
The Hong Kong Voluntary Energy Efficiency Labelling Scheme for

Light Emitting Diode (LED) Lamps November 2018

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

- 1.1 This set of document is intended to give a general description to the Hong Kong Voluntary Energy Efficiency Labelling Scheme for LED Lamps (the Scheme).

2. Background

- 2.1 The Energy Efficiency Labelling Scheme (EELS) is an energy conservation initiative that the Government of the Hong Kong Special Administrative Region (HKSAR) has adopted. Under the EELS, some common types of household electrical / gas 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.
- 2.2 The concept of EELS has been implemented in several forms and in different stages of development in many countries. The EELS generally aims to achieve:
- greater public awareness of energy conservation and environmental improvement needs;
 - provision of readily available, pre-purchase information on energy consumption and efficiency data to enable ordinary consumers to select more energy efficient products;
 - stimulation to the manufactures/market for phasing out less energy efficient models; and
 - motivation of the actual energy savings behaviours and environmental improvements.
- 2.3 Hong Kong aims at achieving the above objectives. At present, the Hong Kong Voluntary Energy Efficiency Labelling Scheme covers 22 types of household electrical / gas appliances and office equipment. Amongst them, 13 types are electrical appliances, 7 types are office equipment, and 2 types are gas appliances.

3. Scope

- 3.1 The Scheme will only apply to the manufacturers and importers (i.e. local agents, retailers and the related parties) of LED Lamps who are interested to or have participated in the Scheme.
- 3.2 The Scheme commenced from 14 June 2011. It is further revised on 1 November 2018. The existing and newly registered labels will remain valid till 31 December 2019. By then, re-registration may be required subject to the review of the Scheme.
- 3.3 The Scheme applies to integral directional and non-directional LED lamps which has a single lamp cap, and is intended for general lighting purposes having the following characteristics:
- (a) those with a rated voltage of 220 V to 240 V, rated frequency of 50 Hz a.c.;
 - (b) those with a rated lamp wattage up to 60 Watts;
 - (c) those designed with dimming or non-dimming operations.
- 3.4 The Scheme does not cover (i) LED tubes, and (ii) LED lamps that intentionally produce tinted or coloured light neither does it cover organic LED (OLED) lamps.
- 3.5 The scope of the Scheme covers all new registered LED Lamps imported to be sold or manufactured in Hong Kong with effect from the date that is declared by the participant but does not cover the second-hand products, products already in use, under trans-shipment or manufactured for export, etc.
- 3.6 The Scheme is operated as a 'Grading Type' labelling system. All participating LED Lamps will be registered under this Scheme provided that they have met the testing and performance requirements as stipulated in the Scheme.

4. Definitions

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

Authority means the Electrical & Mechanical Services Department (EMSD), the Government of the HKSAR

beam angle	means the angle between two imaginary lines in a plane through the optical beam axis, such that these lines pass through the centre of the front face of the lamp and through points at which the luminous intensity is 50% of the centre beam intensity.
center beam intensity	means the value of the luminous intensity measured on the optical beam axis.
CIE	means International Commission on Illumination.
Correlated Colour Temperature (CCT)	means the temperature of the Planckian radiator whose perceived colour most closely resembles that of a given stimulus at the same brightness and under specified viewing conditions.
directional lamp	means a lamp having at least 80% of light output within a solid angle of π sr (corresponding to a cone with angle of 120 degree).
Director	means the Director of Electrical & Mechanical Services Department.
General CRI (Ra)	means the photometric code or the Colour rendering index, colour designation of an LED lamp giving white light as defined by the correlated colour temperature and CIE 13.2:1974 general colour rendering index.
Government	means the Government of the HKSAR.
IEC	means International Electrotechnical Commission.
initial value	means a photometric and electrical characteristics at the end of the stabilization time.
inspecting officer	means the officer authorized by the Director to carry out inspection on LED Lamps.
label	means the energy label as described in section 7 of this document.
LED driver	means a power source with integral Light Emitting Diode (LED) control circuitry designed to meet the specific requirements of a LED lamp or a LED array.
LED lamp	means a lamp, incorporating a Light Emitting Diode (LED) light source and any additional elements necessary for stable operation of the light source, provided with a lamp cap conforming IEC 60061-1,

