能源效益及相關事項通訊
A Newsletter on Energy Efficiency and Related Matters

二〇一二年七月 Jul 2012

EnergyWits 智能

第十九期 ISSUE NO. 19

本期內容 Contents

珍惜資源 全民節能

機電工程署 EMSD

《屋宇裝備裝置能源效益實務守則》及《建築物能源審核實務守則》已於2012年2月10日刊憲頒布

"Code of Practice for Energy Efficiency of Building Services Installation" and "Code of Practice for Building Energy Audit" have been gazetted on 10 February 2012

機電工程署於今年2月10日刊憲頒布了2012年版的《屋宇裝備裝置能源效益實務守則》（簡稱《建築物能源效益守則》），及2012年版的《建築物能源審核實務守則》（簡稱《能源審核守則》）。《守則》就遵行《建築物能源效益條例》（第610章）向業界提供了技術上的規定及細節。《條例》將於2012年9月21日全面實施，並由機電工程署負責執行。

On 10 February 2012, EMSD has gazetted the Code of Practice for Energy Efficiency of Building Services Installation (also known as Building Energy Code or BEC) 2012 Edition and the Code of Practice for Building Energy Audit (also known as Energy Audit Code or EAC) 2012 Edition. The Codes of Practice provide the industry with the technical requirements and details on the compliance with the Buildings Energy Efficiency Ordinance (Cap. 610), which will come into full operation on 21 September 2012 with EMSD as its enforcing department.

2012年版建築物能源效益守則

《建築物能源效益守則》適用於《條例》指明類別的新建築物和「主要裝修工程」的相關屋宇裝備裝置。《守則》列出《條例》訂明的四類主要屋宇裝備裝置（包括照明、空調、電力以及升降機及自動梯裝置）的能源效益標準及規定，其中包括每平方米樓面面積的照明功率密度、空調冷水機的效能系數、電動摩打的效率以及升降機及自動梯驅動裝置的電功率等。

Building Energy Code (BEC) 2012

The BEC is applicable to new construction of buildings and "major retrofitting works" of relevant building services installations prescribed in the Ordinance. The BEC specifies the energy efficiency standards and requirements governing the four key types of building services installation (including lighting, air-conditioning, electrical, as well as lift and escalator installations) under the Ordinance, such as the allowable lighting power density per unit floor area, the coefficient of performance for chiller, the motor efficiency and the electrical power drawn by the motor drive of lift and escalator.

2012年版《建築物能源效益守則》
"Code of Practice for Energy Efficiency of Building services Installation" (BEC) 2012 Edition

2012年版《能源審核守則》
"Code of Practice for Building Energy Audit" (EAC) 2012 Edition

2012年版能源審核守則

《能源審核守則》列出就管制的中央屋宇裝備裝置所作能源審核規定方面的技術指引和細節，包括節能措施建議及編製能源審核報告等。建築物業主通過能源審核，可得出一個顯示每年每平方米能源耗用量的能源使用指數，業主須依《條例》規定展示該指數於建築物的入口。《條例》不強制業主落實能源審核報告所建議的節能措施，業主可按自己的資源分配落實這些措施，以便減低建築物的能源耗用。

Energy Audit Code (EAC) 2012

The EAC sets out the technical guidance and details in respect of the energy audit requirements governing the central building services installations, including the recommendation of energy saving measures and compilation of energy audit report. Through the energy audit, the building owner can identify an energy utilization index reflecting the annual energy consumption per unit floor area, which, as required under the Ordinance, is to be exhibited at the building's main entrance. The Ordinance does not mandate the building owner to implement the energy saving measures recommended in the energy audit report, and the building owner can allocate at his/her own pace the resources to implement these measures to reduce the building's energy consumption.

