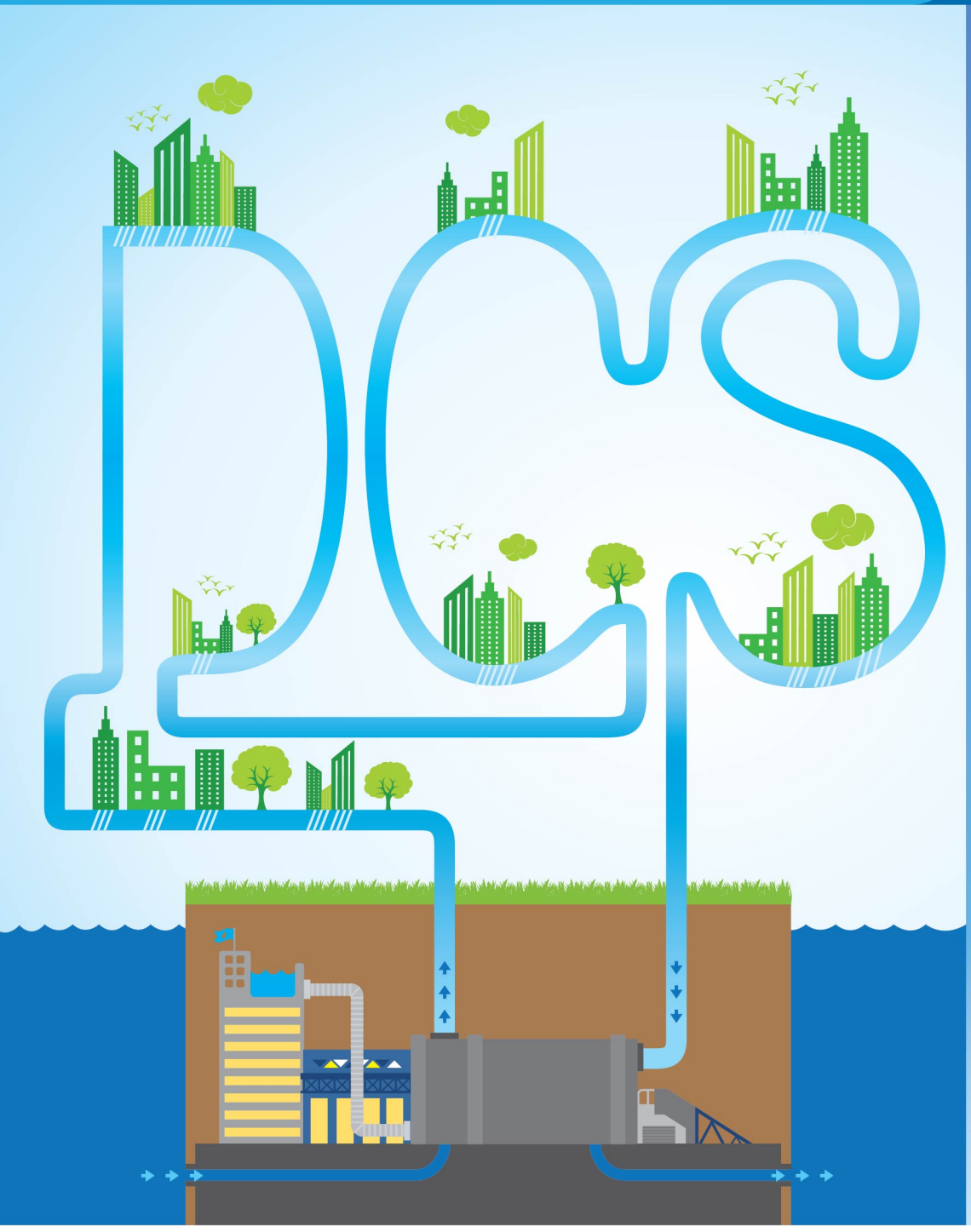
能源效益及相關事項通訊
A Newsletter on Energy Efficiency and Related Matters

二〇一四年 七月 Jul 2014

EnergyWits 智能

第二十三期 ISSUE NO. 23



本期內容 Contents

珍惜資源 全民節能

機電工程署
EMSD

啟德發展區區域供冷系統

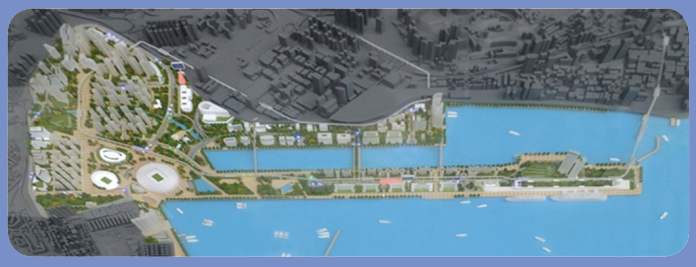
District Cooling System at Kai Tak Development