	which cannot be dismantled without permanent damages.
LED lamp, integral	means a Light Emitting Diode (LED) lamp intended to operate directly on mains voltage.
LED lamp, non-integral	means a Light Emitting Diode (LED) lamp intended for connection to an LED driver and cannot be operated directly on mains voltage.
lumen maintenance	means a luminous flux at a given time in the life of a LED-lamp divided by the initial value of the luminous flux of the lamp and expressed as a percentage of the initial luminous flux.
luminous efficacy (lm/W)	means a ratio of luminous flux emitted by a lamp to the electrical power consumed by the lamp.
luminous flux (lm)	means a quantitative measure of light emitted by a light source. The quantity is derived from radiant flux (power in Watt) by evaluating the radiation in accordance with the spectral sensitivity of the standard eye as described by the CIE Standard Photometric Observer.
luminous intensity (cd)	means the quotient of the luminous flux $d\Phi_v$ leaving the source and propagated in the element of solid angle $d\Omega$ containing the given direction, by the element of solid angle
mains electricity	means the electricity that is supplied in Hong Kong at a voltage of 380/220 V and a frequency of 50 Hz
non-directional lamp	means a lamp that is not a “directional lamp”.
optical beam axis	means the axis about which the luminous intensity distribution is substantially symmetrical.
participant	means the manufacturers, importers or the retailers of LED Lamps participating in the Scheme.
power factor	means a ratio of the measured active input power to the product of the supply voltage (r.m.s.) and the supply current (r.m.s.).
rated beam angle	means the beam angle declared by participant.
rated CCT	means the CCT declared by participant.
rated center beam	means the center beam intensity declared by

intensity	participant.
rated frequency	means the frequency marked on the nameplate declared by the participant.
rated General CRI (Ra)	means the General CRI (Ra) declared by the participant.
rated lamp life	means a length of time during which a complete LED lamp provides more than 70% of the rated luminous flux, published in combination with the survival factor, as declared by participant.
rated lamp voltage	means the voltage marked on the nameplate declared by the participant.
rated lamp wattage	means the wattage marked on the nameplate declared by the participant.
recognized laboratory	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 LED Lamps.
stabilisation time	means the time which the LED lamp requires to obtain stable thermal conditions
the / this Scheme	means the Hong Kong Energy Efficiency Labelling Scheme for LED Lamps

5. Test Methodology and Technical Standard

General

- 5.1 All test standards specified in this document are related to the energy efficiency and general performance requirements. It is not the intention of this document to detail out the test standards and requirements for 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 the appliances.
- 5.2 The luminous efficacy value (lm/W) is the major criterion that determines whether a lamp can meet the specific energy efficiency requirement. Therefore, it is important that a common base is used to validate the information submitted by manufacturers from different countries for their appliances.
- 5.3 The testing standards for measurement of electrical and photometric performances are based on the standard IEC 62612:2013, Self-ballasted LED-lamps for general lighting services with supply voltages > 50V – Performance Requirements or equivalent standards. For detailed requirements and procedural descriptions one should refer to the respective standard.

Test Methods and Conditions

- 5.4 The test voltage shall be 220V to 240V a.c., 50 Hz. The scope and sample sizes of the lamp test shall be conducted as described in IEC 62612:2013. For dimmable LED lamps, all performance requirements shall be tested with the lamp operated at full power.

Colour nomenclature, variation and rendering

- 5.5 The measurement shall be carried out according to IEC 62612:2013 or equivalent standards. The variation of chromaticity coordinates for Color Consistency shall be within a Six step MacAdam ellipse or less and Colour rendering index shall be greater than or equal to 80.