照明裝置
Lighting Installation

空調裝置
Air-conditioning Installation

電力裝置
Electrical Installation

升降機及自動梯裝置
Lift and Escalator Installation

透過落實《建築物能源效益守則》的標準，新落成建築物預計於首十年的節能幅度可達28億千瓦小時，這還未計算透過規範「主要裝修工程」及進行能源審核所得的節能幅度。屆時，除了建築物的能源效益可作進一步提升外，同時亦可以為環保業界，包括從事屋宇裝備裝置貿易，以及能源管理等工程業界，帶來更多綠色機遇，市民更可節能省電費，達致多贏的局面。

It is estimated that an electricity saving of approximately 2.8 billion kWh from newly constructed buildings in the first ten years is achievable through implementing the BEC standards, not to mention the energy saving from regulating "major retrofitting works" and carrying out energy audit. Subsequently, not only will the energy efficiency of buildings be further improved, extra green business opportunities will be generated for environmental industries, including those involved in building services installations, and the energy engineering sectors, and the public can also benefit from electricity bill savings, achieving a multi-win-win situation.

助理署長/電力及能源效益李國強先生在機電工程署總部大樓舉行的簡介會中向150名出席者致歡迎辭
Assistant Director/Electricity & Energy Efficiency Mr. K.K. LI delivering welcoming address to 150 attendees of the briefing session held at EMSD Headquarters

為了宣傳新頒布的《守則》，機電工程署已於2月29日舉辦簡介會，向《守則》技術工作小組成員組織的會員介紹《建築物能源效益條例》及《守則》。該小組主要工作是訂立《守則》的技術標準，由超過30個專業團體、業界團體及學界團體等組成。

To promote the newly issued codes, EMSD held a briefing session on 29 Feb for the members of the member organizations of the BEC Technical Taskforce, in which the Ordinance and the codes were presented. Tasked to develop the technical standards of the codes, the Taskforce constituted over 30 organizations, including professional institutions, trade bodies and academia.

新頒布《建築物能源效益守則》所訂明的某些規定，較2007年推出及透過自願性執行的標準更為嚴謹。機電工程署在制定標準時已參考了有關技術的最新發展及不同地方的做法，大部分的新標準與一些歐美及亞太區內國家相若，當中部分標準（例如升降機的電功率）甚至是其他地區所沒有訂明的。

Some standards stipulated in the BEC 2012 edition are more stringent than those in the version promulgated in 2007, which have been implemented on a voluntary basis. These 2012 standards have been developed by EMSD with reference to the latest developments of relevant technology and practices in other regions. Most of the new standards are comparable to those adopted by some of our counterparts in the US, Europe and the Asia-Pacific region, while some standards (such as electrical power of lift) are not specified in overseas jurisdictions.

「強制性能源效益標籤計劃」第二階段
涵蓋洗衣機和抽濕機 - 已於2011年9月19日起全面實施
Second Phase of **Mandatory Energy Efficiency Labelling Scheme** covering Washing Machines and Dehumidifiers - Full implementation since 19 September 2011

為進一步方便市民挑選具能源效益的產品及提升公眾對節約能源的意識，政府透過《能源效益（產品標籤）條例》（第598章）推行強制性能源效益標籤計劃。計劃的首階段涵蓋空調機、冷凍器具及慳電膽，已經全面實施。計劃的第二階段涵蓋範圍擴大至洗衣機和抽濕機，亦已於2011年9月19日起全面實施。在本港供應的這五類電器產品，必須屬已獲編配參考編號的表列型號，並附有能源標籤。

To facilitate the public in choosing energy efficient appliances and raise public awareness of energy saving, the Government has introduced a Mandatory Energy Efficiency Labelling Scheme (the Scheme) through the Energy Efficiency (Labelling of Products) Ordinance, Cap. 598 (the Ordinance). The initial phase of the Scheme, covering room air conditioners, refrigerating appliances and compact fluorescent lamps, has been fully implemented. The second phase of the Scheme extends the coverage to washing machines and dehumidifiers and has also been fully implemented since 19 September 2011. These five electrical products shall be listed models assigned with reference numbers and affixed with energy labels prior to being supplied in Hong Kong.