區域供冷系統是一個大型中央空調系統，在中央供冷站製造冷凍水，並透過地下水管網絡把冷凍水輸送到啟德發展計劃的用戶樓宇。這個工程計劃包括興建北部供冷站、南部地下供冷站和海水泵房，敷設海水入水及排水管道和冷凍水配水管道網絡，以及為啟德發展計劃的用戶樓宇提供接駁設施。建造費用約為49億5仟萬元。預計此項目能為約170萬平方米的非住宅發展項目提供冷凍水，總製冷量約為284兆瓦，相等於40座30層高商業大廈的冷量需求。區域供冷系統已於2013年2月開始營運，目前正提供冷凍水給啟德郵輪碼頭和晴朗商場。

District Cooling System (DCS) is a large scale centralized air-conditioning system which produces chilled water at its central chiller plants and distributes the chilled water to user buildings in Kai Tak Development (KTD) through an underground water piping network. The scope of works comprises the construction of a northern chiller plant, a southern underground chiller plant and underground seawater pumphouse, laying of seawater intake and discharge pipelines, laying of chilled water distribution pipe networks, and provision of connection facilities at user buildings at KTD. The cost of the whole DCS project is around $4,950 million. It is planned that the DCS will serve about 1.7 million m^2 of non-domestic air conditioned floor area with a total cooling capacity of about 284 megawatt of refrigeration (MWr), which is equivalent to the cooling load of about 40 nos. 30-storey commercial buildings. DCS operation commenced in February 2013, and is currently supplying chilled water to the Kai Tak Cruise Terminal and Ching Long Shopping Centre.

啟德區域供冷系統是以最具能源效益的海水冷卻方法運作。其耗電量較傳統氣冷式空調系統少35%，較獨立使用冷卻塔的水冷式空調系統少20%。在系統完成後，每年可節省高達8,500萬度電，相當於每年減少排放59,500公噸二氧化碳，即約9,000人的一年排放量。

DCS operates under the most energy efficient seawater cooling method. It consumes up to 35% and 20% less electricity respectively as compared with traditional air-cooled air-conditioning systems and water-cooled air-conditioning systems using individual cooling towers. Upon full development, the maximum annual saving in electricity consumption will be up to 85 million kilowatt-hour (kWh), with a corresponding reduction of 59,500 tonnes of carbon dioxide emission per annum. That's equivalent to the emission of 9,000 people in a year.



啟德區域供冷系統服務範圍
Serving area of DCS at KTD

北部供冷站綠化面積比率約為70%，並融入了屋頂綠化和垂直綠化牆於設計內以達至可持續發展
The greening ratio of northern chiller plant area is about 70%. Green roof and vertical green wall are integrated into plant room to attain sustainable development

安裝了不同大小的製冷機組以配合不同的冷凍需求
Chillers of different sizes are installed to meet the varying cooling demand

用戶樓宇內的接駁設施——熱交換器，將區域供冷系統的冷凍水與建築物的次級冷凍水系統進行熱交換
Heat exchanger at user substation which is used to transfer heat between the chilled water supply of DCS and the secondary chilled water system of the user building

正在敷設中的地下冷凍水配水管道
Underground DCS chilled water pipes under construction

由於無需安裝製冷機組，啟德郵輪碼頭的天台可騰出作空中花園之用
The roof top of Kai Tak Cruise Terminal is freed up to become a park as no chiller plant is required

用戶樓宇在接駁區域供冷系統後，無需安裝獨立的製冷機組和相關機電設備。此舉不但使建築物設計更具彈性，還能消除因操作相關設備所產生的噪音、震動和熱力。估計所減省在建築物裝設製冷機組的前期建設費用，約佔總建築成本的5-10%。

By connecting to the DCS, user buildings do not need to install their own chillers and the associated equipment. This not only allows more flexible building designs; but also eliminates noise, vibration and heat arising from operation of such equipment. The reduction of upfront capital cost for installing chiller plants at user buildings can be up to 5-10% of the total building cost.

晴朗商場為啟德區域供冷系統客戶之一
Ching Long Shopping Centre is one of the KTD DCS consumers

路燈的節能技術
Application of Energy Saving Technology in Road Lighting

路政署一直積極尋求各種節能技術，並配合本地環境以應用於路燈設備。現時，本港的路燈已普遍採用高能源效益的高壓鈉燈，其效能由低瓦數燈泡的約每瓦90流明至高瓦數燈泡的每瓦150流明。採用這些高壓鈉燈後，相比舊款的路燈設備能節省約30%的用電量。

Highways Department (HyD) has been actively pursuing energy saving technology in road lighting to suit the local environment. At present, road lighting in Hong Kong is generally deploying High Pressure Sodium (SON) lamps which are of highly-efficient type. The low wattage SON lamps have an efficacy of about 90 lumen per watt while the high wattage ones can reach 150 lumen per watt. Deployment of these lamps has resulted in saving of about 30% electricity consumption as compared with the old road lighting equipment.

