

# <u>Responses from The Professional Commons on the</u> <u>"Consultation Document on the Restriction of Sale of</u> <u>Energy-inefficient Incandescent Light Bulbs"</u>

# I. Introduction

1. The share of lighting in the total electricity consumption in Hong Kong has dropped over the past decade from 17% in 1999 to 11% in 2010.<sup>1</sup> With the continuation in the decrease of the proportion of lighting in the electricity consumption in Hong Kong, we believe that rather than waiting for the responses from the Government for the measures for the improvement of energy efficiency concerning the choice of the use of light bulbs, many individuals are adopting the use of light bulbs of a higher energy efficiency from their own initatives.

In this submission, the definitions of frequently mentioned lighting appliances are as follows:

- Incandescent light bulbs ("ILBs"): include the commonly used light bulbs and halogen lamps.
- "Energy Efficient Light Bulbs" (hereafter EELBs): A popular term for "compact fluorescent lights" (CFL). Electrons collide with gasified mercury to produce ultra-violet radiation, and when this ultra-violet radiation is absorbed by the phosphor on the inner surface of the tube, it glows as visible light.
- "Fluorescent tubes": the design and energy saving devices within the bulb are largely the same as the "EELBs", but using different adaptors/transformers. Hence, they should be considered as "EELBs" as well.

# II. Government's Initiatives on Restricting the Sale of ILBs

2. For the promotion of energy efficiency, the Chief Executive stated in the 2008-09 Policy Address that, "to promote the use of more energy-efficient lighting products, we will study the need to restrict the sale of incandescent light bulbs"<sup>2</sup>. Different governments around the world have already launched their programmes for the phasing out of ILBs measures for the restriction of the sale

<sup>&</sup>lt;sup>1</sup> See Hong Kong Energy End Use Data 2011 Edition, page. 43,

http://www.emsd.gov.hk/emsd/e\_download/pee/HKEEUD2011.pdf.

<sup>&</sup>lt;sup>2</sup> The 2008-09 Policy Address, para. 101.



of ILBs, such measures are listed in the Appendix of the consultation paper of the Government.

- 3. It was not until three years after the Government's announcement for making proposals concerning the restriction of the sale of ILBs, that is, in August 2011, that the Government published the "Consultation Document on Restriction of Sale of Energy-inefficient Incandescent Light Bulbs" to map out its specific measures for the restriction of the sale of energy-inefficient ILBs. We believe that the Government is significantly lagging behind other countries in restricting the sale of incandescent light bulbs. The main proposals from the Government can be summarized as follows:
  - Restrict the supply of incandescent light bulbs in phases by a mandatory scheme. The first stage of the restriction would cover 25 watt or above of non-reflector type of incandescent light bulb which operate using a single phase electricity supply of nominal voltage of 220 V, including General Lighting Service (GLS) lamps, candle shape, fancy round and other decorative lamps, but excluding tungsten halogen lamps.
  - Propose to prohibit the supply of those lamps that cannot meet the minimum energy performance standards, and that the supply of these lamps that can meet the Minimum Energy Performance Standard (hereafter the MEPS) should be governed by a registration system.

#### III. Responses from The Professional Commons

4. The Professional Commons believes that the Government must act immediately and adopt more forceful measures as policy tools in the restrictions of the use of the ILBs. As the Government has already been lagging behind from other countries in terms of the phasing-out of incandescent light bulbs, and even with the Government's proposed the restriction of sale of ILBs, a survey from the Government conducted in 2008 indicated that the estimated annual electricity consumption of non-reflector type ILBs merely amounts to just 2% of electricity consumption in Hong Kong (para. 11 of the Consultation Paper), while the implementation of the Government's proposals could only bring a 6% savings in the electricity consumption for lighting (para. 36 of the Consultation Paper). From the figures, 11% of the total electricity consumption were spent in lighting in 2010, so the Government's proposal would merely generated a 0.66%



reduction in the total energy consumption in Hong Kong, which is a rather small scale of energy saving.

#### a. Banning the Sale of ILBs

5. For the question in which the consultation document is seeking for responses "Should Hong Kong restrict the supply of energy-inefficient ILB by mandatory scheme, voluntary measures?", in view of local experience, public education on energy saving that has been implemented for years has failed to bring fruitful results, and that the replacements for the commonly used ILBs for household use are already readily and widely available. Hence, we are of the view that Government should ban the sale of all ILBs through legislative means.