具能源效益的產品不但消耗較少能源，亦有助保護環境，長遠來說更可幫助消費者節省金錢。能源標籤把同一類產品的能源效益分為五級，方便消費者選擇具能源效益的產品。獲得第一級能源標籤的產品，表示該產品的能源效益最高。以第一級比第三級及第五級，分別可節省的耗電量大約如右：

Energy efficient products consume less energy and help protect the environment. They also save consumers' money. To help consumers choose energy efficient products, the Scheme classifies the energy performance of a product type into five grades. A product with Grade 1 energy label means that it is the most energy efficient. For the five types of prescribed products, the approximate percentages of energy saving of Grade 1 energy-labelled products as compared to Grade 3 and Grade 5 energy-labelled products are shown in the table at the right.

節約能源百分比 Percentage of Energy Saving

訂明產品類別 Type of Prescribed Products	第一級比第三級 grade 1 vs grade 3	第一級比第五級 grade 1 vs grade 5
空調機 Room Air Conditioners	15%	29%
冷凍器具 Refrigerating Appliances	35%	49%
慳電膽 Compact Fluorescent Lamps	14%	18%
洗衣機 Washing Machines	25%	40%
抽濕機 Dehumidifiers	24%	42%

洗衣機和抽濕機的能源標籤樣式
Energy Label

洗衣機
Washing Machine

抽濕機
Dehumidifier

以一台貼有「第一級」能源標籤而洗衣量為5公斤的水平滾筒式洗衣機為例，與另一部相同洗衣量附有「第五級」能源標籤的水平滾筒式洗衣機相比，假設每年使用260次及電費平均為每度電$1，「第一級」的型號每年可節省約$170的電費。另外，以一台貼有「第一級」能源標籤而抽濕量為每天9公升的抽濕機為例，與另一部相同抽濕量附有「第五級」能源標籤的抽濕機相比，假設每年使用450小時及電費平均為每度電$1，「第一級」的型號每年可節省最多75元的電費。

For example, a Grade 1 horizontal drum type washing machine with a washing capacity of 5kg could save up to $170 in electricity cost each year when compared to a Grade 5 model, assuming that it is operated for 260 washes per year and the average electricity bill is $1 per kWh. Also, a Grade 1 dehumidifier with a dehumidifying capacity of 9 litres per day could save up to $75 in electricity cost each year when compared to a Grade 5 model, assuming that it is operated for 450 hours per year and the average electricity bill is $1 per kWh.

有關計劃的詳細資料，可於機電工程署網址（http://www.emsd.gov.hk/）瀏覽，亦可致電2808 3465機電工程署能源效益事務處查詢。

For details of the Scheme, please visit the website of EMSD (http://www.emsd.gov.hk). For enquiries, please contact the Energy Efficiency Office of EMSD at 2808 3465.

LED燈自願性能源效益標籤
Voluntary Energy Efficiency Labelling Scheme for LED Lamps

隨著發光二極管(LED)燈科技的不斷進步，鑑於其特長燈泡壽命、低功率消耗及環保的特點，它已經成為照明應用的一項明智選擇。

為方便市民選擇高能源效益的LED燈，機電工程署由2011年6月14日起，已經把自願性能源效益標籤計劃的涵蓋範圍擴展至LED燈。該計劃旨在讓有興趣的市民獲得該產品的能源效益性能水平，使他們在作出購買決定時，考慮到這些因素。

With the advancement of technology in Light Emitting Diodes (LED) lamps, the energy efficient LED lamps have become a wise choice in lighting applications with its long lamp life, low power consumption and environmentally friendly characteristics.