高壓鈉燈
SON lamp

路燈調光技術 Road Light Dimming Technology

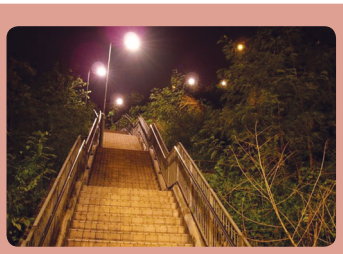
由於高壓鈉燈燈泡的瓦數以固定級數遞增(50瓦、70瓦、100瓦、150瓦、250瓦、400瓦及600瓦)，當路段所需的光度介乎於兩級燈泡瓦數之間時，較高瓦數的燈泡便被採用，以確保該路段有足夠的照明。近年，路政署利用電子鎮流器能把光度調低至合適水平，以節省電量。至2014年底，會有20,000盞路燈安裝電子鎮流器。

SON lamp wattages are ascending in discrete values (50W, 70W, 100W, 150W, 250W, 400W & 600W). When the illumination need of a road section is in between two discrete wattages, the higher one will be applied to ensure sufficient lighting level. In recent years, to reduce power consumption, electronic ballasts have been adopted to dim down the lighting to an optimum level. A total of 20,000 road lights will be installed with electronic ballasts by the end of 2014.

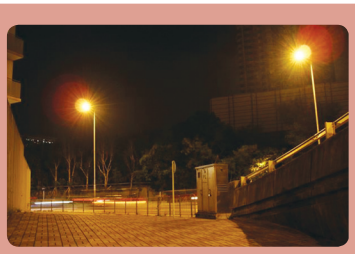
電子鎮流器
Electronic ballast

採用白光照明 Use of White Light

在歐洲國家，由於白光光源的顯色性較佳，白光燈已經逐漸被廣泛使用。根據國際標準，在一些特定地方可採用白光，在不影響安全的前題下減低光度要求，從而達到節能效果。至2013年底，路政署已於一些輔助道路如行人路、後巷、單車徑及露天停車場等地安裝了2,650盞陶瓷金屬鹵化物白光燈。另外，有33個公共交通交匯處亦已採用白光燈，以達到節能及改善照明的效果。



陶瓷金屬鹵化物路燈
CDM road lights



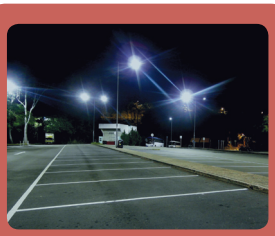
高壓鈉路燈
SON road lights

In European countries, white light has become popular because of its better colour rendering. The international lighting code specifies that lower lighting level can be adopted for using white light at specific locations so as to save energy without compromising safety. Up to end 2013, 2,650 Ceramic Discharge Metal Halide (CDM) lamps, one kind of white lights, have been installed by HyD in subsidiary roads such as footpaths, rear lanes, cycle tracks, open car parks, etc. In addition, 33 public transport interchanges has also adopted white light for energy saving and lighting improvement.

發光二極管 Light Emitting Diode (LED)

近年，發光二極管路燈技術迅速發展，其好處是壽命較長和低耗電。現時，路政署已為發光二極管路燈進行小規模的試驗計劃，以對其表現、耐用性、成本效益及市民的接受程度進行評估。由於發光二極管路燈的價格仍然偏高，現時仍未有計劃廣泛採用該款路燈，但路政署會繼續留意有關技術及市場的發展。

In recent years, technology of LED road light develops rapidly because of its benefits in long lamp life and less energy consumption. At present, HyD has conducted small-scaled trials in various locations to assess the performance, reliability, cost-effectiveness and public acceptance of LED road lights. Since the current price level is still high, there is no plan to widely adopt LED road lights at this stage. However, HyD will keep track of its technology and market development.



發光二極管路燈於停車場試用
LED road lights trial scheme at car park

展望：路政署會繼續留意各類節能技術的發展，致力為香港市民提供一個安全、可靠及可持續發展的公共照明系統
Way forward: HyD will continue to keep track of the development of energy saving technologies in order to provide a safe, reliable and sustainable public lighting system in Hong Kong

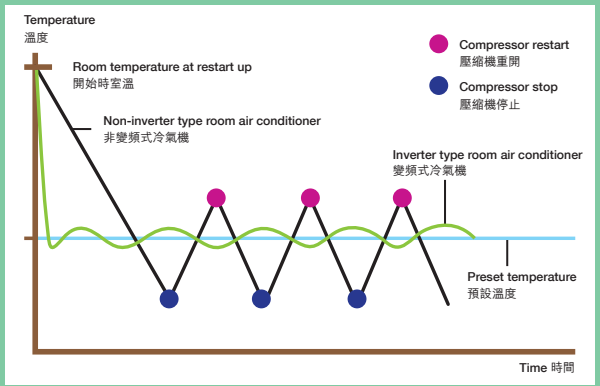
變頻式冷氣機
Inverter type room air conditioner

