

For discussion on
13 June 2006

Legislative Council Panel on Environmental Affairs

Proposed Mandatory Energy Efficiency Labelling Scheme

PURPOSE

This paper reports on the results of the consultation exercise of the proposed mandatory Energy Efficiency Labelling Scheme (EELS) for specified electrical appliances in Hong Kong and seeks Members' views on the proposed way forward.

BACKGROUND

2. We submitted an information paper to the Legislative Council Panel on Environmental Affairs on the proposed mandatory EELS in June 2005 before launching a three-month public consultation (the relevant paper is at **Annex A**). The proposed mandatory EELS aims 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.

3. 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. We have proposed to include three products, namely, refrigerator, room air conditioner and compact fluorescent lamp, in the mandatory scheme. These three products have been included in the voluntary EELS in the early stage and have the highest market penetration rates.

PUBLIC CONSULTATION

4. A three-month public consultation on the proposed mandatory EELS was launched in July 2005. During the consultation period, we arranged consultation meetings with the Advisory Council on the Environment, trade associations, product suppliers and other stakeholders to solicit their views on the proposed scheme. At the end of the consultation period, we received a total of 37 written submissions, including submissions from trade associations, green groups, professional and education institutions, consumer organization, power utility, testing laboratories, product manufacturers and suppliers. The vast majority of views received expressed support to the implementation of the proposed mandatory EELS and agreed that the scheme was in the correct direction for achieving efficient use of energy. Some submissions offered specific comments on the implementation details of the mandatory scheme. A summary of the views received during the consultation period is at **Annex B**.

WAY FORWARD

Task Forces with the Trades

5. In view of the positive feedback received in the consultation period, we consider that the Administration should proceed with the proposed mandatory scheme. A new ordinance is required for the implementation of the scheme. To address the concerns expressed during the public consultation, we have set up two task forces with the relevant trade associations and suppliers to work out the implementation details of the scheme. So far, the two task forces have each held three meetings.

Legislative Proposal

Product Coverage

6. The mandatory scheme will cover three specified products, namely, room air conditioner, refrigerator and compact fluorescent lamp, which are supplied in Hong Kong. The following products will be excluded - :

- (a) products under transshipment or in transit through Hong Kong;
- (b) products manufactured in Hong Kong for export;
- (c) products supplied as scrap or in a place other than Hong Kong under a sale agreement entered into in Hong Kong; or
- (d) second hand products, including products which are supplied as part of or in connection with a disposition of any premises unless the disposition is the first disposition made prior to the first occupation of the premises.

Registration

7. In line with the existing voluntary EELS, suppliers of products covered by the mandatory EELS will be required to register their products with the Electrical and Mechanical Services Department (EMSD) prior to supplying them to the local market. Suppliers will be required to submit relevant energy performance information of the products for registration. Details of information to be submitted to EMSD will be set out in codes of practice issued by EMSD. The list of the registered products with energy efficiency information will be made available to the public. Registration holders will be required to update their product information with EMSD at least once every five years. A registration fee will be charged to cover the administration cost of the registration. We are in discussion with the relevant trades and suppliers on the proposed fee level.

Labelling Requirement

8. Under the mandatory scheme, no person shall supply a prescribed product unless the product bears an energy label in a format specified by Director of Electrical and Mechanical Services (DEMS). Such label shall contain the same information registered with EMSD. Proposed formats of the energy labels to be specified by DEMS are at **Annex C**.

Codes of Practice

9. DEMS will issue codes of practice for the purpose of providing guidance for compliance with the requirements under the new legislation. The codes of practices will cover procedures on application for registration, acceptance criteria for testing laboratories and certification bodies, appliance

classification, test standards, methodology for calculating energy efficiency grading, format of energy label and manner of labelling etc.

Transitional Arrangement

10. We propose to allow a grace period after enactment of the new ordinance. During the grace period, products currently registered under the voluntary EELS can be transferred to the mandatory scheme free of charge. The trade will also be allowed to apply registration for the three prescribed products or sell their existing stock without energy labels. After the grace period, all products covered by mandatory scheme should contain an energy label before they are supplied to the local market.

Legislative Timetable

11. We are now preparing the legislation for the introduction of the mandatory scheme. We aim to introduce the legislation into the Legislative Council in the end of 2006.

ADVICE SOUGHT

12. Members are invited to comment on the way forward of the proposed mandatory EELS.

Environmental Protection Department
June 2006

For information

Legislative Council Panel on Environmental Affairs

Proposed Mandatory Energy Efficiency Labelling Scheme

PURPOSE

This paper informs Members of the framework of the proposed mandatory energy efficiency labelling scheme (EELS) for specified electric appliances in Hong Kong.