To facilitate the public on choosing energy efficient LED lamps, Electrical and Mechanical Services Department has extended the voluntary Energy Efficiency Labelling Scheme (VEELS) to cover LED lamp with effective from 14 June 2011. The scheme aims to save energy by informing potential consumers about the energy efficiency performance level of such product, so that buyers can take these factors into consideration when making their purchasing decision.

適用範圍

計劃採用“確認式”標籤制度，用來識別已經達到最低能源效率和性能要求的產品。計劃的條文適用於作一般照明用途而有下列特點的定向及非定向LED燈：

(a) 額定電壓最高為240伏特交流電或直流電；

(b) 交流電的額定頻率為50赫茲；

(c) 額定電燈瓦數最高為60瓦；以及

(d) 額定相關色溫數值為2700K到6500K。

計劃適用於可調光暗及不可調光暗的LED燈，但不包括(i)LED光管及(ii)非一般照明用途包括特製有色或彩色光源的LED燈，也不包括有機發光二極管(OLED)燈。

Scope

The scheme will be operated as a “Recognition Type” labelling system, which is used to recognize the appliances that have met the minimum energy efficiency and performance requirements. The provision of this scheme shall apply to directional and non-directional LED lamps, and is intended for general lighting purposes having the following characteristics:

(a) those with a rated voltage up to 240 volts AC or DC;

(b) those with a rated frequency of 50 Hz for AC;

(c) those with a rated lamp wattage up to 60 Watts; and

(d) those with a rated CCT value from 2700K to 6500K.

The scheme shall apply to LED lamps designed with dimming or non-dimming operations but 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.

LED燈在自願性能源效益標籤計劃須要測試的項目
Testing Parameters for LED Lamps under the VEELS

測試項目	Test Parameters
發光效率	Luminous efficacy
一般顯色指數	General CRI
相關色溫	Correlated Colour Temperature
色度變化 (初始及達至6,000小時)	Change of chromaticity (at initial and 6,000 hours)
功率因數	Power factor
電燈瓦數	Lamp wattage
電源電壓開關測試	Supply voltage switching test
流明維持率	Lumen maintenance
光通量	Luminous flux
光強分佈 (只適用於定向LED燈)	Luminous intensity distribution (for directional LED lamp only)
光束角 (只適用於定向LED燈)	Beam angle (for directional LED lamp only)
中心光強 (只適用於定向LED燈)	Center beam intensity (for directional LED lamp only)

能源標籤

LED燈的“確認式”能源標籤（見圖1所示）均附有產品類別及註冊號碼等資料，以方便市民購買時作出選擇。

Energy Label

The “Recognition Type” Energy Label for LED lamps as shown in Figure 1 listed the type and registration number of the appliances, which helps to facilitate the customer in their purchasing decision.

(圖1) Figure 1

有關計劃的詳細資料，可於機電工程署網址瀏覽 (http://www.emsd.gov.hk)，亦可致電(852) 2808 3465機電工程署能源效益事務處查詢。

For details of the scheme, please visit the website of EMSD (http://www.emsd.gov.hk). For enquiries, please contact the Energy Efficiency Office of EMSD at (852) 2808 3465.

工作照明設計
Task Lighting Design

工作照明是一種照明設計方式，在特定工作範圍內應用局部照明，並把其餘範圍的照明保持在較低水平。它被視為一種有效的能源管理措施，以節省用於辦公室照明的能源。

Task lighting is a lighting design approach where local lighting is applied for specific task areas, leaving other areas at lower ambient illumination level. It is considered as one of the effective energy management measures to save energy in office lighting.

辦公室的工作照明設計 Task Lighting Design in Offices

當進行辦公室照明設計時，可參考有關的專業團體出版的刊物所刊載的辦公室照明設計水平(參考以下列表)。

When carrying out lighting design in offices, reference could be made to the publications published by relevant professional bodies (refer to the table below).