傳統非變頻式冷氣機主要由壓縮機和簡單的恆溫控制系統組成，系統不能獨立控制壓縮機的輸出冷量，只可以控制壓縮機的開關，以達致調控溫度的效果。當室內溫度低於預設溫度時，恆溫控制系統便會關掉壓縮機，等待室溫回升並高於預設溫度後，恆溫控制系統便會重開壓縮機。因此可見，室溫是會時高時低，比較波動。而且，當室溫低於預設溫度時，便會浪費能源。

變頻式冷氣機的基本結構和製冷原理跟傳統非變頻式冷氣機相似，主要分別在於變頻式冷氣機採用了變頻技術專用的壓縮機，備有性能穩定的調節系統作精確恆溫調控，避免冷氣機經常啟動開關，較一般非變頻式冷氣機操作寧靜及更有效節省能源。

一般而言，當室內溫度遠高於預設溫度，變頻式冷氣機能跟據室內溫度情況精確地調控製冷輸出，使室溫迅速到達預設溫度。然而，當室溫接近預設溫度後，變頻控制系統會自動減低壓縮機的運轉速度，降低壓縮機的製冷輸出，把室溫精確地調控於預設溫度，避免室溫低於預設溫度，引致浪費能源的情況發生。

直至2013年底，強制性能源效益標籤計劃已涵蓋了本地市場大約200個變頻式冷氣機型號。根據申請強制性能源效益標籤計劃所提交的測試報告，在本地市場的變頻式冷氣機滿載時，能源效益表現一般比傳統非變頻式冷氣機高約10%。然而，實際節省能源及調控溫度的效果，則須視乎室內空間情況和使用地點而定。



使用變頻式冷氣機和非變頻式冷氣機典型室內溫度波動示意圖
Diagram showing typical room temperature fluctuation using an inverter type room air conditioner and a non-inverter type room air conditioner

A traditional non-inverter type room air conditioner consists of a compressor and a simple temperature control unit. This temperature control unit maintains the room temperature by switching on and off the compressor. However, it cannot control the cooling output of the compressor. When the room temperature is lower than the preset temperature, the compressor will be turned off. When the room temperature increases and is higher than the preset temperature, the compressor will be turned on again. Thus, the room temperature fluctuates significantly. When the room temperature is lower than the preset temperature, energy is wasted.

An inverter type room air conditioner is similar to a non-inverter type room air conditioner in its basic construction and the principle of cooling. Their major difference is the type of compressor equipped. An inverter type room air conditioner is equipped with a variable speed compressor, which maintains room temperature accurately and avoids frequent shutdown and restart of the air conditioner. Comparing with a non-inverter type room air conditioner, it is more quiet and energy efficient.

An inverter type room air conditioner can control the cooling output to suit the room temperature. When the room temperature is much higher than the preset temperature, the compressor increases its cooling output to lower room temperature instantaneously. When the room temperature is close to the preset temperature, the inverter controller automatically decreases the rotating speed of the compressor. Hence, the cooling output of the room air conditioner can be lowered. The room temperature can thus be maintained accurately at the preset temperature and prevented from further lowering beyond the preset temperature. As a result, energy wastage can be avoided.

At the end of 2013, there were about 200 models of inverter type room air conditioners in the local market covered by the Mandatory Energy Efficiency Labelling Scheme (MEELS). Energy efficiency performance data extracted from test reports for the application of energy efficiency labels under MEELS was analyzed. It is observed that the energy efficiency performance of inverter type room air conditioners in the local market is generally better than traditional non-inverter type room air conditioners by about 10% at full load condition. However, the actual energy saving potential and the performance in maintaining room temperature is site specific and depends on the actual conditions of the indoor environment.

提升《建築物能源效益守則》2012年版的照明功率密度標準

Upgrade of Lighting Power Density Standards in Building Energy Code 2012 Edition

為進一步提升建築物能源效益，《建築物能源效益守則》2012年版的照明功率密度標準現已提升，並於2014年2月28日刊登在政府憲報公告第1255號。在釐定新修訂的標準時，機電工程署參考了按照《建築物能源效益條例》（簡稱《條例》）而呈報的「主要裝修工程」中，涉及照明裝置的照明功率密度數據及海外地區的相關標準。整體而言，今次修訂有助提升建築物內照明裝置的能源效益達10-15%。下表列出部分修訂標準。

To further enhance building energy efficiency, the lighting power density (LPD) standards in the Building Energy Code (BEC) 2012 Edition have been upgraded and gazetted on 28 February 2014 in the Government Gazette Notice No. 1255. When revising the LPD standards, the Electrical and Mechanical Services Department (EMSD) has made reference to the LPD data of lighting installations of "major retrofitting works" reported in the submissions under the Buildings Energy Efficiency Ordinance (BEEO) as well as relevant overseas standards. In general, the revision contributes to an improvement by 10-15% in lighting energy efficiency of buildings. The following table lists out some of the revised LPD standards.

