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# **The Hong Kong Voluntary Energy Efficiency Labelling Scheme for LCD Monitors**

January 2010

Energy Efficiency  **EMSD**

Electrical and Mechanical Services Department

3 Kai Shing Street, Kowloon, Hong Kong

Homepage: <http://www.emsd.gov.hk>

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## **1. Purpose**

This set of document is intended to give a general description on the introduction of the Hong Kong Voluntary Energy Efficiency Labelling Scheme (EELS) for Liquid Crystal Display (LCD) Monitors.

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## **2. Background**

### **The Nature of Energy Efficiency Labelling Scheme**

- 2.1 The EELS is an energy conservation initiative that the Government of the Hong Kong Special Administrative Region (HKSAR) has adopted. Under the scheme, some common types of household appliances and office equipment will incorporate an energy label that serves to inform consumers of the product's energy consumption and efficiency. Consumers should then be able to take those factors into account in making their purchasing decision.

### **Objectives of Energy Efficiency Labelling Scheme**

- 2.2 The concept of EELS has been developed and implemented in several forms and in different stages of development. In some countries, it is a compulsory requirement for certain kinds of electrical appliances to be provided with an energy label before they can be put on the market. The labelling requirements may apply to equipment such as household refrigerators, freezers, washing machines, room coolers, clothes dryers, compact fluorescent lamps, storage water heaters, etc. The EELS generally aims to achieve the following:
- greater public awareness of energy conservation and environmental improvement needs;
  - provision of readily available, pre-purchase information on energy consumption and efficiency data, where applicable, to enable ordinary consumers to select more energy efficient products;
  - stimulation to the manufacturers/market for phasing out less energy efficient models; and
  - actual energy savings and environmental improvements, etc.

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- 2.3 Hong Kong also aims at achieving the above objectives and the Hong Kong Voluntary EELS now covers eighteen types of household appliances and office equipment. Ten types of which are electrical appliances and seven types of office equipment. There is also one type of gas appliance for domestic gas instantaneous water heaters. The scope of EELS has also been extended to cover petrol passenger cars.
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### **3. Scope**

- 3.1 The scheme will only apply to the manufacturers and importers (local agents, retailers and the related parties) who have participated in the voluntary scheme.
- 3.2 The scheme commenced on 22 December 2003. The revision of the scheme has been implemented from January 2010 and will expire on 31 December 2012 when re-registration is necessary.
- 3.3 The scope of application covers all *new* registered appliances to be sold in Hong Kong with effect from the date that is declared by the participant but does not cover second-hand products, products already in use, under trans-shipment or export, etc.
- 3.4 The scheme will be operated as a 'Recognition Type' labelling system. All appliances will be recognised and registered provided that they can meet certain energy efficiency and performance requirements as stipulated in the scheme.
- 3.5 The provisions of this scheme shall apply to standard LCD monitors that are designed for use with computers. The monitor must be capable of being powered from either a wall outlet or a battery unit that is sold with an AC adaptor. LCD monitors with a tuner/receiver may qualify under this scheme as long as they are marketed and sold to consumers as computer monitors (i.e. focusing on computer monitor as the primary function) or as dual functions computer monitors and televisions.
- 3.6 This labelling scheme does not cover products with a tuner/receiver and with computer connection capability that are marketed and sold as televisions.

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## 4. Definitions

Unless otherwise specified, the following definitions shall apply throughout this document:

*Authority* means the Electrical & Mechanical Services Department, the Government of the Hong Kong Special Administrative Region (HKSAR).

*Director* means the Director of Electrical & Mechanical Services Department, the Government of the Hong Kong Special Administrative Region.

*disconnect* means the product that has been unplugged from the mains and therefore is disconnected from all external power sources.

*Government* means the Government of the Hong Kong Special Administrative Region.

*inspecting officer* means the officer authorized by the Director to carry out inspection on appliances.

*IEC* means the International Electrotechnical Commission.

*ISO* means the International Organization for Standardization

*label* means the energy label as described in Section 7 of this document.

*LCD monitor* means a commercially available electronic product with a display screen. The associated electronic is encased in a single housing that is capable of displaying output information from a computer via one or more inputs. The monitor relies upon a liquid crystal display (LCD) device.

*off mode/  
standby power* means the lowest power-consuming state of the monitor. Off mode is defined as the power being used when the product is connected to a power source, produces no images, and is

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	waiting to be switched to “on” mode by a direct signal from a user (e.g., user pushes power switch).
<i>on mode/active power</i>	means the product that is connected to a power source and produces an image. The power requirement in this mode is typically greater than the power requirement in sleep and off modes.
<i>participant</i>	means the manufacturers, importers or the retailers of appliance participating in the scheme.
<i>rated frequency</i>	means the frequency marked on the LCD monitor.
<i>rated voltage</i>	means the voltage marked on the LCD monitor.
<i>rated wattage</i>	means the wattage marked on the LCD monitor.
<i>Recognized laboratory</i>	means a laboratory that complies with the requirements as stated in Section 8 of this document and is acceptable to the Authority for carrying out tests and issuing test reports on LCD monitors.
<i>scheme</i>	means the Hong Kong Voluntary Energy Efficiency Labelling Scheme for LCD monitors.
<i>sleep mode/low power</i>	means the reduced power state that the monitor model enters after receiving instructions from a computer or via other functions. A blank screen and reduction in power consumption characterize this mode. The monitor returns to “on” mode upon sensing a request from a user.