	SLL/CIBSE*	IESNA**
主要以屏幕工作的辦公室 Office for mainly screen based work	**300 lux**	150 to 300 lux (depend on nature of specific task) (視乎特定工作的性質而定)
主要以文書工作的辦公室 Office for mainly paper based work	**500 lux**	300 to 500 lux (depend on nature of specific task) (視乎特定工作的性質而定)

*英國特許屋宇設備工程師學會(CIBSE)轄下的燈光和照明學會(SLL)出版的“The SLL Lighting Handbook, 2009”
**北美照明工程學會(IESNA)出版的“The IESNA Lighting Handbook Reference and Application, 10th Edition, 2011”

節能潛力 Energy Saving Potential

工作照明的應用，可以有效地降低裝置的照明功率密度，從而減少照明的能源消耗。例如，把空間的環境照明從500 lux降低至300 lux時，照明水平會減少百分之四十。然而，在不同的地點所節省的能耗亦會有所不同。這是由於需要較高照明水平範圍的比例、工作燈在每天裡需要開著的時間、所選用的照明燈具、工作燈所需的數量、照明燈具的排列距離、空間上的限制(例如房間的尺寸)和天花板的格局等都會影響到工作照明設計的節能潛力。

The application of task lighting can effectively lower the lighting power density of the installation and hence lighting energy consumption. For example, when reducing the ambient illumination level of a space from 500 lux to 300 lux, the illumination level will be reduced by 40%. However, actual energy saving in real life application cases would be different from site to site as the proportion of lit up areas with tasks needing higher illumination level, the duration of task lights to be operated during the day, choice of lighting fixtures, quantities of task lights required, spacing of lighting fixtures, dimensional constraints (e.g. room dimensions) and ceiling grid pattern etc. will also affect the energy saving potential.

工作照明設計的主要考慮 Key Considerations in Task Lighting Design

工作照明設計需要處理有關環境照明和工作燈的事宜。一般例子如下：

Task lighting design needs to deal with issues relating to both ambient lighting and task light. The following are some typical examples:

1. 光分佈和均勻度
   Light distribution and uniformity
2. 工作範圍與周圍的光線對比
   Light contrast between surrounding and task areas
3. 照明的眩光
   Glare from lighting
4. 環境照明的燈光控制
   Lighting controls for ambient lighting

示意圖顯示一個一般的工作照明系統，它的辦公室的環境燈光減少，並在工作範圍內配置輔助的燈具

Illustration of a typical task lighting system with less ambient lighting together with additional luminaires at the task areas

欲知更多資料，請瀏覽以下網址: http://www.emsd.gov.hk/ 閱覽或下載「工作照明設計」小冊子。

For more information, please visit the following weblink: http://www.emsd.gov.hk/ to read or download the pamphlet on Task Lighting Design.

Regulatory Control of Fresh Water Cooling Towers under 引用《衞生及市政條例》the Public Health and Municipal Services Ordinance (PHMSO) 規管淡水冷卻塔

機電工程署抽樣巡查淡水冷卻塔

妥善操作及維修淡水冷卻塔以避免冷卻塔受污染及對公眾人士構成妨擾，是冷卻塔擁有人的基本責任。機電工程署現已在每年巡查淡水冷卻塔時抽樣檢測水樣本，以監察冷卻塔擁有人有否妥善地履行操作及維修責任，確保水質處於滿意水平。

Sampling Inspection of Fresh Water Cooling Towers by EMSD

It is the basic responsibility of owners of cooling towers to ensure their proper operation and maintenance to prevent contamination and nuisances to the public. EMSD has been conducting water sampling tests during yearly inspections of cooling towers for monitoring if the owners have properly discharged their operation and maintenance responsibilities to ensure the water quality at a satisfactory level.