BACKGROUND

Hong Kong's Energy Consumption

2. Total local energy consumption at end-use level in Hong Kong grew at an average rate of 1.4% per annum in the last decade. In 2004, the total electricity consumption in Hong Kong was 39 200 Gigawatt hours (GWh), of which about 28% were used by household appliances and office equipment.

Voluntary Energy Efficiency Labelling Scheme

3. 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 potential customers of the energy performance level of the products. This scheme also intends to encourage product suppliers to make available more energy-efficient products to meet customers' demand.

4. There are two types of labels under the voluntary EELS, namely the "Grading Type" and the "Recognition Type" energy labels. Description and samples of these two types of energy labels are at

Annex A. To date, the scheme covers a total of 17 types of energy consuming products, a full list of which is at **Annex B.**

Energy Saving

5. Significant energy saving can be achieved if the community is willing to switch to more energy efficient household and office appliances. Products with good energy performance will produce substantial energy saving. 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 could save 480 kWh electricity (equivalent to about \$430) per year¹ when compared to a “grade 5” room cooler with the same cooling capacity.
- (b) For a family of four, which uses various types of common electrical household appliances² with the best energy efficiency characteristics, the total annual saving could amount to \$2,150 when compared to the energy consumption of appliances with “grade 5” energy labels.

PROPOSED MANDATORY ENERGY EFFICIENCY LABELLING SCHEME

6. Under the existing voluntary scheme, the market penetration rate of the scheme varies among products. Room coolers and refrigerators are the two products having the highest market penetration rates of 80% and 70% respectively. However, the market penetration rates of some other products, such as television sets and washing machines, remain at around 10%.

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.

7. Whilst we will continue to promote the voluntary scheme to the public and the trades, we do not anticipate significant improvement in the market penetration rates for these products under the existing voluntary system. 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 on the importance of using energy efficient products;
- (b) to facilitate consumers to choose energy efficient products;
- (c) to provide additional incentive to product suppliers to market more energy-efficient products; and
- (d) to promote energy saving.

8. The useful role of a mandatory labelling scheme in energy efficiency and conservation and achieving sustainable development is well recognized internationally. As part of their long-term energy efficiency and conservation programme, over 40 overseas countries, including the United States, European Union, Australia, New Zealand, Canada and South Korea, have introduced mandatory EELS on various types of products (please see **Annex C**).

9. We propose that under the mandatory scheme, energy labels in prescribed formats indicating the energy efficiency grades of the concerned models are required to be shown on specified products to inform consumers of the energy performance of the products. The scheme will also help drive out products with poor energy performance in the long run.

10. The inclusion of energy consuming products into the mandatory EELS will be implemented in phases. We suggest to include 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 more than 70% of the electricity consumption in the residential sector. They are also the products that have been included since the early stages of the voluntary EELS and have the highest market penetration rates. Coupled with a suitable grace period, we believe the trades will be able to adapt to 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. In line with the existing voluntary EELS, suppliers of products covered by the mandatory EELS will be required to register the product models with EMSD prior to supplying them to the local market. Suppliers will be required to submit relevant energy performance information of the products for registration. A registration fee to recover the administration cost of vetting and approval of the submission will be levied. We will first 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 considering whether the mandatory labelling scheme should be expanded to other products.

12. We estimate that with the implementation of the proposed mandatory EELS for the three specified products, an additional electricity saving of 150 GWh per year could be achieved. This amount is equivalent to the annual electricity consumption of 105 000 units of room coolers³, or a monetary saving of \$135 million in electricity bill per year. It also corresponds to an annual reduction of carbon dioxide emission of 105 000 tonnes.

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.

WAY FORWARD

13. We plan to embark on a three-month public consultation exercise in end July 2005 on the proposed mandatory EELS. During the public consultation period, we will consult stakeholders and expect to draw more ideas and practical implementation proposals from consumers, suppliers and manufacturers. We will report to the Environmental Affairs Panel the outcome of our public consultation exercise.