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## 5. Technical Standards

### Energy Efficiency Specifications for Qualifying Products

- 5.1 Any LCD monitors that are marketed to the consumer as such and meet the definition in Section 3.5 are eligible for the application of EELS for LCD monitors. As mentioned in Section 3.6, this scheme does not cover products with computer capability that are marketed and sold as televisions.
- 5.2 Only for those products that meet the following criteria may qualify to obtain the energy label.

### Effective Date

- 5.3 Phase I: The first phase of this specification, Phase I, commenced on 22 December 2003 and shall be terminated after 30 September 2007. Any formal application submitted within the Phase I period should meet the Phase I specification in order to qualify for this scheme.
- 5.4 Phase II: The second phase of this specification, Phase II, shall commence on 1 October 2007. Any formal application submitted in the Phase II should meet the Phase II specification in order to qualify for this scheme.

### On Mode/Active Power

- 5.5 Phase I: The allowed power consumption for monitor models must not exceed the following maximum active power consumption equation:  $Y = 30 + 20X$ . Y is expressed in watts and rounded up to the nearest whole number and X is the number of megapixels in decimal form (e.g., 1,920,000 pixels = 1.92 megapixels). The active power consumption of all monitors when displaying the pattern specified in clause 6.8 must not exceed the value calculated from the above equation. For example, the maximum power consumption for a monitor with 1800 x 1440 resolution would be:  $30 + 20(2.592) = 81.84$  or 82 watts when rounded up.
- 5.6 Phase II: The allowed power consumption for monitor models must not exceed the following maximum active power consumption equation: If  $X < 1$  megapixel, then  $Y = 23$ ; if  $X > 1$  megapixel, then  $Y = 28X$ . Y is expressed in watts and rounded up to the nearest whole number and X is the number of megapixels in decimal form (e.g., 1,920,000 pixels = 1.92 megapixels). For example, the maximum power consumption

for a computer monitor with 1024 x 768 resolution (or .78 megapixels) would be  $Y = 23$  watts and for a computer monitor with 1600 x 1200 resolution would be  $28(1.92) = 53.76$  or 54 watts when rounded up.

- 5.7 Under Phase I and II, allowed power consumption for monitors with various standard resolutions are provided below in Table 1.

**Table 1: Sample On Mode Maximum Power Levels**

Resolution	Total Pixels	Maximum Power Use (watts) Phase I (effective from 22/12/2003)	Maximum Power Use (watts) Phase II (effective from 01/10/2007)
640 x 480	307,200	37	23
800 x 600	480,000	40	23
1024 x 768	786,432	46	23
1080 x 768	983,040	50	23
1280 x 1024	1,310,720	57	37
1600 x 1024	1,638,400	63	46
1600 x 1200	1,920,000	69	54
1920 x 1200	2,304,000	76	65
1800 x 1440	2,592,000	82	73
2048 x 1440	2,949,120	89	83
2048 x 1536	3,145,728	93	88

- 5.8 Sleep and Off Modes: Maximum power consumption levels for sleep and off modes are provided in Table 2. Monitors capable of multiple sleep modes (i.e., sleep and deep sleep) shall meet the sleep mode requirement below in all such modes.

- 5.9 Sleep Mode Exception: The computer monitors that have the capability to proceed automatically from On Mode/Active Power to an Off Mode/Standby Power of 2 watts or less in Phase I and 1 watt or less in Phase 2 comply with these energy consumption requirements. The computer monitor's Off Mode/Standby Power must be activated within 30 minutes of user inactivity. Upon resumption of user activity (e.g., user moves

the mouse or presses a key on the keyboard), the computer monitor must return to full operational capability. In other words, a Sleep Mode is not necessary if the computer monitor can proceed from On Mode/Active Power to Off Mode/Standby Power and meet the requirements in the Off Mode/Standby Power.

**Table 2: Energy-Efficiency Criteria for Sleep and Off Modes**

	Sleep Mode	Sleep Mode Default Time	Off Mode/Standby Power Default Time (with sleep mode exception)	Off Mode-
Phase I	≤ 4 watts	≤ 15 minutes		≤ 2 watts
Phase II	≤ 2 watts	≤ 30 minutes	≤ 30 minutes	≤ 1 watt

- 5.10 Sleep Mode Enabling: Energy savings from the computer monitor’s Sleep Mode can only be achieved if this power-saving mode is enabled. Further, the computer shall activate the computer monitor’s Sleep Mode within 30 minutes. **If a computer monitor has the capability to proceed automatically from On Mode/Active Power to Off Mode/Standby Power, then, consistent with the Sleep Mode requirements, the computer monitor’s Off Mode/Standby Power must be activated within 30 minutes of user inactivity.**
- 5.11 Brightness (Luminance): Qualifying monitors shall provide a minimum brightness or luminance of 100 nits (candelas/square meter) with a full screen, pure white test image at the manufacturer default settings for brightness and contrast. These are the settings at which the monitor operates when first connected to a power source, before any user adjustment.
- 5.12 Contrast Ratio: Monitors shall provide a minimum contrast ratio of 200:1. Contrast ratio shall be measured according to VESA Standard. Display Specifications and Test Procedures, Version 1.0, Rev. 1.0, 3 October 1994, Section 6.3, which allows adjustment by the testing engineer to the particular combination of contrast and brightness that yields maximum contrast ratio.
- 5.13 Defective Pixels: LCD monitors with discrete, individual pixels shall meet ISO 13406-2 Class I or II, having no more than five sub-pixel faults per million sub-pixels.