Measurement of Lumen Maintenance and Life time

- 5.6 The measurement shall be carried out according to IEC 62612:2013 or equivalent standards. The lumen maintenance shall be greater than or equal to 80% and lamp survival factor shall be greater than or equal to 90%.

Power factor

- 5.7 The measurement shall be carried out according to IEC 62612:2013 or equivalent standards. For the power greater than 2W and less than or equal to 5W, the power factor shall not be less than 0.4. For the power greater than 5W and less than or equal to 25W, the power factor shall not be less than 0.5. For the power greater than 25W, the power factor shall not be less than 0.9.

Supply Switching Test

- 5.8 The supply switching test shall comply with the requirements of IEC 62612:2013 or equivalent standards. If the rated lamp life greater than or equal to 30,000 hours, the number of switching cycles before failure shall be greater than or equal to 15,000. Otherwise, the number of switching cycles before failure shall be greater than or equal to the half of rated lamp life expressed in hours. The LED lamp shall operate normally after the test.

Determination of Lamp Luminous Efficacy

- 5.9 Lamp luminous efficacy shall be determined by computing the ratio of the measured initial lamp luminous flux output and measured initial lamp electrical power input at the test conditions. The resulting quotient shall be rounded off to the nearest unit of a lumen per watt.

6. Energy Efficiency Grading

- 6.1 The energy efficiency grade of LEDs shall be determined as shown in Table 6.1, with Grade 1 having the best performance and Grade 5 being the lowest class of performance in this scheme.
- 6.2 In order to determine the energy efficiency grade, the measured lamp luminous efficacy (Em) obtained in clause 5.9 of the requirement which is determined and calculated based on the measured luminous flux and the measured wattage of the same product model

$$\text{Measured Luminous Efficacy (Em)} = \frac{\text{Measured Luminous Flux}}{\text{Measured Wattage}}$$

The energy efficiency grade is determined by using the measured lamp luminous efficacy (Em) or the rated lamp luminous efficacy (Er), whichever is smaller.

Table 6.1 - Classification of Energy Efficient Grades

Grading of Energy Efficient label	
Grade	Lamp Luminous Efficacy (Lumen/W)
1	$X \geq 110$
2	$110 > X \geq 90$
3	$90 > X \geq 63$
4	$63 > X \geq 50$
5	$50 > X \geq 45$

Note:

Where X = measured lamp luminous efficacy (E_m) or rated lamp luminous efficacy (E_r), whichever is smaller.

Safety Requirements

6.3 In addition to the performance requirements, all LED lamps shall comply with the Electrical Products (Safety) Regulation, Chapter 406G of the Laws of Hong Kong, and the safety standards specified under the Regulation, and all other legislations concerning the safety of LED lamps.

7. Energy Label

7.1 The specification of the energy label for LED Lamps is shown in Annex 1. After a reference number has been assigned to a product model in the name of a specified person and included in the Director's record, the specified person shall produce the energy label for his/her products of the listed model showing the information in strict accordance with the requirements in Annex 1.

7.2 The energy label is to be attached or affixed to a prominent position of the LED Lamps' packaging and is to be clearly visible.

7.3 The energy label shall be of cardboard, if it is to be attached as a swing tag, or be self-adhesive and shall be cut to the outline shown in Annex 1 or otherwise approved by the Director.

- 7.4 The paper used for the energy label shall be durable with good wear and tear characteristics.
- 7.5 The energy label should be printed in both Chinese and English. Soft copy of the energy label can be obtained from Energy Efficiency Office, Electrical and Mechanical Services Department.

8. Testing Facilities, Laboratories & Accreditation Bodies

- 8.1 The testing shall be carried out either by independent test institutes or by the manufacturers or by the 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 clauses 8.2, 8.3 or 8.4.
- 8.2 The laboratory is accredited to IEC 62612:2013 or equivalent standards and 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 (MRA)#, and the results are issued in a test report or certificate bearing the accreditation mark.