從冷卻塔採集水樣本
Collection of water sample from cooling tower

檢查冷卻塔
Inspection of cooling tower

機電工程署的規管行動

機電工程署會根據水樣本的退伍軍人病菌檢測結果採取以下行動：

(a) 如退伍軍人病菌數量等於或超過其上限值(即每毫升1000菌落)，機電工程署會根據《公眾衞生及市政條例》向冷卻塔擁有人發出「妨擾事故通知」，要求擁有人按照機電工程署的《水冷式空調系統實務守則》，為冷卻塔進行緊急消毒。不遵從「妨擾事故通知」的規定即屬違法。

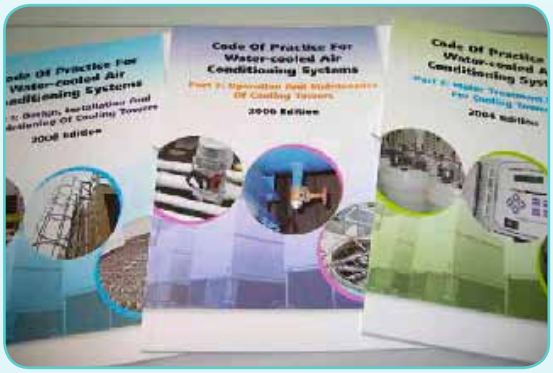
(b) 如退伍軍人病菌數量處於每毫升10至1000菌落的範圍，機電工程署會向冷卻塔擁有人發出勸誡信，敦促擁有人按照《水冷式空調系統實務守則》進行在線消毒，令水質回復正常。

Regulatory Actions by EMSD

EMSD will take the following actions according to the water sampling results of Legionella bacteria count (LBC) –

(a) If the LBC is at or above the upper threshold of 1,000 cfu/ml, EMSD will issue a nuisance notice under the PHMSO to require the tower owner to carry out emergency decontamination as per EMSD's Code of Practice for Water-cooled Air Conditioning Systems (CoP). Failure to comply with the nuisance notice's requirements will be guilty of an offence.

(b) If the LBC is in the range of 10 ≤ LBC<1000 cfu/ml, EMSD will issue an advisory letter to ask the tower owner to take actions to restore the water quality to normal through on-line disinfection as per the CoP.



水冷式空調系統實務守則
Code of Practice for Water-cooled Air Conditioning Systems

於機電工程署網頁公佈水樣本檢測結果

由2011年12月起，機電工程署已於網頁公布水樣本檢測結果及因應驗出退伍軍人病菌數量等於或超過每毫升1000菌落而發出的「妨擾事故通知」的淡水冷卻塔所在建築物地點，並定期更新有關資料。(http://www.emsd.gov.hk/emsd/chi/pps/oa_ct_stat.shtml)

Publication of Water Sampling Results on EMSD Website

Since December 2011, EMSD has been publishing water sampling results and building locations of cooling towers detected with LBC ≥ 1,000 cfu/ml with nuisance notices issued on the EMSD website with regular update (http://www.emsd.gov.hk/emsd/eng/pps/oa_ct_stat.shtml).

如欲取得更多更新資料，可瀏覽機電工程署規管冷卻塔網頁:
http://www.emsd.gov.hk/emsd/chi/pps/oa_ct.shtml

Please visit EMSD website for more information on updates of regulatory actions taken by EMSD:
http://www.emsd.gov.hk/emsd/eng/pps/oa_ct.shtml

NEW 新版的 能源消耗基準工具 Energy Benchmarking Tools

機電工程署能源效益事務處自2001年起，委託顧問研究並開發一套適用於香港特定的能源消耗組別的能源消耗指標和基準工具。

The Energy Efficiency Office (EEO) of Electrical and Mechanical Services Department (EMSD) has commissioned studies to develop energy consumption indicators and benchmarking tools for various selected energy-consuming groups in Hong Kong since 2001.

圖1 - 新版的能源消耗基準工具
Figure 1 - New Energy Benchmarking Tools

能源消耗指標和基準有助能源消耗單位了解他們在同類群體中相對的能源消耗水平和表現。此外，能耗指標及基準亦有助增進香港市民對能源效益的觀念和意識。

The energy consumption indicators and benchmarks serve to allow the energy-consuming groups to understand their energy consumption levels and performances with respect to corresponding peers. It helps to foster efficient energy consumption concept and to promote awareness of the general public in Hong Kong.