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## Safety Requirements

- 5.14 All materials and workmanship of LCD monitors are also needed to comply with IEC 60950, "Information Technology Equipment – Safety" and/or the Electrical Products (Safety) Regulation of the HKSAR, where applicable.

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## 6. Test Methodology & Standards

### General

- 6.1 All test standards and specifications specified in this document are only related to checking compliance with the energy efficiency and general performance requirements. It is not the intention of this document to detail out the test standards and requirements for checking compliance with the Electrical Products (Safety) Regulation of the HKSAR. The participant should conduct appropriate tests, where necessary, in addition to those specified in this document in order to obtain Certificates of Safety Compliance for his appliances.

### Compliance with Safety Requirements

- 6.2 The testing standards for checking compliance with the safety requirements are based on IEC 60950, "Information Technology Equipment – Safety". For detailed requirements and procedural descriptions one should refer to the respective standard.
- 6.3 To the extent that definitions in the IEC standards do not conflict with the definitions of this document, the definitions in the aforesaid standards shall be included.

### Test Conditions

- 6.4 For all LCD monitors, the test conditions shall be as follows:

Supply Voltage	220 ( $\pm$ 1%) Volts AC, 50 Hz ( $\pm$ 0.5Hz)
Total Harmonic Distortion (Voltage)	< 2% THD
Ambient Temperature:	20 °C $\pm$ 5°C
Relative Humidity	30% - 80%
Line Impedance	< 0.25 ohm

- 6.5 Dark Room Conditions: When performing light measurements, the monitor shall be located in a dark room condition. The monitor screen illuminance measurement (E), when screen is switched off, must be 1.0 Lux or less. Measurements should be made at a point perpendicular to the center of the screen using a Light Measuring Device (LMD) with the power to the monitor off.

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- 6.6 Color Controls and Peripherals: All color controls (hue, saturation, gamma, etc.) shall be placed at their factory default settings. No external devices shall be connected to any included USB hubs or ports. Any built-in speakers, TV tuners, etc. may be placed in their minimum power configuration, as adjustable by the user, to minimize power use not associated with the display itself. Circuit removal or other actions not under user control may not be taken to minimize power use.
- 6.7 Power Measurement Test Conditions: For LCDs and other fixed pixel technologies, pixel format shall be set to the native level. LCD refresh rate shall be set to 50 Hz, unless a different refresh rate is specifically recommended by the manufacturer, in which case that rate shall be used.
- 6.8 Power Measurement Protocols: Monitor power consumption shall be measured in watts with an imposed test pattern – a full white screen. Warm-up time shall be a minimum of a 20-minute period. A true RMS power meter with a crest factor of at least five shall be used to measure the power use of each of five or more randomly chosen units from the production line at 220 Volts AC at 50 Hz. Measurements shall be taken after wattage values are stable over a 3-minute period. Measurements are considered stable if the wattage reading does not vary more than 1% over the 3-minute period. Calibrated measuring equipment shall be used with an accurate measurement to one tenth of a watt or better.

### Testing Methodology

- 6.9 Following are the test procedures for measuring the true power requirements of the test unit in On Mode/Active Power, Sleep Mode/Low Power, and Off Mode/Standby Power. As regards monitor tests, the analogy interface is required to use, except in those cases where one is not provided (i.e., digital interface monitors, which are defined as only having a digital interface for purposes of this test method). <sup>1</sup>For digital interface monitors, please see Footnote 1 for voltage information and then follow the test method below using a digital signal generator.

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<sup>1</sup> *Corresponding voltage values for digital only interface monitors that correspond to the brightness of the image (0 to 0.7 volts) are:  
0 volts (black) = a setting of 0  
0.1 volts (darkest shade of gray analog) = 36 digital gray  
0.7 volts (full white analog) = 255 digital gray  
Please note that future digital interface specifications may widen this range, but in all cases, 0 volts shall correspond to black and the maximum value shall correspond to white, with 0.1 volts corresponding to one-seventh of the maximum value*

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6.10 The measurement procedures for the “On Mode/Active Power” operation are as follows:

- (a) Connect the test sample to the outlet or power source and test equipment. For monitors shipped with an external power supply, the external power supply (as opposed to a reference power supply) must be used in the test.
- (b) Power on all test equipment and properly adjust power source voltage and frequency.
- (c) Check for normal operation of the test unit and leave all customer adjustments set to factory default settings.
- (d) Bring the test unit into On Mode/Active Power either by using the remote control device or by using the ON/OFF switch on the test unit cabinet. Allow the unit under test to reach operating temperature (approximately 20 minutes).
- (e) Set the proper display mode. Refer to Section 6.7, Power Measurement Test Conditions.
- (f) Provide dark room conditions. See Sections 6.5, Dark Room Conditions.
- (h) Either verify that the wall outlet power is within specifications or adjust the AC power source output as described in Section 6.4 (ex. 220Vrms  $\pm$  1%, 50Hz  $\pm$  0.5Hz).
- (i) Set the power meter current range. The full-scale value selected multiplied by the crest factor rating ( $I_{\text{peak}}/I_{\text{rms}}$ ) of the meter must be greater than the peak current reading from the oscilloscope.
- (j) Allow the readings on the power meter to stabilize and then take the true power reading in watts from the power meter. Measurements are considered stable if the wattage reading does not vary more than 1% over the 3-minute period. See Section 6.8, Power Measurement Protocols.
- (k) Power consumption shall be recorded as well as total pixel format (horizontal x vertical pixels displayed) to calculate pixels/watt.
- (l) Record the test conditions and test data.