HKAS has concluded mutual recognition arrangements with overseas accreditation bodies for testing laboratory accreditation. 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. Partners to these arrangements recognise the accreditations granted by one another as equivalent.

- 8.3 The Authority will also consider the following –
- (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 have been successful in carrying out the relevant tests in IEC 62612:2013 or equivalent standards and where these tests have been evaluated and certified by recognized independent certification body.
- 8.4 The recognised independent certification organisation mentioned in clause 8.3(c) shall meet the following minimum requirements:
- (a) Being recognized internationally to be competent for certifying product energy efficiency performance tests; and

- (b) Having experience in assessing and certifying the relevant energy efficiency performance tests; and
- (c) Having well established assessment procedures, including staff training and assessment criteria, relating to assessment and certification of energy efficiency performance tests.

9. Registration and Participation

Registration Procedures

- 9.1 All manufacturers, importers and the other parties involved in the LED Lamps distribution network are welcome and encouraged to participate in the Scheme. The Authority will send invitation to those known manufacturers and importers. However, no matter whether invited or not, any interested parties may submit their applications for the registration.
- 9.2 The proforma letter of invitation is shown in Annex 2.
- 9.3 By means of an application letter through mail, facsimile or electronic mail; applicant should submit formal application to :

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

In order to ensure effective implementation of the Scheme, the applicant must commit himself to fully comply with the duties, responsibilities and obligations set out in the 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 via online application services.

Information/Documents to be Submitted for Registration

- 9.4 Each brand and model of an LED Lamps participating in the Scheme should be provided with a test report issued by a recognized laboratory. The test report should contain energy efficiency tests 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 number, E-mail address, Contact person, Importer, Distributor, etc.

- b) Product to apply for participating in the Scheme:
- i) Name of LED lamp, types, directional or non-directional, dimmable or non-dimmable, brand, model references, country of origin.
- c) The parties that will be responsible for making and fixing the Energy Labels;
- d) Commencement date to affix Energy Label on LED Lamps
Year _____, Month _____
- e) Detailed test reports and relevant photos shall provide at least the following relevant technical and measured data for the LED lamp:
- Rated General CRI (Ra);
 - Rated Correlated Colour Temperature (CCT);
 - Rated lamp wattage;
 - Rated lamp voltage;
 - Rated frequency;
 - Rated lamp life;
 - Rated luminous flux; and
 - Rated beam angle, if applicable.
- f) Detailed reports with test data, graphics and results showing the following LED lamp performances:
- General CRI (Ra);
 - Correlated Colour Temperature (CCT);
 - Change of chromaticity (initial value and maintained value with CIE xy chromaticity diagram);
 - Power Factor;
 - Lamp wattage;
 - lumen maintenance at 6000h;
 - Lamp Survival factor at 6000h
 - Luminous efficacy;
 - Luminous flux, if applicable;

- Center beam intensity, if applicable;
 - Luminous intensity distribution and beam angle (only applicable to directional LED lamps); and
 - Switching cycle before failure
- g) Certificate of Safety Compliance prescribed by the “Electrical Products (Safety) Regulation”, Chapter 406G of the Laws of Hong Kong.

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

- 9.5 Company's name and chop should be stamped on all the documents provided. All photocopy test reports submitted to the Authority shall be certified true copy by appropriate organization.