圖2 - 能源消耗指標
Figure 2 - Energy Consumption Indicator

最近，機電工程署對68項能源消耗組別的能耗數據作出更新及檢討，其中涵蓋住宅、商業和運輸類別如下：

Recently, EMSD has updated and reviewed the energy consumption profiles for a total of 68 energy-consuming groups that covers residential, commercial and transport sectors as follows -

- 住宅: 6個能源消耗組別
  Residential Sector: 6 energy-consuming groups
- 商業: 32個能源消耗組別
  Commercial Sector: 32 energy-consuming groups
- 運輸: 30個能源消耗組別
  Transport Sector : 30 energy-consuming groups

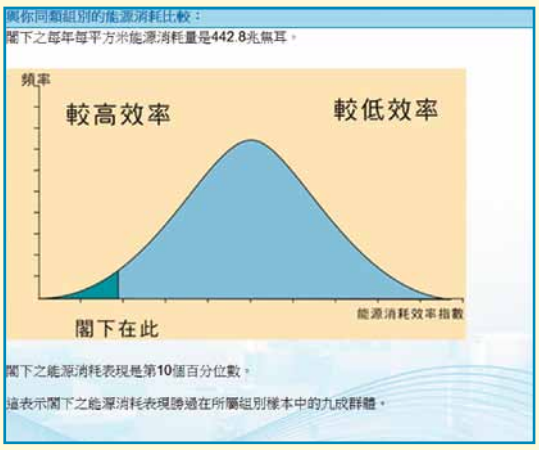


圖3 - 能源消耗比較
Figure 3 – Benchmark Result

更新及檢討過程是透過在2008至2009年間進行廣泛而深入的實地調查所獲得的數據來確定一系列影響能源消耗的因素，這些因素包括研究對象的運作及本身特性、最終用途技術與設備和能源消耗水平，從而評估出對該能源消耗組別最具影響的因素。

The update and reviews were accomplished by carrying out extensive and in-depth field survey conducted between 2008 and 2009 to identify a series of affecting factors regarding the operational and physical characteristics of concerned subjects, end-use technologies & equipment and energy consumption levels in order to evaluate the most influencing factors for the respective energy-consuming groups.

新版的能源消耗基準工具是按照調查和分析結果而建立，評估的結果並以能源消耗指標和基準來表示。該工具可讓一般市民透過跟運作及本身特性相近的同組別對象作比較，從而對能源消耗表現作出評估。能源消耗基準工具可在以下機電工程署網頁瀏覽 http://ecib.emsd.gov.hk/

New Energy Benchmarking Tools were hence developed in accordance with the survey results, subsequent analysis and resulted in expression of energy consumption indicators and benchmarks. It facilitates the general public to assess their energy consumption performances as compared with other subjects in the same energy-consuming group in Hong Kong with similar operational and physical characteristics. Benchmarking Tools is available from the web pages of EMSD at http://ecib.emsd.gov.hk/

教育徑

《建築物能源效益條例》和「能源效益標籤計劃」全新互動展品

Education Path - New Exhibits on BEEO & EELS

為向市民致力推廣節約能源、能源效益及可再生能源的資訊，機電工程署於總部大樓設有教育徑，歡迎各團體和學校申請參觀。

為配合機電工程署在能源效益的最新發展，展覽館剛新增2台互動展品，協助推廣「能源效益標籤計劃」及已立法推行的《建築物能源效益條例》。透過互動小遊戲，市民可加深對各類能源效益標籤的認識，以助挑選具較高能源效益的電氣產品。此外，參觀者亦能了解建築物內照明、電力、空調和升降機及自動梯裝置的能效規定，如何提升建築物的能源效益，從而減少溫室氣體排放，為環保出一分力。

In order to promote conservation of energy, energy efficiency and renewable energy to public, EMSD Headquarter features an Education Path for different organizations and schools to apply for visiting.

