

CONSULTATION PAPER
ON
A MANDATORY ENERGY EFFICIENCY
LABELLING SCHEME

Environmental Protection Department
Government of the Hong Kong Special Administrative Region
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PURPOSE

We would like to invite your views on a proposed mandatory energy efficiency labelling scheme (EELS) for specified electric appliances in Hong Kong.

BACKGROUND

Energy Consumption in Hong Kong

2. Total local energy consumption at end-use level in Hong Kong reached 294,000 Terajoule (TJ) in 2004, with an average annual growth rate of 1.4% in the last decade. Figures 1 and 2 show the distribution of energy consumption by sector and fuel type in 2004.

Figure 1 – Energy Consumption by Sector in 2004

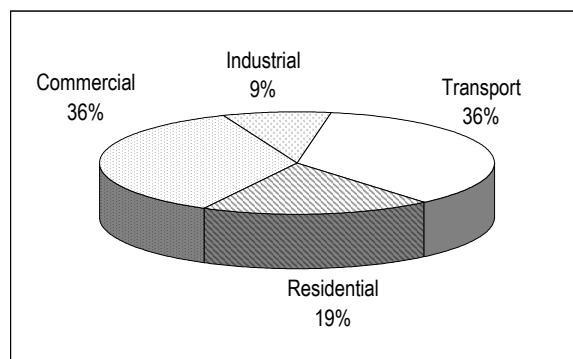
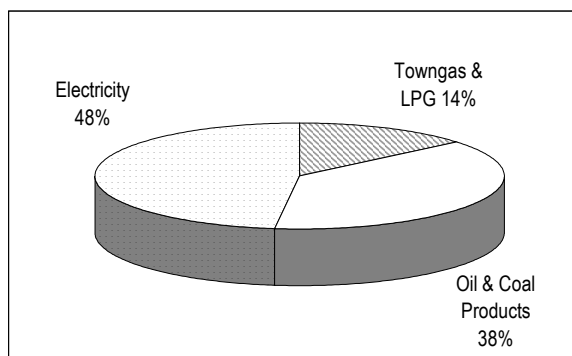


Figure 2 – Energy Consumption by Fuel Type in 2004



3. Electric appliances, such as room coolers, refrigerators and lamps, have become part of our daily life and take up a significant portion of our total electricity consumption. In 2004, total electricity consumption in Hong Kong was 39,200 Gigawatt hours (GWh) (141,000 TJ), of which about 28% (11,000 GWh) were used by household appliances and office equipment.

4. Electricity generation through the burning of fossil fuels is a major source of air pollution in Hong Kong. In 2003, electricity generation accounted for 92%, 57% and 46% of emissions of sulphur dioxide, nitrogen oxides and particulates respectively in Hong Kong. Significant energy saving could be achieved by using more energy efficient electric appliances which help reduce the emission of greenhouse gases and other air pollutants.

The Voluntary Energy Efficiency Labelling Scheme

5. Since 1995, the Electrical and Mechanical Services Department (EMSD) has been operating a voluntary EELS for household and office appliances and vehicles. The scheme aims to promote energy saving by informing customers of the energy efficiency performance of the products. The scheme also intends to encourage product suppliers to make available more energy-efficient products to meet customer demand.

6. There are two types of labels under the voluntary EELS, namely the “Grading Type” and the “Recognition Type” energy labels. Samples and brief description of these labels are shown below –

ENERGY LABEL 能源標籤	
Brand 牌子	ABC 某某牌
Model 型號	HK1234
Annual Energy Consumption * kWh/yr 每年耗電量 每年耗小時 Actual consumption depends on where the appliance is located and how it is used. Based on 1200 hrs/yr operation. 其耗電量視乎冷氣機的安裝地點及使用方式。現假設每年使用率為1200小時。	1200
Energy Efficiency Grade* 能源效益級別 Among the five grades, Grade 1 is the most energy efficient. 在五級別中，第一級最為省電。	1
Room Cooler Category * 冷氣機類別	1
Cooling Capacity (kW) 製冷量	2.5
Refrigerant 製冷劑	HFC 123
EEL Registration Number 能源標籤登記號碼	C 96-0001
* The data are provided according to the Hong Kong Energy Efficiency Labelling Scheme for Room Coolers administered by the Electrical and Mechanical Services Department (EMSD), Government of the Hong Kong Special Administrative Region. The registration record can be found at the EMSD website at www.emsd.gov.hk. 資料根據香港特別行政區政府機電工程署推行的香港冷氣機能源效益標籤計劃的規定列出。有關註冊記錄可查閱網址 www.emsd.gov.hk。	

Figure 3

The “Grading Type” energy label classifies the energy performance of a product type into five grades. A product with a “grade 1” label means that it is the most energy efficient product in the market. A “grade 3” label signifies that the product is in the average class in respect of energy efficiency whereas a “grade 4” or “grade 5” label denotes that the energy efficiency performance of the product is below the average in the market.