空間類別 Type of Space	最高許可照明功率密度 Maximum Allowable Lighting Power Density （瓦／平方米）(W/m²)	
	初版 Initial Version	第一版修訂 Revision 1
入口大堂 Entrance Lobby	15	14
公眾通道 Public Circulation Area	15	13
升降機大堂 Lift Lobby	12	11
走廊 Corridor	10	8
停車場 Car Park	6	5
廁所／洗手間／浴室 Toilet / Washroom / Shower Room	13	11
辦公室 Office	15	13
會議室／研討室 Conference / Seminar Room	16	14
食肆 Restaurant	20	17
零售店舖 Retail	20	17

新修訂的照明功率密度標準對新建建築物及「主要裝修工程」各有不同的生效日期。
The revised LPD standards will take effect on different dates for new buildings and the "major retrofitting works".

各類空間的照明功率密度標準現已提升
The LPD standards of various types of space have been upgraded

新建建築物

根據《條例》，首階段聲明須於建築事務監督就上蓋建築物發出「建築工程展開同意書」當日起兩個月內呈交機電工程署。就發出首階段聲明而言，新修訂的照明功率密度標準將於2014年8月28日生效。換言之，新標準適用於由發展商在2014年8月28日或以後簽發的首階段聲明所涵蓋的照明裝置。

New Buildings

Pursuant to the BEEO, Stage One Declaration must be submitted to EMSD within 2 months after the day on which the consent to the commencement of building works is given by the Building Authority for the superstructure construction. The revised LPD standards will take effect on 28 August 2014 in respect of the issue of Stage One Declaration. In other words, the revised standards apply to the lighting installations covered in a Stage One Declaration signed by a developer on or after 28 August 2014.

主要裝修工程

根據《條例》，在訂明建築物的單位或公用地方完成「主要裝修工程」後的兩個月內，負責人（業主、租客或佔用人等）須向「註冊能源效益評核人」（評核人）取得遵行規定表格。就發出遵行規定表格而言，新修訂的照明功率密度標準將於2014年11月28日生效。換言之，新標準適用於評核人在2014年11月28日或以後簽發的遵行規定表格所涵蓋的照明裝置。

Major Retrofitting Works

Pursuant to the BEEO, the responsible person (such as owner, tenant or occupier etc.) is required to obtain a Form of Compliance (FOC) from a Registered Energy Assessor (REA) within 2 months after the completion of the "major retrofitting works" in a unit or common area of a prescribed building. The revised LPD standards will take effect on 28 November 2014 in respect of the issue of FOC. In other words, the revised standards apply to the lighting installations covered in a FOC signed by an REA on or after 28 November 2014.

有關上述修訂詳情及《條例》其他規定，請瀏覽《條例》的專題網站：
For more details of the above revisions and other requirements under the BEEO, please visit our dedicated website at:

http://www.beeo.emsd.gov.hk

新型號的電動車
New Models of Electric Vehicles

電動車沒有任何尾氣排放。因此，政府正積極鼓勵各界使用電動車來改善路邊空氣質素和減少溫室氣體排放，以建設低碳及綠色經濟。

截至2014年4月底，全港共有626部電動車輛在路面行走，相比2010年底只有少於100輛為高。目前，已有來自7個國家的26個電動車輛型號獲得運輸署的類型核准，包括15款私家車／電單車及11款公共運輸／商業車輛。

隨著電動車技術的不斷發展，電動車的設計已可滿足潛在用戶的不同要求。因此，和其他大城市一樣，香港將會有更多不同種類的新型號電動車從外地輸入。

As electric vehicles (EV) have no tailpipe emissions, the Government has been promoting the wider use of electric vehicles so as to help improve roadside air quality and reduce greenhouse gas emissions as well as to establish low carbon and green economy.

As at end April 2014, there are 626 EVs in use, which is higher than that of less than 100 in end 2010. At present, 26 EV models from seven countries have been type-approved by the Transport Department (TD), including 15 models for private cars and motorcycles, and 11 models for public transport and commercial vehicles.

With the continual development in EV technologies, EVs are designed to meet different requirements of the potential users. As such, more new EV models of various types will be imported to Hong Kong just like other metropolitan cities.

