

**5. G.N. No. S 407/2011 — Environmental Protection and Management
(Energy Conservation) (Amendment)
Regulations 2011**

Date of commencement : 1 September 2011

**6. G.N. No. S 302/2012 — Environmental Protection and Management
(Energy Conservation) (Amendment)
Regulations 2012**

Date of commencement : 1 July 2012