Recently, two interactive exhibits have been installed to cope with the latest development in EMSD to promote the "Energy Efficiency Labelling Scheme" and the newly enacted "Buildings Energy Efficiency Ordinance". Through the simple interactive games, visitors can understand more about various types of energy labelling to facilitate selection of the electrical appliances with higher energy efficiency. They can also understand how the energy efficiency requirements for lighting, electrical, air conditioning and lift and escalator installations can enhance the energy efficiency inside a building which can reduce the greenhouse gases emission and protect our environment.

全新互動展品 - 認識能源標籤
New Exhibit - Understanding Energy Label

全新互動展品 -《建築物能源效益條例》下的能源守則
New Exhibit - Energy Codes of BEEO

新展品的背面介紹《條例》下的「註冊能源效益評核人」
On the back of the new exhibit, there is an introduction of Registered Energy Assessor (REA) under the BEEO

通識科教材套 Liberal Studies Education Kit

機電工程署在2011年3月出版了一套「機電安全與能源效益」新高中學制通識教材，全套四本，分別介紹「機電安全」、「能源效益」、「可再生能源」及「高能效建築物」。這套教材是根據課程發展議會與香港考試及評核局聯合出版的「通識教育科課程及評估指引」中的「今日香港」和「能源科技與環境」單元編寫，適合中四至中六的教師與學生於課堂使用。

「機電安全」透過認識六種受機電工程署規管的設備或裝置（電力、氣體、升降機及自動梯、鐵路、機動遊戲機及架空纜車），了解機電及氣體安全如何影響我們的生活質素。「能源效益」從能量原理、能源與環境和能源效益設備等角度討論能源效益與日常生活的關係。「可再生能源」介紹各式各樣的可再生能源和它們在香港的應用情況。「高能效建築物」簡介建築物的能源使用和如何提高建築物的能源效益。此教材套內容豐富，簡單易用，方便中學師生進行通識教學活動。電子書及PDF檔可在以下機電工程署網頁瀏覽 http://www.emsd.gov.hk/emsd/chi/about/pe_ek.shtml

Electrical and Mechanical Services Department published an education kit on Electrical and Mechanical Safety and Energy Efficiency in March 2011. There are four booklets in the kit, i.e. Electrical and Mechanical Safety, Energy Efficiency, Renewable Energy and Energy Efficient Building. The kit was written in accordance with the Hong Kong Today module and the Energy Technology and the Environment module of the Liberal Studies Curriculum and Assessment Guide jointly prepared by the Curriculum Development Council and the Hong Kong Examinations and Assessment Authority. It is suitable for teachers and students at classes Secondary 4 to 6.

The Electrical and Mechanical Safety booklet appreciates how electrical, mechanical and gas safety contribute to the quality of life through six EMSD-regulated applications/installations (electricity, gas, lifts and escalators, railway, amusement rides, and aerial ropeways). The Energy Efficiency booklet discusses the energy principles, energy and the environment, and energy efficient installations and how they are related to daily life. The Renewable Energy booklet shows different types of renewable energy and their applications in Hong Kong. The Energy Efficient Building introduces the energy use in buildings and how to improve the energy efficiency of buildings. This education kit has many useful materials arranged in a user-friendly format to help both teachers and students in secondary schools to conduct liberal studies activities. The e-books and PDF files are available from the web pages of EMSD at http://www.emsd.gov.hk/emsd/eng/about/pe_ek.shtml

圖一: 機電安全與能源效益教材
Figure 1: Electrical and Mechanical Safety and Energy Efficiency Education Kit

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Anyone wishing to offer comments or make enquiries about this newsletter can contact us at:
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