14. Members are invited to note the proposal as set out in paragraphs 6-13 of the paper.

Environmental Protection Department
June 2005

Description and Samples of Energy Labels under the Voluntary Energy Efficiency Labelling System

“Grading Type” energy label

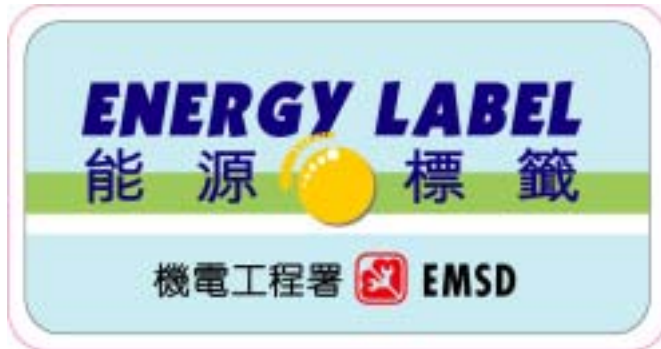
The “Grading Type” energy label classifies the energy performance of a product type into five grades. A product with a “grade 1” label means that it is the most energy efficient in the market. Whilst a “grade 3” label signifies the product itself is in the average class in respect of energy efficiency,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

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24小時 <small>Actual consumption depends on where the appliance is located and how it is used. Based on 1200 hrs/yr operation. 實際耗電量視乎冷氣機的位置及使用方法。預設值每年耗電量為1200小時。</small>	1200
Energy Efficiency Grade* 能源效益級別 <small>Among the five grades, Grade 1 is the most energy efficient. 在五級中，第一級最為省電。</small>	1
Room Cooler Category* 冷氣機類別 Cooling Capacity (kW) 製冷量 Refrigerant 製冷劑	1 2.5 HFC 123
EEL Registration Number 能源標籤登記號碼	C 96-0001
<small>* The data are provided according to the Hong Kong Energy Efficiency Labeling 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.</small>	
<small>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。</small>	
機電工程署 EMSD 	

Sample of “Grading Type” energy label

“Recognition Type” energy label

The “Recognition Type” energy label is used to distinguish or recognize the products that have met certain level of energy efficiency and performance requirement.



Sample of “Recognition Type” energy label

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

Examples of Electric Appliances Regulated under Mandatory EELS 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

SUMMARY OF WRITTEN SUBMISSION

We have carefully examined all the submissions received and views collected during the public consultation. Out of the 37 written submissions, majority (26), including trade associations, green groups, professional and educational institution, Consumer Council, power utility, product suppliers, expressed support to the mandatory EELS and agreed that the scheme is in the correct direction for achieving the efficient use of energy. While nine submissions did not explicitly indicate their overall views on the proposal, most of them offered specific comments for the smooth implementation of the mandatory scheme. One submission (an individual) disagreed with the proposed mandatory EELS and another (equipment supplier) noted that the mandatory scheme should be not be implemented.

2. The specific comments on various aspects of the proposed mandatory EELS are summarized as follows:

A. Coverage of Products

(18 submissions expressed views on this issue.)

- Five submissions including green groups, a professional institution, Consumer Council and a product supplier agreed to the selection of the three specified products (i.e. air conditioners, refrigerators and compact fluorescent lamps) for inclusion in the initial phase of the mandatory EELS.
- Having no objection to regulating the three specified products, eight submissions (mainly the trade associations, product suppliers and individuals) suggested that in order to minimize the impact to the trade, the technical scope (e.g. cooling capacity, volume capacity, mounting designs etc) of air conditioners and refrigerators should be confined to ranges/types that are widely used in households and should exclude those with small sale volume.

- Two submissions (a green group and an educational institution) suggested that more products should be considered for inclusion in the mandatory EELS.
- One submission (an individual) considered that compact fluorescent lamps should not be covered by the mandatory EELS. Another (an equipment supplier) queried on the necessity to include the three specified products into mandatory EELS in view of their high penetration in the voluntary EELS.
- One submission (a testing laboratory) suggested that clear definitions of the three specified products should be stated.

B. Product Registration

(18 submissions expressed views on this issue.)

- Nine submissions including trade associations, product suppliers and individuals considered that the product registration should be free of charge. One submission (a trade association) noted that the level of registration fee should be reasonable and affordable. Another (a professional institution) considered it reasonable for the Administration to charge a registration fee to recover the administrative cost.
- For the product information updating period, five submissions including green groups, professional institution, Consumer Council and educational institution considered that the proposed updating period of five years should be shortened to reflect the rapidly changing market.
- One submission agreed to the registration procedures but another (an equipment supplier) did not support the requirement of product registration.

C. Testing Requirement

(Nine submissions expressed views on this issue.)

- Six submissions (including an educational institution, a

professional institution, a green group and a testing laboratory) noted that the energy efficiency information should be supported by results of tests which are conducted by qualified laboratories.