電動私家車

特斯拉Model S和寶馬i3都是已獲運輸署類型核准的電動私家車，並將很快登陸香港。

除新型號外，三菱iMiEV，日產LEAF和雷諾的Fluence Z.E.都是較受歡迎的電動私家車。

這些電動私家車的主要技術規範表列如下：

Electric Private Car

Tesla Model S and BMW i3 are new models of electric private cars type - approved by TD and will embark Hong Kong very soon.

Other than the new models, Mitsubishi iMiEV, Nissan LEAF and Renault Fluence Z.E. are the popular electric private cars.

The major technical specifications of these electric private cars are tabulated below:

電動車型號 EV Model	座位 Seat	電池容量 Battery Capacity	續航力 Driving Range	充電標準 Charging Standard
BMW i3	4	16kWh	160km	IEC 62196
Tesla Model S	5	60kWh	370km	IEC 62196
Renault Fluence Z.E.	5	22kWh	185km	SAE J1772
Nissan LEAF	5	24kWh	160km	SAE J1772, CHAdeMO
Mitsubishi iMiEV	4	16kWh	160km	SAE J1772, CHAdeMO

寶馬i3電動車
BMW i3 electric vehicle

特斯拉Model S電動車
Tesla Model S electric vehicle

電動的士

自2013年年中，比亞迪已開始在香港營運的士車隊，目前已進口了45輛e6電動的士提供服務。為了方便電動的士的營運，他們已於全港12個不同地點建立了自己的充電站。

Electric Taxi

BYD has commenced its taxi fleet operation in Hong Kong since mid 2013 and currently has imported 45 nos. of their e6 electric taxis to provide service. To facilitate the operation of electric taxis, they have established their own charging stations in 12 venues in different areas over the territory.

比亞迪e6電動的士
BYD e6 electric taxi

電動車型號 EV Model	座位 Seat	電池容量 Battery Capacity	續航力 Driving Range	充電標準 Charging Standard
BYD e6	4	67kWh	300km	GB 20234

電動巴士

私人電動巴士自去年已引入香港，它們可乘載45至60人。三款不同型號的私人電動巴士都是從內地進口，即華夏神龍、飛燕和五洲龍。

Electric Buses

Electric private buses have been introduced to Hong Kong since last year. They have a passenger capacity ranging from 45 to 60 persons. These three models, namely Great Dragon, Feiyan and Wuzhoulong, are all imported from the Mainland.

電動車型號 EV Model	座位 Seat	電池容量 Battery Capacity	續航力 Driving Range	充電標準 Charging Standard
Great Dragon	49	350kWh	250km	GB 20234
Feiyan	45	350kWh	280km	GB 20234
Wuzhoulong	60	245kWh	210km	GB 20234

華夏神龍49座位電動巴士
Great Dragon 49 seat electric bus

飛燕45座位電動巴士
Feiyan 45 seat electric bus

五洲龍60客位電動巴士
Wuzhoulong 60 passenger electric bus

「室內溫度節能約章」— 全民節能

Energy Saving Charter on Indoor Temperature
Save Energy Go Green

政府一直以節約能源作為應對氣候變化的工作重點。香港建築物佔全港九成耗電量，相當於超過六成的溫室氣體排放，而空調裝置約佔全港三分之一的總耗電量。政府自2012年起推行「室內溫度節能約章」計劃，獲得不少商場、商舖、辦公室大樓和辦公室支持，承諾在夏天把室內溫度維持在攝氏24至26度。

政府今年進一步把「室內溫度節能約章」推廣至住宅大廈及屋苑。截至2014年5月28日為止，34家發展商及管理公司已承諾在6月至9月期間，在他們旗下超過130多家商場的公用地方，維持平均室內溫度在攝氏24至26度之間，亦有超過450間商舖、220座辦公室大樓、820家辦公室，及142個屋苑和約80幢住宅大廈的公共地方簽署約章。所有參與機構將在其場所內張貼室內溫度節能約章及相關宣傳物品，向其員工、顧客和廣大市民傳遞節能信息。

Promoting energy saving is the linchpin to our efforts in combating climate change. Buildings account for 90% of total electricity consumption in Hong Kong and contribute more than 60% of the greenhouse gas emissions. One-third of total electricity consumption are caused by air-conditioning. The Energy Saving Charter Scheme has been well received by many shopping malls, shops, office premises and offices since its launch in 2012. The participants have pledged to maintain an average indoor temperature between 24 and 26 degrees Celsius.

This year, the Government is extending the charter scheme to residential buildings and housing estates. As of 28 May 2014, a total of 34 developers and property management companies have pledged to maintain the average indoor temperature of common areas at over 130 shopping malls between 24 and 26 degrees Celsius from June to September. In addition, more than 450 shops, 220 office premises, 820 offices, and the common areas of 142 housing estates and some 80 residential buildings have signed up for the charter. All participants will display the Energy Saving Charter on Indoor Temperature and relevant publicity materials at their premises to disseminate the message of energy saving to their staff, customers and the general public.