6.11 The measurement procedures for the “Sleep Mode/Low Power (Power Switch On, No Video Signal)” operation are as follows:

- (a) At the conclusion of the On Mode/Active Power test, initiate the monitor Sleep Mode/Low Power. The method of adjustment shall be documented along with the sequence of events required to reach the Sleep Mode/Low Power. Power on all test equipment and properly adjust operation range.

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- (b) Allow the monitor to remain in Sleep Mode/Low Power until stable power readings are measured. Measurements are considered stable if the wattage reading does not vary more than 1% over the 3-minute period.
  - (c) Record the test conditions and test data. The measurement time shall be sufficiently long to measure the correct average value. If the device has different Sleep Modes that can be manually selected, the measurement should be taken with the device in the most energy consumptive of those modes. If the modes are cycled through automatically, the measurement time should be long enough to obtain a true average that includes all modes.

6.12 The measurement procedures for the “Off Mode/Standby Power (Power Switch Off)” operation are as follows:

- (a) At the conclusion of the Sleep Mode/Low Power test, initiate the monitor Off Mode/Standby Power. The method of adjustment shall be documented along with the sequence of events required to reach the Off Mode/Standby Power. Power on all test equipment and properly adjust operation range.
- (b) Allow the monitor to remain in Off Mode/Standby Power until stable power readings are measured. Measurements are considered stable if the wattage reading does not vary more than 1% over the 3-minute period.
- (c) Record the test conditions and test data. The measurement time shall be sufficiently long to measure the correct average

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## **7. Energy Label**

### **General**

- 7.1 Energy labels are classified into the following two types:
- (a) Verification label; and
  - (b) Information label.
- 7.2 A verification label indicates the appliance meets the energy performance standards as required by the scheme. It is a compulsory requirement for participant to affix this label to his registered appliances.
- 7.3 An information label contains information to guide the general public to contact the Authority regarding enquires about the scheme. The affixation of this label to registered appliances is optional.

### **Label Location**

- 7.4 The label should be self-adhesive and affixed to the appliance at a prominent location. The participant should ensure that the verification label appears on every registered appliance on display or sale and should be easily visible.

### **Colour Scheme & Dimensions**

- 7.5 The labels should be printed on material with white-coloured background and should have colour schemes and dimensions as shown in Annex 1. It should be printed in English and in Chinese.

### **Paper Quality**

- 7.6 If the label is to be affixed on a LCD monitor for display, the paper used for the label should be durable and possess good wear and tear characteristics.

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## **8. Testing Facilities, Laboratories and Accreditation Bodies**

- 8.1 The testing is carried out either by independent test institutes or by the manufacturers or by importers themselves at their own test facilities. The Authority will accept the results and certificates issued by the test laboratory, which fulfills one of the following criteria as specified in Clause 8.2, 8.3 or 8.4.
- 8.2 The laboratory is accredited by the Hong Kong Accreditation Service (HKAS) for the relevant test under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) or a scheme for which HKAS has concluded a mutual recognition agreement, and the results are issued in a test report or certificate bearing the accreditation mark (see Note).
- 8.3 The Authority will also consider the following arrangements:
- (a) Self-certification by original manufacturers that the operations of their in-house laboratories satisfy the requirements of ISO/IEC 17025; and
  - (b) The manufacturers are currently operating according to a recognized international quality system (such as ISO 9001); and
  - (c) The manufacturer's in-house laboratories had been successful in carrying out tests on LCD monitors and where these tests had been evaluated and certified by internationally recognised third party certification organisations.
- 8.4 The Authority will also consider test results issued by a laboratory which is accredited by HKAS or is accredited by an accreditation body which has concluded a mutual recognition arrangement with HKAS for testing laboratories for laboratory testing of electrical and mechanical appliances other than testing based on the technical standards stipulated in this scheme; if the laboratory can demonstrate their capability of carrying out tests on LCD monitors in accordance with technical methods.

### **Laboratory Accreditation**

- 8.5 The Government takes cognizance of the need to ensure acceptable and compatible quality standards of testing laboratories, and considers that they need to be accredited by some independent bodies.

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- 8.6 The criteria of accreditation should be based on ISO/IEC 17025 and accreditation bodies should operate in accordance with ISO/IEC 17011.
- 8.7 The Authority will recognize accreditation granted by the HOKLAS and by overseas accreditation bodies which have concluded mutual recognition arrangements with HKAS for accreditation of testing laboratories. The Authority will consider accreditation by other bodies on a case-by-case basis.

### Energy Efficiency Verification Service

- 8.8 An increasing number of countries now accept, as proof of product conformance, energy efficiency verification services provided by third-party organisation that has been accredited as a certification organisation. In accordance with this trend, the Authority will consider seriously test results that have been evaluated and verified against the energy performance standards of the scheme by reputable third-party certification organisations.