- Two submissions (product suppliers) commented that self declaration or test reports issued by manufacturers should be allowed.
- One submission (Consumer Council) suggested the testing criteria should be reviewed regularly.

D. Labelling Requirement

(10 submissions expressed views on this issue.)

- Three submissions including green groups and individual considered that more information (e.g. energy saving amount and product description etc) should be provided on the energy labels.
- Three submissions (mainly professional institutions) considered that the format of the mandatory labels should be clearly distinguishable from the voluntary labels.
- Two submissions considered that more stringent grading criteria should be set for mandatory EELS to reflect the models with top energy efficiency performance. Another submission proposed benchmarking to similar products in other countries when establishing the grading of energy efficiency performance.
- One submission (a product supplier) considered that retailers should be allowed to provide energy labels, and another (an equipment supplier) preferred putting energy performance information in product manuals instead of labelling the products.

E. Transitional Arrangement

(15 submissions expressed views on this issue.)

- 15 submissions including trade associations, suppliers, professional institution, testing laboratory and individuals considered that the proposed one-year grace period is not long enough for the trade to make preparations.
- Eight submissions including suppliers, a trade association and individuals noted that the old stocks should be allowed to be sold out after the grace period.

F. Enforcement

(10 submissions expressed views on this issue.)

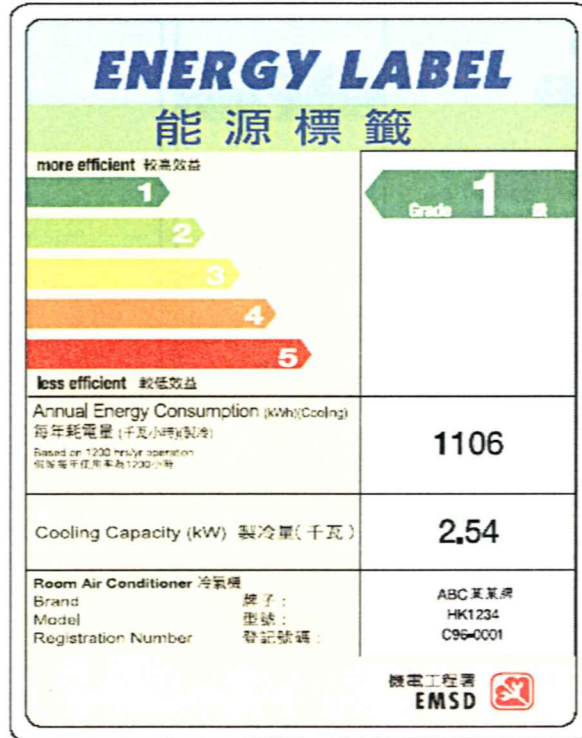
- Seven submissions including a professional institution, green groups, a trade association and individuals expressed concern on the adequacy of enforcement of the mandatory EELS. Five of them suggested that to upkeep the credibility of the scheme, regular product sample tests should be conducted and appropriate penalties should be imposed for offences.
- Two submissions expressed concern on the obligation of consumers under the mandatory EELS, while another submission agreed with the enforcement duties of EMSD.

G. Other Comments


- Six submissions including Consumer Council, a trade association, a professional institution and individuals suggested that the mandatory EELS should be widely publicized to allow consumers to understand its benefits and make use of the energy label as a guide to choose energy-efficient products.
- Four submissions including educational institution, professional institution, green group and trade association suggested that the financial burden incurred to the suppliers should be minimized

so as to avoid increase in the product price. Six submissions including a product supplier and individuals considered that the mandatory scheme may lead to increase in the product price and products of small sale volume may be driven out of the market, resulting less choices for consumers. On the other hand, one submission (an individual) considered that in view of the potential benefits, it is worth implementing the mandatory EELS even though the product cost may increase.

Energy Label for Room Air Conditioner



Energy Label for Refrigerator

ENERGY LABEL	
能源標籤	
<p>more efficient 較高效益</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p> <p>less efficient 較低效益</p>	<p>Grade 2</p>
Annual Energy Consumption (kWh) 每年耗電量 (千瓦小時)	500
Fresh Food Volume (litre) 保鮮格容積 (公升)	175
Frozen Food Volume (litre) 冰格容積 (公升)	50
<p>Refrigerating Appliance 雪櫃</p> <p>Brand 牌子: ABC 某某牌</p> <p>Model 型號: HK001</p> <p>Registration Number 登記號碼: R96-1234</p>	
<p>機電工程署 EMSD </p>	

Energy Labels for Compact Fluorescent Lamps