Acceptance of Registration

- 9.6 On receipt of the application, the Authority will process the application and verify whether the LED Lamps meets the energy efficiency and performance requirements based on the submitted data. The accuracy of the energy consumption data, their inconsistencies and non-compliance will be dealt with in accordance with section 11.
- 9.7 If the application is accepted, the participants will be notified of the result in writing within 17 working days upon receipt of all necessary information requested. The participants will then be allowed to affix the label onto the ‘registered’ LED Lamps. Both manufacturer and importer of the registered LED Lamps should ensure that the energy label is correctly printed and affixed on the LED Lamps in accordance with section 7. The proforma letter of acceptance is shown in Annex 5.
- 9.8 If the application is rejected, the notification letter (proforma letter of rejection as shown in Annex 6) will also be given within 17 working days upon receipt of all necessary information requested.
- 9.9 The flow chart for registration is shown in Annex 7

Participant’s Duties, Responsibilities and Obligations

- 9.10 The participant is obliged to:-

- a) submit application and information including test results in accordance with format & procedures set out in clauses 9.3, 9.4 & 9.5;
- b) conduct tests via recognized laboratories and to comply with the specified test methodologies and technical standards in the Scheme;
- c) provide correct information of the Brand, Model, Luminous Efficacy, and Energy Efficient Grade of the LED in the Energy label and satisfy the requirement of the Format of the label listed in Annex 1;
- d) produce and affix labels on product packaging at his own costs;
- e) fully inform other sales agents in his distribution network once the particular make and model of an LED Lamps is registered under the Scheme;
- f) allow random/ad-hoc inspection to be conducted by persons authorized by the Authority on registered LED Lamps at his premises;
- g) conduct re-test(s) at his own costs at some recognized laboratories, if non-compliance is found on his registered LED Lamps. The result of re-test(s) shall reach the Authority within the prescribed period of time specified by the Authority;
- h) inform the Authority of any change in the technical information and data that were previously submitted to the Authority together with the application letter;
- i) accept the fact that if registered LED Lamps fails to perform in accordance with the required standard performance as given in sections 6 and this cannot be readily rectified, the Authority may order it be de-registered from the Scheme; and
- j) remove all labels from the de-registered LED Lamps immediately.
- k) if the registered model is supplied continuously, submit re-test report in every 36 months from the date of acceptance for registration under VEELS. The testing samples shall be obtained from the market.

9.11 The details of the registered LED Lamps under the Scheme will be kept in a register list maintained by the Authority. The registration records will be regularly uploaded and maintained in the EMSD Internet for public and interested parties for browsing and reference.

Termination

9.12 Under circumstances of poor performance of the participant such as –

- (a) (repeated) failure to fulfil the obligations set out under clause 9.10; or
- (b) in any other case where the Director is of the opinion that registration of the particular LED Lamps is contrary to the public interest,

the Authority may de-register the concerned LED Lamps from the Scheme with immediate effect by giving the participant a notice in writing. Once the LED Lamps is de-registered, energy label is not allowed to fix on it. However, participant will normally be given a grace period of three months to remove all labels from the de-registered LED Lamps.

The concerned LED Lamps could be de-registered even when there is no legal action taken under either the Trade Description Ordinance (Chapter 362) or the Copyright Ordinance (Chapter 528).

- 9.13 Participant who decides to discontinue participating in the Scheme or to withdraw any registered model from the registered LED Lamps list shall give at least one month advance notice to the Authority.

10. Legal Provisions

- 10.1 The Scheme is a voluntary scheme. However, a participant who abuses the Scheme by giving false information on an energy label may contravene provisions of the Trade Description Ordinance (Chapter 362).

- 10.2 No one could take advantage of the Scheme by using the energy label on his LED Lamps without authorization of the Authority as that shall constitute an infringement of copyright under the Copyright Ordinance (Chapter 528).

11. Compliance, Monitoring and Inspection

Purpose

- 11.1 To uphold the credibility of the Scheme and to continue maintaining the confidence of the consumers, compliance check on energy labels on those LED Lamps participating in the Scheme are needed. Also, to avoid the non-participating parties from taking advantage of the Scheme by using unauthorized labels, suitable form of inspection shall be conducted on those LED Lamps which have not been registered under the Scheme.