Figure 4

The “Recognition Type” energy label is used to distinguish products that have met a certain level of energy efficiency and performance requirements.

7. The voluntary scheme currently covers a total of 17 types of energy consuming products, a full list of which is at **Annex A**.

Energy Saving

8. Products with good energy efficiency performance produce substantial energy saving. Significant energy saving can be achieved if the community is willing to switch to energy-efficient household and office appliances. For example –

- (a) A “grade 1” energy-labelled room cooler of 9 000 British thermal units (Btu)/hr with cooling capacity for a 10 square metres bedroom will save 480 kWh electricity (equivalent to about \$430) per year¹ when compared to a “grade 5” room cooler of the same cooling capacity.
- (b) For a family of four which uses energy-efficient appliances², the annual saving will amount to \$2,150 when compared to the energy consumption of appliances with “grade 5” energy labels.

PROPOSED MANDATORY ENERGY EFFICIENCY LABELLING SCHEME

Objectives

9. We will continue to promote the voluntary scheme to the public and the trades. As part of the Government’s ongoing efforts to promote the efficient use and conservation of energy, we believe that it is opportune to introduce a mandatory EELS to achieve the following objectives –

- (a) to increase public awareness of the importance of using energy-efficient products;
- (b) to provide consumers with more energy-efficient products; and
- (c) to provide incentive to product suppliers to market more energy-efficient products.

¹ Assuming total running hours equal to 1 200 per year, and average tariff of \$0.9 per kWh.

² Assuming the group of electrical appliances in the family comprises of 1 refrigerator, 3 room coolers, 1 washing machine, 10 compact fluorescent lamps, 1 electric clothes dryer, 1 electric storage water heater, 1 electric rice cooker, 1 dehumidifier, 1 television set and 1 LCD monitor.

The useful role of a mandatory labelling scheme in promoting energy efficiency and conservation and achieving sustainable development is well established internationally. As part of their long-term energy efficiency and conservation programmes, over 40 countries, including the United States, European Union, Australia, New Zealand, Canada and South Korea, have introduced mandatory EELS for various products (please see **Annex B**). Some of these schemes have been in place for over 20 years with successful results.

Coverage of Products

10. Under the proposed mandatory EELS, energy labels are required to be shown on specified products for supply in Hong Kong to inform consumers of their energy efficiency performance. The inclusion of energy consuming products into the mandatory EELS will be implemented in phases. We suggest including the following three products in the initial phase of the mandatory EELS –

- (a) refrigerators;
- (b) room coolers; and
- (c) compact fluorescent lamps.

As indicated in the table below, these three products together account for over 70% of the electricity consumption in the residential sector. They have all been included in the voluntary EELS from early stages and have high levels of participation in the scheme.

Product	% of residential electricity consumption	Market penetration of the voluntary EELS (by sales volume)
Room coolers	40%	80%
Compact fluorescent lamps	19%*	40%
Refrigerators	15%	70%

*Note: the percentage includes lighting from all types of lamps, e.g. compact fluorescent lamps, incandescent lamps, etc.

11. We will review the results of the initial phase of the mandatory scheme, taking into account energy consumption reduction achievement and acceptance of the community and the trades, before deciding whether the scheme should be expanded to other products.

Product Registration

12. In line with the existing voluntary EELS, importers or local manufacturers of products covered by the mandatory EELS will have to register the product models with EMSD prior to supplying them to the local market. Relevant product information, including test reports on the energy efficiency performance of the products, will have to be submitted to EMSD for registration. Any person who supplies products specified under the mandatory EELS for local use will need to ensure that such products have been registered with EMSD.

13. A registration fee to recover the administration cost of vetting and approval of the registration will be levied. A list of registered product models will be posted on the EMSD website. To ensure that the information at the EMSD's registry is up-to-date, importers or local manufacturers of the registered products will be required to provide EMSD a set of up-to-date product information once every five-year in order to keep their products registered with EMSD.

14. An appeal mechanism will be put in place to allow applicants to appeal against the decision of EMSD in respect of product registration.

Test Reports

15. In line with the existing voluntary EELS, EMSD will accept the energy efficiency performance test reports issued by the following organizations for product registration –

- (a) Laboratories which have been accredited by the Hong Kong

Accreditation Service (HKAS) under the Hong Kong Laboratory Accreditation Scheme, or a scheme with which HKAS has entered into a mutual recognition agreement;

- (b) Laboratories which have been assessed by internationally recognized certification bodies, and the tests concerned have been evaluated and endorsed by the certification bodies; or
- (c) Laboratories which have been assessed and recognized by EMSD under the existing voluntary EELS for conducting the relevant tests, and are currently certified under ISO 9001 of the International Organization for Standardization or equivalent standards.