#### b. Made ILBs which meet the MEPS to be Available the Market is Unnecessary

- 6. As for the second question in which the consultation document asked: "What types of ILB should be restricted if a mandatory scheme is introduced to restrict the supply of ILB?", we believe that it is impractical and unnecessary for the ILBs which reach the MEPS should be continually to be made available freely and legally in the market. The reason we hold this view is because the Government has admitted in the Consultation Paper that the "the non-reflector type ILB can by large be replaced by more energy-efficient types of lamps, such as CFL...etc" (para. 12 of the Consultation Paper), and it has also suggested that "as most 25W or above non-reflector type ILB, including GLS lamps, candle shape, fancy round and other decorative lamps, but excluding tungsten halogen lamps, supplied in Hong Kong cannot meet the prevailing MEPS adopted overseas", (para. 26 of the Consultation Paper.) Hence, we are of the view that even the Government allows those ILBs which has passed the MEPS to be continually being available in the market, the quantity of those ILBs which would be available in the market would be of a small number anyway, and that they could be easily replaced by more energy efficient light bulbs.
- 7. Hence, we call for a mandatory ban of all ILBs in which replacement light bulbs of higher energy efficiency are already available, and the registration system in which the Government advocates for the ILBs which have passed the MEPS to be available in the open market would not be required.



8. Regarding the third question in which the Government asked in the consultation document on whether Hong Kong should adopt the MEPS approach in phasing out ILBs? The Professional Commons is in the view that, rather than setting the MEPS on the ILBs itself, Hong Kong should adopt the MEPS on the replacement EELBs, that is, all EELBs must pass through the MEPS before it is available for sale in the market.

#### IV. Creation of a "Sustainable Lighting Policy"

- 9. We believe that for the further promotion of energy efficiency and the reduction of carbon emissions in the use of lighting, merely restricting the sale of ILBs is not enough. In response to the Government's proposal in the 2008-09 Policy Address, The Professional Commons has published a research report entitled "Powering Hong Kong by Sustainable Lighting: Research Report on Lighting System in Hong Kong" in March 2009, mapping our proposal of not just on the restriction of the sale of the ILBs, but urging the Government to create a whole set of "sustainable lighting" policies, including the energy labelling, recycling of light bulbs, as well as the introduction of a "Producer Responsibility System" for the disposal of the light bulbs.
- 10. We believed that even though the research report has been published for almost three years, our proposals for the creation of a "sustainable lighting system" is still valid and could be applied as the Government's approach in its policies on lighting, after the banning of the ILBs. The improvement of energy efficiency should not be focusing on the restriction of the sale of light bulbs alone, the HKSAR Government should seize the opportunities in formulating a "sustainable lighting" policy, which shall covers the appropriate labeling, green procurement, reuse and recycling of light bulbs.
- 11. If the Government does not take decisive action and proactively formulate a "sustainable lighting system", Hong Kong will lag behind other countries. It would also undermine our reputation as a member city in the "C40 Group", which is a consortium of major cities in the world working to reduce urban carbon emissions and to adapt to climate change, as well as our status as "Asia's World City".



#### a. Adoption of the MEPS on the Replacement EELBs

- 12. As Hong Kong is an open society, members of the community should have the rights to choose the replacement energy efficient lighting devices, if the banning of the incandescent light bulb really happens. Hence, the availability of good substitutes would be crucial to ensure the banning of ILBs would effective reduce energy consumption. Generally speaking, living a modern lifestyle, the general public would switch to other means of electricity-powered lighting device. Nonetheless, a set of supporting measures shall also be implemented.
- 13. There are many kinds of replacement lighting device across the territory which could meet the purpose of energy saving. Among various kinds of EELBs, there are great differentiation in their performance in terms of the environmental concerns and market popularities, for example:
  - EELBs powered by electric ballasts: They are of smaller size and use lesser amount of raw materials. Its outer shell is composed of plastic that does not require chemical treatment.<sup>3</sup>
  - EELBs powered by electromagnetic ballasts: There is only one iron core and a set of copper wires in the ballast, and no electronic components at all. It has a higher life span of 30 years. Not only could it reduce a large amount of electronic waste and the relevant processing fees, the iron core and the copper wire could be recycled, and therefore totally avoid the creation of electronic waste.<sup>4</sup>
  - Light-emitting-diodes (LED): Lighting products which are becoming more available in the consumer market. They are even more energy efficient and produce a brighter beam of lights than EELBs. The LED lighting fixtures are still very much constrained by its hefty price-tag: The current price of a LED light bulb is 30 times of a typical EELB, which is still far beyond the reach of most households.
  - EELBs with detachable components: The light tube and the adapter can be separated to facilitate the replacement of damaged components, so as to maximize the designed lifespan of each component.