Scope

- 11.2 The scope of inspection includes sample **checking** and **testing** of the following items:-
- (a) whether the energy label is affixed on the registered LED Lamps;
 - (b) whether the energy label on the registered LED Lamps is affixed to a prominent position in accordance with clause 7.2;
 - (c) whether the energy label being displayed is of correct format in accordance with section 7;
 - (d) whether the registered LED Lamps complies with the energy efficiency and the performance requirements in accordance with section 5;
 - (e) whether the data submitted by the participants are correct by random re-testing; and
 - (f) whether the unregistered LED Lamps display unauthorized energy labels.
- 11.3 The participants will be requested to take immediate remedial action and report of follow-up action taken if non-compliance is found on their LED Lamps.
- 11.4 For a registered LED Lamps which is found with non-compliance to the energy efficiency and performance requirements stated in section 6 during random checking, the Authority may request the participant to conduct a separate energy efficiency and performance test at his own cost, in accordance with the test methodology as stated in section 5, in one of the testing laboratories agreed by the Authority.
- 11.5 If non-compliance is confirmed in the repeat performance tests initial, interim or final test results, 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 compliance monitoring and inspection on LED Lamps. The officers will carry proper identification cards which will be produced upon request during their inspection operations. However, the officer will not inform the participants in advance of their intended inspection operation.

- 11.7 It is the participants' obligation 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 LED Lamps 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 clause 11.2.
- 11.10 Inspections will normally be carried at the LED Lamps retail outlets and 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.

12. Complaints and Appeal

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

Complaints Handling Procedures

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

Appeal Procedures

- 12.5 A participant who feels aggrieved by the decision or action given by the Authority according to section 9 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, provide documents and give evidence relevant to the appeal.
- 12.8 The Director shall notify the appellant of his decision and the reasons for it. The decision will be final and binding.

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 following relevant information of the participants in the Scheme -
 - i. Details of the registered LED Lamps such as registration number, date of registration or de-registration if it occurs, energy consumption data, energy factor, performance data, make, model, category and other related information; and
 - ii. Details of the registered importers, manufacturers, local agents, etc.; in the distribution network such as address, date of registration or de-registration if it incurs, etc.
 - (b) Periodic review of the test methodology, and procedures for application of 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.

14. Future Development

- 14.1 It is hoped that following the implementation of the Scheme, the market will introduce models of high efficiency appliances and public awareness of using energy efficient products will be much improved.
- 14.2 To further facilitate the public in choosing energy efficient appliances and raise public awareness on energy saving, the Government has introduced a mandatory Energy Efficiency Labelling Scheme (EELS) through the Energy Efficiency (Labelling of Products) Ordinance.
- 14.3 Under the mandatory EELS, energy labels are required to be shown on prescribed products for supply in Hong Kong to inform consumers of their energy efficiency performance. Five types of prescribed products covered in the mandatory EELS are room air conditioners, refrigerating appliances, compact fluorescent lamps, washing machines, and dehumidifiers.

The Hong Kong Voluntary Energy Efficiency Labelling Scheme for LED Lamps

Energy Label Format

Not less than 30mm 不少於 30 毫米

ENERGY LABEL 能 源 標 籤	
Brand 牌子	ABC 某某牌
Model 型號	HK1234
Luminous Efficacy (Lumen/W) 發光效率(流明/瓦) Energy Efficiency Grade* 能源效益級別 <small>*Among the five grades. Grade 1 is the most energy efficient. 在五個級別中，第一級為最省電。</small>	110 1
EEL Registration Number 能源標籤登記號碼	LED 17-0001
<small>* The data are provided according to the Hong Kong Energy Efficiency Labelling Scheme 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>	

Not less than 70mm
不少於 70 毫米

Not to Scale

Note : The figure of the energy label is shown not to scale.

Soft copy of this label can be obtained from Energy Efficiency Office, Electrical and Mechanical Services Department.

Proforma Letter of Invitation

Our ref. () EMSD/EEO/LB/35

Your ref.

Tel.

Fax.