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**Note:** *HKAS has concluded mutual recognition arrangements with **fifty-eight** overseas accreditation bodies for testing laboratory accreditation, namely, **UKAS** of the United Kingdom, **NATA** of Australia, **AZLA**, **NVLAP**, **IAS** and **L-A-B** of the United States, **IANZ** of New Zealand, **RvA** of Netherlands, **SAC** of Singapore, **BMwa** of Austria, **BELAC** of Belgium, **DANAK** of Denmark, **FINAS** of Finland, **COFRAC** of France, **DAP**, **DACH** and **TAG** of Germany, **INAB** of Ireland, **ACCREDIA** of Italy; **NA** of Norway,, **ENAC** of Spain, **SWEDAC** of Sweden, **SAS** of Switzerland, **CNAS** of People's Republic of China, **TAF** of (Taiwan,China), **CAI** of Czech Republic, **INMETRO** of Brazil, **IAJapan**, **JAB** and **VLAC** of Japan, **KOLAS** of Korea, **SANAS** of South Africa, **SCC** of Canada, **NABL** of India, **BoA** of Viet Nam, **LA** of Lithuania, **SNAS** of Slovakia, **KAN** of Indonesia, **ISRAC** of Israel, **DSM** of Malaysia, **ema** of Mexico, **PNAC** of Pakistan, **PAO** of Philippines, **NSC-ONAC**, **DSS** and **DMSc** of Thailand, **TUNAC** of Tunisia, **TURKAK** of Turkey, **OAA** of Argentina, **ONARC** of Cuba, **NLAB** of Egypt, **EAK** of Estonia, **ESYD** of Greece, **LATAK** of Latvia, **PCA** of Poland, **SA** of Slovenia, etc. The list of mutual recognition arrangement partners may change from time to time and the up-to-date list is available from the HKAS website of [www.info.gov.hk/itc/hkas](http://www.info.gov.hk/itc/hkas). Partners to these arrangements recognise the accreditations granted by one another as equivalent.*

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## **9. Registration and Participation**

### **Registration Procedures**

9.1 All manufacturers, importers and the other parties involved in the LCD monitors business are welcomed and encouraged to participate in the scheme. For some known manufacturers and importers, invitation letters will be issued to them. However, any party may submit their applications for registration no matter whether they are invited or not.

9.2 The proforma letter of invitation is shown in Annex 2.

9.3 Applicant should submit formal application to

*Chief Engineer /Energy Efficiency A  
Energy Efficiency Office  
Electrical & Mechanical Services Department  
3 Kai Shing Street, Kowloon  
Hong Kong*

by means of an application letter through mail, facsimile or electronic mail. In order to ensure effective implementation of the scheme, the applicant must be committed to fully comply with the duties, responsibilities and obligations set out in this scheme. The proforma letter of application as shown in Annex 3 details the aforesaid obligations and should be used for application. To facilitate the application process, the application form can be downloaded from EMSD website or on-line application can be used.

### **Information/Documents to be Submitted for Registration**

9.4 Each make and model of a LCD monitor participating in the scheme should be provided with a test report issued by a recognized laboratory. The test report should contain energy efficiency (capacity) test and performance test results. The details of the technical information to be submitted together with the application are listed as follows:-

(a) Information on the company:

Name, Address, Telephone number, Fax, e-mail address, Contact person, Importer, Distributor, etc.

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- (b) Products to apply for participating in the scheme:  
Names of products, types, brand names, models, countries of origin
- (c) Parties that will be responsible for making and fixing the Energy Labels;
- (d) Commencement date to affix energy labels on appliance  
Year\_\_\_\_\_, Month\_\_\_\_\_
- (e) Documentary proof that the LCD monitor(s) shall comply with  
IEC 60950, "Information Technology Equipment – Safety" and/or the Electrical Products (Safety) Regulation of the HKSAR, where applicable; and
- (f) Detailed test reports with LCD monitor shall provide at least the following relevant technical data for the appliance:
- Technical Specification;
  - On Mode/Active Power energy consumption and power rating;
  - Sleep Modes energy consumption and default time; and
  - Off Modes energy consumption and default time.
- (g) Miscellaneous Technical Information:  
Test results on brightness, contrast ratio and defective pixels should be provided or declared by manufacturer.

***Notes: Company's name and chop should be stamped on all the documents provided.***

The above information can also be found in Annex 4, information to be submitted to Energy Efficiency Office.

### **Acceptance of Registration**

- 9.5 On receipt of the application, the Authority will verify whether the LCD monitor under application meets the energy efficiency and performance requirements based on the submitted data. The accuracy of the submitted data, their inconsistencies and non-compliance will be dealt with in accordance with Section 11.
- 9.6 If the application is accepted, the participants will be notified of the result in writing within 17 working days. The participants will then be allowed to affix the energy label onto the 'registered' appliances. Both manufacturers and importers of the registered appliances should ensure that the energy labels are correctly printed and affixed on the appliances in accordance with Section 7. The performa letter of acceptance is shown in Annex 5.

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9.7 If the application is rejected, the notification letter as shown in Annex 6 will also be given in 17 working days.

9.8 The flow chart for registration is shown in Annex 7.

### **Participant's Duties, Responsibilities and Obligations**

9.9 The participant is obliged to:

- (a) submit application and information including test results in accordance with format and procedures set out in Sections 9.3 & 9.4;
- (b) conduct tests via recognized laboratories and to comply with the specified test methodology and classification scheme;
- (c) produce and affix energy labels at his own costs;
- (d) fully inform other sales agents in his distribution network once the particular make and model of an appliance is registered under the scheme;
- (e) allow random/ad-hoc inspection to be conducted by persons authorized by the Authority on registered appliance at his premises;
- (f) conduct re-test(s) at his own costs at some recognized laboratories, if non-compliance is found on the appliance. The result of re-test(s) shall reach the Authority within the prescribed period of time specified by the Authority;
- (g) inform the Authority of any change in the technical information and data that were previously submitted to the Authority together with the application letter;
- (h) accept the fact that if appliance fails to perform in accordance with the requirements as given in Sections 5 and 6 and this cannot be readily rectified, the Authority may order it be de-registered from the scheme; and
- (i) remove within three months all energy labels from appliances which had been de-registered from the scheme.