<sup>&</sup>lt;sup>3</sup> Megaman Lighting (Hong Kong) Limited, 〈採用電子鎭流器 節能與環保兼備〉, *Today's Building Services and Environment Protection*, Vol. 8, December 2006.

<sup>&</sup>lt;sup>4</sup> Prof. Ron Hui Shue-yuen,〈「節能」與「環保」的概念混淆及照明應用常見的誤解〉, *Today's Building Services and Environment Protection*, Vol. 8, December 2006, and 〈學者倡引入環保慳電膽〉, *Ming Pao*, 10 September 2007, p. A8.



- 14. In our opinion, it should be up to the general public and market mechanism to decide which replacement lighting device should be used in the future. The reasons are as follows:
  - The Government should pay due respect to the consumption choices of the general public;
  - In view of the ever changing technology scene, adequate policy flexibility should be provided to facilitate new products to enter the market. For example, there are already EELBs without any form of mercury available in overseas market;<sup>5</sup>
  - The comparative advantages of replacement lighting devices in respect of costs and the prices would be affected by the overall lighting policy. The Government could encourage the general public to use more environmentally friendly lighting devices, through the differentiation of levies imposed along with the different levels of environmental friendly materials used in manufacturing the light bulbs.

## b. Green Procurement Policy

15. The Government could help increase the market share of the more environmentally friendly products, through a wider application of green procurement principles. It is under the discretion of the Government to promote a wider use of more environmentally sustainable EELBs in public facilities and Government properties, and even provide material subsides to the general public (through direct distribution of EELBs). Such a move can further increase the contributions of these policies in tackling global climate change.

## c. Utilization of the Producer Responsibility Scheme

16. The Government should extend the coverage of the "Producer Eco-responsibility Ordinance" passed in 2008 to EELBs, and incorporate these policy tools to realize the environmental policy objectives. It is the responsibility of the producers to act accordingly, and the specific measures for the producers of the EELBs for actions are listed as follows:

<sup>&</sup>lt;sup>5</sup> For details, see <http://www.vu1.com/>.



Policy Objectives	Policy Tools
Encouraging the use of raw	Collect a levy from the manufacturers under
materials which incurs the least	which the more the light bulbs are made
damages to the environment, or	from environmentally friendly materials or
material that could be easier to	easier for recycling, the less the levy shall be
recycle	
Encouraging the consumers to	Introduce a deposit-refund system
return the waste light bulbs	
Establishing a full scale collection	Implementing a collection scheme
system	demanding the manufacturers or importers
	to provide direct collection services; or
	Introduce a levy to cover the cost of
	collection
Establish a recycling system	Introduce a levy to cover the processing cost
	of the collected materials

# d. Collecting and Recycling of EELBs

- 17. Greater importance should be attached to the environmental and health hazards arising from the mercury present in the EELBs. Although the Government stated that there are "more than 860 housing estates in Hong Kong providing recycling facilities for CFL and fluorescent tubes, and around 130 public collection points have been set up" (para. 17 of the Consultation Paper), we believed that it is not enough, the Government should launch a territorial wide recycling facilities for CFLs as soon as possible.
- 18. It would be important to incorporate the newly established recycling system with the Producer Responsibility Scheme. By doing so, there should be a clear delineation on the responsibilities of the suppliers: whether they should pay the costs of collection or recycling, or they should be directly responsible for the collection process. In addition, the Government should encourage the consumers to return the waste light bulbs through a deposit-refund system incorporating both material incentives, as well as clear designation of responsibilities.
- 19. The processing capacity in the CWTC in Tsing Yi will not be enough in the short term. As the Chemical Waste Treatment Centre only has an annual processing



capacity of 800 000 EELBs, as suggested by the Government in July 2010, there will not be any spare capacity after processing the stable supply of approximately 400 000 EELBs annually from the Government departments, as well as 400 000 light bulbs from the Fluorescent Lamp Recycling Programme, a collaboration effort between the Government and the business sectors since 2008<sup>6</sup>.

- 20. The Government should make early preparation for, and raise the capacity in the treatment and recycling of waste light bulbs through the following ways:
  - Gradually increase the capacity of mercury recycling so as to proactively prepare for the coming of the "EELB age";
  - Improving the processing capability in order to increase the ratio in recycling electronic and metal components of EELBs.

The Professional Commons November 2011

<sup>&</sup>lt;sup>6</sup> See "LCQ18: Fluorescent Lamp Recycling Programme," 7 July 2010, < http://www.info.gov.hk/gia/general/201007/07/P201007070126.htm>.