Date

[Name and Address of
Manufacturers/Importers/Agents]

Dear Sir/Madam,

Invitation of Application for Registration in The Hong Kong Voluntary Energy Efficiency Labelling Scheme for LED Lamps

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 LED Lamps to Hong Kong with effect from (_____). The details of the Scheme^① have been finalized and I enclose herewith a guide of the Scheme for your reference.

Being one of the major LED Lamps manufacturers / importers / agents^② 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

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 LED Lamps is found to be non-compliant, we may consider deregistering the LED Lamps 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 : ^① 'The Scheme' means 'The Hong Kong Voluntary Energy Efficiency Labelling Scheme for LED Lamps '
^② delete as appropriate)

Proforma Letter of Application

Your ref. () EMSD/EEO/LB/35
Our ref.

Tel.

Fax.

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 The Hong Kong Voluntary Energy Efficiency Labelling Scheme for LED Lamps

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 LED Lamps(s) 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 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 the LED Lamps(s) fail(s) to perform in accordance with the requirements of energy efficiency and performance as given in section 6 and this cannot be readily rectified, the Authority may order it (they) be de-registered from the Scheme.

The details of information of the LED Lamps(s) 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 number, Email address, Contact person, Importer, Distributor, etc.
2. Product to apply for participating in the Scheme :
 - i) Name of LED lamp, types, directional or non-directional, dimmable or non-dimmable, integral or non-integral LED driver, brand, model references, country of origin.
 - ii) Name of non-integral LED driver, types, brand, model references, country of origin, if applicable.
 - iii) Target lamp type, wattage and beam angle for those products stating equivalence with target lamps, if applicable.
3. The parties that will be responsible for making and fixing the Energy Label.
4. Commencement date to affix Energy Labels on LED Lamps package
Year _____, Month _____
5. Supporting Technical Information of LED lamps in test report
 - Rated General CRI (Ra);
 - Rated Correlated Colour Temperature (CCT);
 - Rated lamp wattage;
 - Rated lamp voltage;
 - Rated frequency;
 - Rated lamp life;
 - Rated luminous flux,; and
 - Rated beam angle if applicable.
6. Detailed reports with test data, graphics and results showing the following LED lamp performances:
 - General CRI (Ra);
 - Correlated Colour Temperature (CCT);
 - Change of chromaticity (initial and maintained value with CIE xy chromaticity diagram) ;
 - Power Factor;

- Lamp wattage;
- lumen maintenance;
- Luminous efficacy;
- Luminous flux, Center beam intensity, if applicable;
- Luminous intensity distribution and beam angle (only applicable to directional LED lamps); and
- Switching cycle before failure.

10 Certificate of Safety Compliance prescribed by the “Electrical Products (Safety) Regulation”, Chapter 406G of the Laws of Hong Kong and safety requirement as stipulated at clause 6.4 of the Scheme document.

*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. () EMSD/EEO/LB/35

Tel:

Fax:

Date

┌ Name and Address of the
Manufacturers/Importers/Agents

└

Dear Sir/Madam,

**Acceptance of Application for Registration in
The Hong Kong Voluntary Energy Efficiency Labelling Scheme for
LED Lamps**

With reference to your letter of ref. _____ dated _____, we are pleased to inform you that your application to participate in the captioned scheme has been accepted.

We enclose herewith the registration certificate(s) of LED Lamps(s) registered. The registered LED Lamps(s) is/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 LED Lamps package 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. () EMSD/EEO/LB/35

Your ref.Tel.

Fax.

Date

「
Name and Address of
Manufacturers/Importers/Agents
」

Dear Sir/Madam,

Rejection of Application for Registration in The Hong Kong Voluntary Energy Efficiency Labelling Scheme for LED Lamps

With reference to your letter ref. _____ dated _____, we regret to inform you that your application for registration to participate in the Scheme has not been accepted for the following reasons:-

1. _____,
2. _____, 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

The Hong Kong Voluntary Energy Efficiency Labelling Scheme for LED Lamps

Flow Chart of Registration Procedures