16. We propose that the mandatory EELS will accept testing standards that have already been recognized under the voluntary EELS, such as the International Organization for Standardization, International Electrotechnical Commission (IEC) or other equivalent testing standards.

Labelling Requirement

17. Products covered by the mandatory EELS will have to be labelled in prescribed formats by importers or local manufacturers before being supplied to the local market. A new energy label with distinctive features indicating the energy efficiency gradings of the concerned models will be developed for the mandatory scheme to allow consumers to distinguish it from labels of the existing voluntary EELS. Similar to the existing voluntary EELS, the energy efficiency gradings of the mandatory scheme will be periodically reviewed and, if necessary, updated to reflect any overall advancement of energy performance of the product category.

18. For products covered by the mandatory EELS, retailers will be under an obligation to sell only products with labels provided by the importers or local manufacturers.

Transitional Arrangement

19. To enable the trade to make the necessary preparations for the transition from the voluntary EELS to the mandatory scheme, we propose that a one-year grace period after the enactment of the relevant legislation should be allowed. Product models already registered under the voluntary EELS will not need to be re-tested before transferring to the mandatory scheme.

Enforcement

20. EMSD will be the enforcement agency of the mandatory EELS. Random checks will be carried out to ensure that correct energy labels are used for the specified products covered by the mandatory scheme and valid information is provided in the labels.

Potential Benefits

21. We estimate that with the implementation of the proposed mandatory EELS for the three specified products, an electricity saving of 150 GWh per year could be achieved. This amounts to the annual electricity consumption of 105 000 units of room coolers³, or a saving of \$135 million in electricity bill per year. In terms of environmental benefits, an annual reduction of carbon dioxide emission of 105 000 tonnes will be achieved.

Sustainability Assessment

22. A sustainability assessment shows that the proposed mandatory EELS should contribute positively to energy conservation, reduction of carbon dioxide emission, and alleviation of air pollution. The proposal will help reduce the growing trend of energy consumption. It is in line with

³ Assuming each of these room coolers has a cooling capacity of 9 000 Btu/hr with an average energy efficiency performance, and runs 1 200 hours per year.

the sustainability principle of improving the efficiency in the consumption of natural resources.

WAY FORWARD

23. New legislation is required to implement the mandatory EELS. Apart from consulting the public, we will embark on discussions with stakeholders and expect to receive more ideas and practical implementation proposals from consumers, importers and local manufacturers. We will finalize the details of the proposed scheme and work out a legislative timetable after taking into account comments and views received during the public consultation.

YOUR VIEWS

24. We welcome your views on the proposed mandatory EELS. We will consider all responses before deciding on the way forward. You are invited to send your views on or before **31 October 2005** to the following –

By post: Conservation Division
Environmental Protection Department
46/F, Revenue Tower, Wan Chai
Hong Kong
(Subject: Consultation on Mandatory Energy Efficiency
Labelling Scheme)

By e-mail: eels_consult@epd.gov.hk

By fax: (852)2136 3304

25. Any request to treat all or part of a response in confidence will be respected. Please note that the Government may disclose or publish all or part of the views received and disclose the identity of the source unless a person requests that his/her views be treated in confidence.

Environmental Protection Department
July 2005

Products under the Voluntary Energy Efficiency Labelling Scheme

Household Appliances

- Refrigerators
- Room coolers
- Washing machines
- Electric clothes dryers
- Compact fluorescent lamps
- Electric storage water heaters
- Electric rice cookers
- Dehumidifiers
- Television sets
- Electronic ballasts
- Domestic gas instantaneous water heaters

Office Equipment

- Photocopiers
- Multifunction devices
- Laser printers
- Computers
- LCD monitors

Vehicles

- Petrol passenger cars

Annex B

Examples of Mandatory Energy Efficiency Labelling Schemes in Overseas Countries

Countries	Electric Appliances regulated under mandatory EELS
Australia	Air conditioners, clothes dryers, clothes washers, dishwashers, and refrigerators and freezers
Canada	Air conditioners, clothes dryers, clothes washers, dishwashers, electric ovens, integrated washer-dryers, and refrigerators and freezers,
Mainland China	Refrigerators, and room coolers
South Korea	Air conditioners, ballasts for fluorescent lamps, clothes washers, compact fluorescent lamps, dishwashers, fluorescent lamps, incandescent bulbs, kim-chi fridges, refrigerators and freezers, rice cookers, and water dispensers
Britain	Air conditioners, clothes washers, clothes dryers, integrated washer-dryers, dishwashers, electric ovens, lamps, and refrigerators and freezers,
United States	Air conditioners, ballast, boilers, clothes washers, dishwashers, furnaces, heat pumps, lamps, refrigerator and freezers, and water heaters