「室內溫度節能約章2014」啟動禮

環境局局長黃錦星於2014年5月29日主持「室內溫度節能約章2014」啟動禮時指出，溫室氣體在大氣中的濃度已達到80萬年的最高水平，面對全球氣候變化，節約能源以減少碳排放實在刻不容緩。他希望藉著以全民節能為目標的「室內溫度節能約章」，鼓勵社會各界及市民同心協力實踐節能，共同應對氣候變化。

共有超過180名參與約章的發展商、相關機構及環境諮詢組織代表出席節能約章啟動禮。

Launch Ceremony of the Energy Saving Charter on Indoor Temperature 2014

環境局局長黃錦星於「室內溫度節能約章2014」的啟動禮上致辭
The Secretary for the Environment, Mr Wong Kam-sing, spoke at the launch ceremony for the Energy Saving Charter on Indoor Temperature 2014

Officiating at the launch ceremony of the Energy Saving Charter on Indoor Temperature 2014 on 29 May 2014, the Secretary for the Environment, Mr. Wong Kam-sing, pointed out that greenhouse gas concentration in the atmosphere has reached its highest level in the past 800,000 years. In the face of global climate change, there is no time to spare in reducing carbon emissions by saving energy, he said. Noting that the charter scheme has the theme of community-wide participation in energy-saving, Mr Wong expressed the hope that all sectors of the community would work together to save energy and tackle the problems of climate change.

More than 180 representatives of the participating developers, relevant organisations and environmental advisory bodies attended the launch ceremony of the charter scheme.

黃錦星（中）、機電工程署副署長薛永恆（右）及香港天文台助理台長黎守德（左）主持「節能約章」啟動儀式

Mr Wong Kam-sing (middle), the Deputy Director of Electrical and Mechanical Services, Mr Alfred Sit (right), and the Assistant Director of the Hong Kong Observatory, Mr Edwin Lai (left), officiate at the launch ceremony of the Energy Saving Charter

黃錦星(第一行中)、薛永恆(第一行右六)、黎守德(第一行左八)及兩間電力公司代表與支持「室內溫度節能約章」的發展商及管理公司代表合照

Mr Wong Kam-sing (first row, centre), Mr Alfred Sit (first row, sixth right), Mr Edwin Lai (first row, eighth left) and representatives from the 2 power companies in a group photo with representatives of developers and management companies supporting the Energy Saving Charter

黃錦星及其他主禮嘉賓與支持「室內溫度節能約章」的發展商及管理公司代表合照

Mr Wong Kam-sing and other officiating guests in a group photo with representatives of developers and management companies supporting the Energy Saving Charter

地球暖化警示

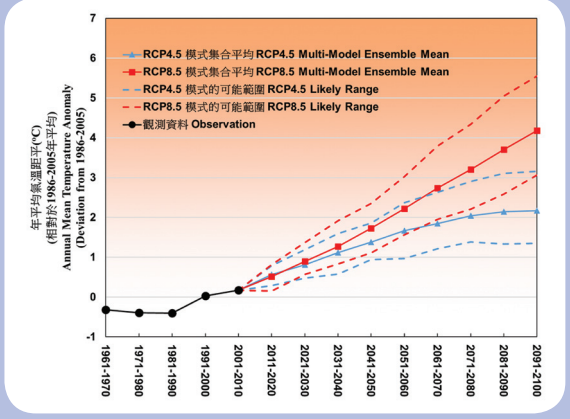
天文台助理台長黎守德在啟動禮上以「地球暖化警示」為題，闡述節約能源對應對氣候變化的重要性。他指出，過去三個年代一個比一個溫暖，21世紀第一個年代是1850年以來最暖。氣溫上升會增加大氣中可容納的水氣含量，加劇水循環，改變降水的特徵和形勢。氣候轉變也會導致極端天氣事件的出現頻率、強度、影響範圍、發生和持續的時間產生變化。海平面受全球變暖的影響而上升，主要是兩個原因：其一是海水受熱膨脹；其二是冰川、冰帽以及格陵蘭和南極洲上的冰蓋融化後流入海洋。一旦熱帶氣旋吹襲時引發風暴潮，沿岸城市和基建設施將更容易被海水淹浸。

Warning of a Warming World

Speaking on the theme of "Warning of a Warming World" at the launch ceremony, the Assistant Director of the Hong Kong Observatory, Mr Edwin Lai, elaborated on the significance of energy saving in combating climate change. He pointed out that each of the last three decades has become successively warmer and the first decade in the 21st century is the warmest since 1850. Increase in air temperature leads to higher moisture-holding capacity in the atmosphere and enhances the hydrological cycle, altering the characteristics and patterns of precipitation. A changing climate also affects the frequency, intensity, spatial extent, timing and duration of extreme weather events. Under the influence of global warming, sea level will rise, mainly due to two processes: firstly, warming and expansion of oceans; and secondly, melting of glaciers, ice caps and the Greenland and Antarctica ice sheets, Coastal cities and infrastructure will become more vulnerable to sea flooding such as in the event of storm surges brought by tropical cyclones.