9.10 The details of the registered appliances will be kept in a register maintained by the Authority. The registration records will be regularly uploaded and maintained in the EMSD Internet for public and interested parties for access and information.

### **Termination**

9.11 Under circumstances of poor performance such as:

- (a) (repeated) failure to fulfill obligations set out under Section 9.9; or

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- (b) in any other case where the Director is of the opinion that registration of an appliance is contrary to the public interest.

The Authority may de-register an appliance from the scheme with immediate effect by giving the participant notice in writing. Once an appliance is de-registered, no one is allowed to fix an energy label on it. However, participant will normally be given a grace period of three months to remove all labels from the de-registered appliances.

De-registration may occur even when there is no legal action taken under either the Trade Description Ordinance (Cap. 362) or the Copyright Ordinance.

- 9.12 Participant who decides to discontinue participating in the scheme or to withdraw any registered model from the registered appliances list shall give at least three months' advance notice to the Authority.

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## **10. Legal Provisions**

- 10.1 This is a voluntary scheme. However, a participant who abuses the scheme by giving false information on a label may contravene provisions of the Trade Description Ordinance.
- 10.2 No one could take advantage of the scheme by using the label on his appliances without authorization of the Authority as that may constitute an infringement of copyright under the Copyright Ordinance.

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## **11. Compliance Monitoring and Inspection**

### **Purpose**

- 11.1 To uphold credibility of the scheme and to maintain continuous confidence of the consumers, compliance check on energy labels on those appliances participating in the scheme are needed. Also, to avoid the unsatisfactory situation that the non-

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participating parties taking advantage of the scheme by using unauthorized labels, we may also carry out suitable form of inspection on appliances which have not been registered under the scheme.

### **Scope**

- 11.2 The scope of inspection includes sample checking and testing the following items:
- (a) whether the energy label is in fact placed on the registered appliance;
  - (b) whether the energy label being displayed is of correct format in accordance with Section 7;
  - (c) whether energy label on the registered appliance is in a prominent position;
  - (d) whether unregistered appliances display unauthorized energy labels;
  - (e) whether the registered appliance complies with the energy efficiency and performance requirements; and
  - (f) whether the data submitted by the participants are correct by random re-testing.
- 11.3 The participants will be requested to take immediate remedial action and report the follow-up action taken if non-compliance is found on their appliances.
- 11.4 If a registered appliance carrying energy label is found not meeting the requirements specified in accordance with the technical standards stipulated in Section 5, the participant will also be requested to repeat the performance tests at his own costs by an agreed testing laboratory.
- 11.5 If non-compliance is confirmed and no remedial action is to be taken by the applicant, the Authority may order it be de-registered from the scheme. Failure to remove energy labels from the de-registered appliances after the Director has withheld his authorization for using such labels may contravene the relevant ordinances.

### **Inspecting Officers**

- 11.6 The Authority will authorize inspecting officers to carry out appliances compliance monitoring and inspection. The officers will carry proper identification cards that will be produced on request during their inspection operations. However, the officer will not inform the participants in advance of their intended inspection operation.

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- 11.7 It is the participants' duty to allow the inspecting officers to gain access to their premises to carry out inspection.

### **Mode of Inspection**

- 11.8 Inspections will be carried out on registered appliances under the scheme on random basis. Based on the record of the registration, random inspection programmes will be developed.
- 11.9 In addition to the random inspections, the inspecting officers will carry out ad-hoc inspections in response to complaints. The items to be inspected in such a case will depend upon the nature of complaint and may include all types of inspection as stated in Section 11.2.
- 11.10 Inspections will normally be carried out at the retail outlets and appliances showrooms. Where necessary, inspection will also be done at warehouses.
- 11.11 The inspection results will be properly recorded for future analysis as well as on evaluation of the effectiveness of the scheme.

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## **12. Complaints and Appeal**

- 12.1 The Authority will be responsible for dealing with complaints from participant and other parties against matters related to the scheme.

### **Complaints Handling Procedure**

- 12.2 The Director shall ensure that complaints are properly recorded and handled without undue delay.
- 12.3 The Authority shall carry out preliminary investigation on complaints and reply to the complainants within a reasonable time. For complaints that require site inspection and laboratory test, the complainant shall be notified through an interim reply.

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12.4 The Authority shall inform the complainant of the results or decisions made on the complaint.

### **Appeal Procedure**

12.5 A participant who is aggrieved by a decision or action taken by the Authority may appeal to the Director in writing stating the reason for the appeal.

12.6 The Director may decide to suspend the decision or action given by the Authority from the day on which the appeal is made until such appeal is disposed of, withdrawn or abandoned unless such suspension would, in the opinion of the Director, be contrary to public interest.

12.7 The Director may by notice to the appellant require that appellant to attend meeting with him or his representative and provide documents and give evidence relevant to the appeal.

12.8 The Director shall notify the appellant of his decision and reasons for it. The decision will be final and binding.

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## **13. Maintenance of Scheme**

13.1 To ensure that the scheme can continue to operate effectively and efficiently after its introduction, a proper system of maintenance is needed.

13.2 The maintenance system consists essentially of:

- (a) Continuous updating of the lists of participants in the scheme as follows:
  - (i) Registered appliances with details such as registration number in the scheme, date of registration or de-registration if it occurs, energy efficiency data, performance data, make, model, category and other related information; and

- 
- (ii) Registered importers, manufacturers, local agents etc. in the distribution network with details such as address, date of registration or de-registration if it occurs, etc.
  - (b) Periodic review of the test methodology, and procedures for application registration and compliance monitoring, etc. to bring them in line with the latest needs of the manufacturers, importers and retailers, etc.
  - (c) Continuous evaluation of the effectiveness of the scheme and assessment of what changes are necessary.

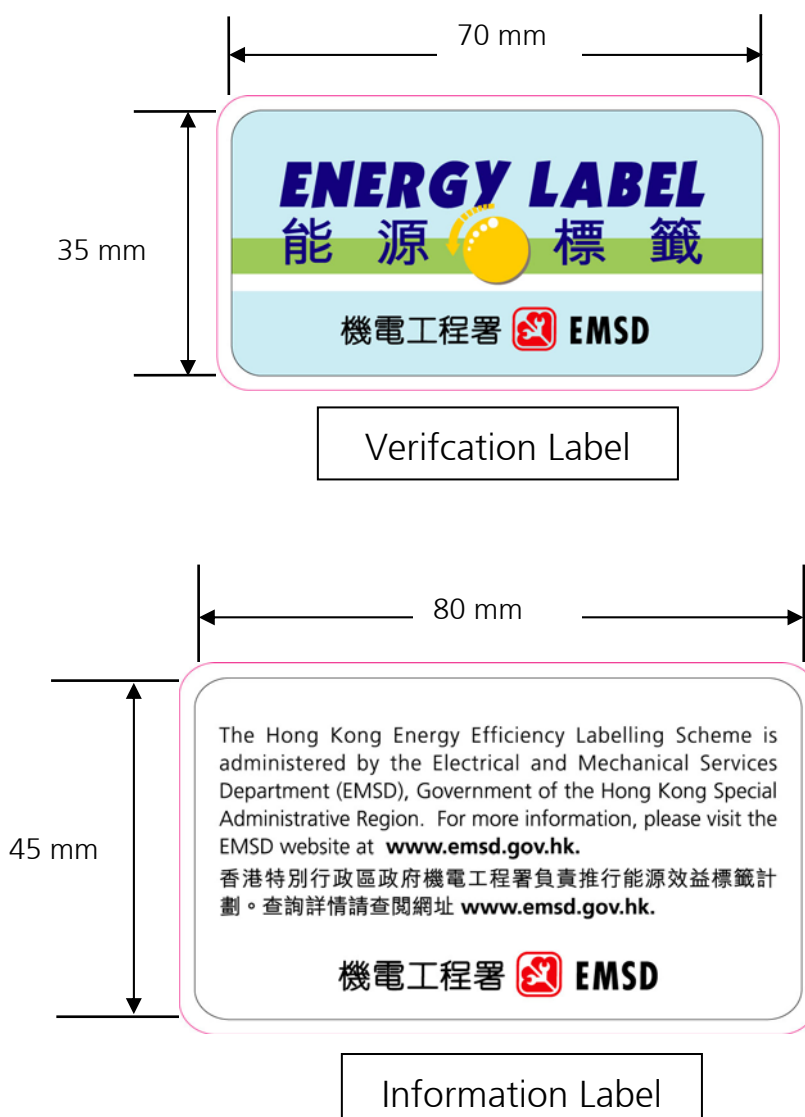
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## **14. Future Development**

- 14.1 It is hoped that following implementation of the scheme, the market will phase out models of low efficiency and public awareness of using energy efficient products will be improved.
- 14.2 As part of the Government's ongoing efforts to promote the efficient use and conservation of energy, it is opportune to introduce a mandatory EELS by the inclusion of energy consuming products in phases. In the initial phase, refrigerators, room coolers and compact fluorescent lamps are being considered in the proposed mandatory EELS.

# **ANNEXES**

## Energy Label Format



Soft copies of these labels can be obtained from Energy Efficiency Office, Electrical and Mechanical Services Department.

## **Proforma Letter of Invitation**

Our ref. EEO/LB/27  
Your ref.

Tel.  
Fax.

Date

[Name and Address of  
Manufacturers/Importers/Agents]

Dear Sir/Madam,

### **Invitation of Application for Registration to Participate in Voluntary Energy Efficiency Labelling Scheme for LCD Monitors**

Having gone through the necessary consultations and duly considered the views from various concerned parties, the government has decided to introduce a voluntary energy efficiency labelling scheme for LCD monitors to Hong Kong with effect from (\_\_\_\_\_). The details of the scheme<sup>①</sup> have been finalized and I enclose herewith a guide of the scheme for your reference.

Being one of the major LCD monitor manufacturers / importers / agents<sup>②</sup> in Hong Kong, you are invited to participate in the scheme so as to take part in promoting public awareness in energy conservation and environmental improvement to Hong Kong. If you are interested to participate in the scheme, please apply in accordance with the proforma letter of application (Annex 3) and submit details including technical information in accordance with the attached Annex 4 to the 'Chief Engineer / Energy Efficiency A' at the following address.