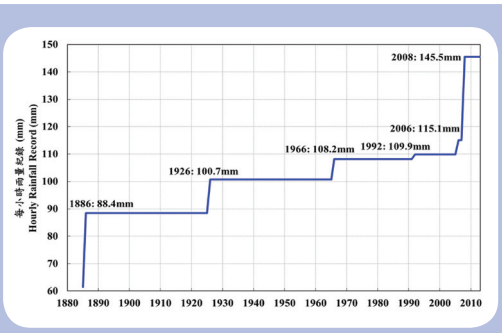
天文台助理台長黎守德闡述節約能源對應對氣候變化的重要性

The Assistant Director of the Hong Kong Observatory, Mr Edwin Lai, elaborated on the significance of energy saving in combating climate change



香港年平均氣溫距平的變化及未來推算
(紅線RCP8.5是一個溫室氣體持續高排放的情景；藍線RCP4.5是一個溫室氣體減少排放的情景)

Past and projected annual mean temperature anomaly for Hong Kong
(RCP8.5 in red is a high greenhouse gas emission scenario; RCP4.5 in blue is a reduced greenhouse gas emission scenario)



香港天文台一小時降雨量的最高紀錄（毫米）(1885年至2013年)
Hourly rainfall records (mm) at the Hong Kong Observatory (1885 – 2013)

參與機構和電力公司經驗分享

部分參與「室內溫度節能約章2013」的機構，包括華懋集團、鷹君集團及信和集團，於啟動禮上分享他們推動「室內溫度節能約章」和其他節能措施的經驗。中華電力和香港電燈亦分享了他們所提供的能源效益服務。

Experience sharing by Participating Organisations and Power Companies

Some of the participating developers who had joined the Energy Saving Charter on Indoor Temperature 2013, including Chinachem Group, Great Eagle Group and Sino Land Company Limited were invited on stage to share their experience in implementing the Charter scheme and other energy efficiency measures. CLP Power and HK Electric also share the energy efficiency and conservation services provided by the two companies.

鷹君集團旗下朗豪坊自2012年連續三年參加由環境局推行的「室內溫度節能約章」計劃。此外，他們更積極呼籲及邀請商場及辦公大樓租戶攜手參與，此計劃不但讓他們減少電費開支，更重要是使租戶養成節能的持續習慣，共同肩負保護環境的責任。

Since 2012, Great Eagle Group's Langham Place has pledged to support and participate in the Energy Saving Charter on Indoor Temperature launched by the Environment Bureau for three consecutive years. In addition, they are committed to encouraging and inviting their shopping mall and office tower occupiers to join this meaningful campaign. Participating in the Charter not only allows them to save on electricity expenses, more importantly, it also helps occupiers to develop a sustainable practice of energy conservation, as well as join hands to take up the responsibility of creating a sustainable environment on earth.

華懋集團積極保育環境，旗下物業管理公司更在日常管理中加入綠色元素。今年，他們的物業管理公司連續兩年支持「室內溫度節能約章」，旨在讓租客、業戶及員工一起感受「優質服務新里程、綠化環境新理想」的願景。

To align Chinachem's commitment to sustainability, the property management arm of the Group implements green initiatives to daily operation. With the vision of 'Maintain Quality Service and Sustain Green Environment' to inspire their tenants, their colleagues and property owners, their property management advocates 'Energy Saving Charter on Indoor Temperature' for a second consecutive year.

信和集團秉承企業公民的精神，一直致力推動可持續發展，以環保為重要準則，透過精心設計與建築規劃、全面的節能措施與管理標準，為環保出一分力。集團自2012年起，參與「室內溫度節能約章」計劃。於2013年，集團旗下共有39項主要商場及寫字樓參與計劃；此外，他們亦邀請超過2,800租戶參加。今年，他們會將計劃伸延至住宅物業。集團期待與持份者攜手共建更綠色的未來。

As a committed corporate citizen, Sino Group is dedicated to promoting sustainable development, and has made sustainability an integral part of their business. They strive to make their properties more eco-friendly through careful architectural planning, energy-saving and green management initiatives. They have participated in the Energy Saving Charter on Indoor Temperature scheme since 2012. As of 2013, 39 major shopping malls and office buildings of the Group participated in the scheme. In addition, they have invited more than 2,800 tenants to join the scheme. This year, they step up their efforts by extending the scheme to their residential properties. They look forward to working with their stakeholders to build a greener future together.

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