Energy Efficiency Office  
Electrical and Mechanical Services Department  
3 Kai Shing Street, Kowloon  
Hong Kong

Please be reminded to submit accurate test data to support your application. Under this Scheme, routine compliance monitoring and checking will be performed and if a registered LCD monitor is found to be non-compliant, we may consider deregistering the LCD monitors from the Scheme.

Should you need further clarification or information, you are most welcome to contact the undersigned or Mr. \_\_\_\_\_, at the telephone number \_\_\_\_\_.

Yours faithfully,

for Director of Electrical & Mechanical Services

(Note : <sup>①</sup> 'scheme' means 'The Voluntary Energy Efficiency Labelling Scheme for LCD Monitors '  
<sup>②</sup> delete as appropriate)

## **Proforma Letter of Application**

Your ref. EEO/LB/27  
Our ref.

Tel.

Date

Chief Engineer/Energy Efficiency A  
Electrical & Mechanical Services Department  
3 Kai Shing Street, Kowloon  
Hong Kong

Dear Sir/Madam,

### **Application for Registration to Participate in Voluntary Energy Efficiency Labelling Scheme for LCD Monitors**

Our company is the (manufacturer/importer/agent\*) of \_\_\_\_\_ in Hong Kong. We support the introduction the labelling scheme to Hong Kong and would like to be one of the participants in the scheme to promote energy efficiency.

I understand fully the obligations and duties stated in the scheme and will comply with all relevant requirements, in particular those specified below:

- i) conduct tests via recognized laboratories and to comply with the specified test standards;
- ii) produce and affix specified labels at my own costs;
- iii) allow random/ad-hoc inspection to be conducted by persons authorized by the issuing Authority on registered appliance at my premises;
- iv) conduct re-test(s) at my own costs at some recognized laboratories, if the results of inspection suggest inaccurate energy label information being displayed. The result of re-test(s) shall reach the Authority within the prescribed period of time specified by the Authority;
- v) inform the Authority of any change in the technical information and data that were previously submitted to the Authority together with the application letter; and
- vi) accept the fact that if appliance fails to perform in accordance with the required energy efficiency standards and performance as given in Section 5 and this cannot be readily rectified, the Authority may order it be de-registered from the scheme.

The details of information of those appliances which we intend to register with the Authority are shown in the attached document, (Annex 4) and are submitted herewith for your vetting.

Yours faithfully,

(Manufacturer/Importer/Agent's Name and Company Chop)

\_\_\_\_\_  
\* *delete as appropriate*

## **Information to be Submitted to Energy Efficiency Office**

1. Information on the company:  
Name, Address, Telephone number, Fax, E-mail Address, Contact person, Importer, Distributor, etc.
  
2. Product to apply for participating in the scheme:  
Name of products, types, make, model references, countries of origin
  
3. Parties will be responsible for making and fixing the Energy Label
  
4. Commencement date to affix Energy Labels on appliance  
Year \_\_\_\_\_, Month \_\_\_\_\_
  
5. Detailed test reports providing at least the following relevant technical data for the appliances:
  - (a) Technical Specification;
  - (b) On Mode/Active Power energy consumption and power rating;
  - (c) Sleep Modes energy consumption and default time; and
  - (d) Off Modes energy consumption and default time.
  
6. Documentary proof that the appliance(s) shall comply with the Electrical Products (Safety) Regulation of the Hong Kong Special Administrative Region.
  
7. Miscellaneous Technical Information:  
Test results on brightness, contrast ratio and defective pixels should be provided or declared by manufacturer.

*Note: Company's name and chop should be stamped on the all documents provided.  
All test reports submitted to the office should be certified true copy by appropriate organization.*

## **Proforma Letter of Acceptance**

Your ref.  
Our ref. EEO/LB/27

Tel:  
Fax:

Date

[  
Manufacturers/Importers/Agents

]

Dear Sir/Madam,

### **Acceptance of Application for Registration to Participate in Voluntary Energy Efficiency Labelling Scheme for LCD Monitors**

With reference to your letter of ref. \_\_\_\_\_ dated \_\_\_\_\_, I am pleased to inform you that your application to participate in the captioned scheme has been accepted.

I enclose herewith the registration certificates of LCD monitors registered. The registered LCD monitors are as follows :

<u>Brand/Make/Model</u>	<u>Registration No.</u>	<u>Effective date</u>
( _____ )	( _____ )	( _____ )

You are allowed to affix a specified energy label onto each and every appliance registered under the scheme. The contents of the energy label should be based on the information that you have provided in your application ref. \_\_\_\_\_ and dated \_\_\_\_\_.

Should you have any queries regarding the scheme, please contact this office.

Yours faithfully,

for Director of Electrical & Mechanical Services

## **Proforma Letter of Rejection**

Our ref. EEO/LB/27  
Your ref.

Tel.  
Fax.

Date

[  
Manufacturers/Importers/Agents

]

Dear Sir/Madam,

### **Rejection of Application for Registration to Participate in Voluntary Energy Efficiency Labelling Scheme for LCD Monitors**

With reference to your letter of application ref. \_\_\_\_\_ dated \_\_\_\_\_, I regret to inform you that your application for registration to participate in the scheme has not been accepted for the following reasons:-

1. \_\_\_\_\_ etc.

You are most welcome to submit new application again in future, when you have the necessary documents / information to support your application.

Yours faithfully,

for Director of Electrical & Mechanical Services

**Flow Chart for Registration**