

節能十載

A Decade of *Energy Efficiency & Conservation*

能源效益事務處

Energy Efficiency Office

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機電工程署於 1994 年成立能源效益事務處，專責在本港推廣能源效益及節約能源，以及為政策局監察兩電提供支援。我們掌握最新節能科技及能源管理方法，結合對本地情況的深切認識，履行本身的責任。

我們在能源效益及節約方面的工作主要覆蓋六個範疇：

- 創辦及推行多項自願性質的能源效益註冊計劃，如能源效益標籤計劃及冷卻塔先行性計劃等。
- 向公營及私營機構推廣能源管理的最佳方法，包括推介能源審核及協助政府部門達到節能目標，以及監察電力公司的用電需求管理計劃。
- 建立詳盡的能源最終用途資料庫，以監察本港耗用能源的狀況，輔助節約能源策略的製訂工作。
- 引進先進節能系統及科技，例如漸受歡迎的 T5 照明系統。
- 探討適用於本港的可再生能源方案，包括研究各類可再生能源的應用，以及進行示範及測量計劃。
- 我們積極推行社區及業界教育，以提升公眾對節能問題及最佳方法的認識，並參與國際交流活動。

The Energy Efficiency Office (EEO) was established in 1994 within the Electrical and Mechanical Services Department. The Office is responsible for promoting energy efficiency and conservation in Hong Kong, and providing support to policy bureau in monitoring the power companies. The EEO combines in-depth understanding of energy efficiency technologies and practices with thorough knowledge of local conditions in Hong Kong to discharge its duties.

Our work in energy efficiency and conservation spans six major areas:

- We develop and operate a number of voluntary registration programmes such as energy labelling schemes and the pilot scheme for cooling towers.
- We promote best practices in energy management to both the public and private sectors. This comprises energy audits, assisting government departments to achieve energy saving targets, and monitoring the demand-side management activities of the power companies.
- We established and maintain a comprehensive Energy End-use Database to monitor energy consumption patterns in Hong Kong so as to assist in the planning of energy saving strategies.
- We pioneer the use of advanced energy-efficient systems and technologies, including the increasingly popular T5 lighting system.
- We explore renewable energy options suitable for Hong Kong. This involves studies, demonstration projects and measurement projects for various renewable energy sources.
- We play an active role in community and trade education to heighten public awareness of energy efficiency issues and best practices, and participate in international exchange activities.

局長賀辭

Congratulatory Message from the

Secretary for the Environment, Transport & Works

機電工程署在 1994 年成立能源效益事務處，標誌著政府在能源效益及節能方面的重要承諾。這是一個既經得起時間考驗，復可彰顯其對市民大眾價值的承諾。我們並會信守承諾，邁向未來。

在短短十年的光景，能源效益事務處不懈的努力已令香港在有效率使用能源這方面跨出一大步，朝著晉身國際都市前列的路上進發。節能的訊息及習慣已在我們社會播下種子，我期望這些種子能夠茁壯成長，使社會各界在節能及本港可持續發展的重要性上，達到一致的共識。

欣逢能源效益事務處十周年誌慶，我謹衷心致賀，並祝願能源效益事務處繼往開來，續創佳績。

The establishment of the Energy Efficiency Office within the Electrical and Mechanical Services Department in 1994 signified the Government's commitment to energy efficiency and conservation. It is a commitment that has endured the test of time and proved its value to the citizens; and a commitment that will continue in the future.

While ten years may not seem long, the arduous work of the Energy Efficiency Office in those years propelled Hong Kong a long way towards a top-class city in the efficient use of energy. The message and practice of saving energy have gained roots in our society, and I wish to see them grow into widespread consensus on the importance of energy conservation and sustainable development of our city.

It gives me great pleasure to congratulate the Energy Efficiency Office on its 10th anniversary. And I wish it every success in the years ahead!



環境運輸及工務局局長
廖秀冬 博士

Dr **LIAO Sau-tung, Sarah**, JP
Secretary for the Environment, Transport & Works

委員會主席賀辭

Congratulatory Messages from the Committee Chairmen

能源諮詢委員會主席
潘樂陶先生

Mr **POON Lok-to, Otto**, BBS, OBE
Chairman of Energy Advisory Committee



機電工程署能源效益事務處是確保本港能夠安全及有效運用能源的主要機構，並就能源政策向香港特區政府決策局提供意見。在過去十年，該處在諮詢有關機構及人士的意見後，制定了多項措施，以推廣能源效益和節約能源。

這些措施包括為公營部門、私營機構及運輸業制定能源守則、引入器具及車輛的能源標籤計劃，以及推行節能運動等。現時本港正面對能源價格上升、能源供應穩定受到威脅及空氣污染日趨嚴重等問題。能源效益事務處推出的多項措施均有助舒緩這些問題，故該處對社會實在貢獻良多。

能源效益事務處負責根據管制計劃監察電力公司的供電可靠性表現，以及它們推行的能源效益及節約能源計劃。該處亦建立了一個全面的能源數據庫。該數據庫提供寶貴的資料，可幫助私營機構訂定商業策略，亦可協助公營部門制定及執行法例。

能源效益事務處透過上述措施確保能源供應安全穩定及有效率，令市民的生活更美好。該處多年來的工作，成績卓越，本人謹此致賀，並期望該處百尺竿頭，更進一步。

As the leading agency responsible for safe and efficient use of energy and adviser to the Hong Kong SAR Government on energy policies, the Energy Efficiency Office of the Electrical and Mechanical Services Department has in consultation with stakeholders formulated a number of initiatives to improve on the efficiency and conservation of energy in the past ten years.

These initiatives include energy codes, energy labelling of appliances and motor vehicles, energy saving campaigns, etc. for the private, public and transport sectors; and these work are particularly important to Hong Kong with rising energy prices, threat on energy security and worsening air pollution problems.

The Energy Efficiency Office monitors the technical performance of energy companies under the Schemes of Control and their energy efficiency and conservation activities. It has also established a comprehensive energy database which offers useful information to various stakeholders in the private sector to formulate their business strategies and public sector to establish and enforce legislations.

The Energy Efficiency Office through these initiatives is making valuable contribution to ensure safe, efficient and reliable supply of energy for the well-being of Hong Kong. I therefore wish to congratulate the Energy Efficiency Office for all its excellent efforts and wish it continuous success in its future endeavours.

能源效益事務處十載耕耘，對社會作出不少貢獻，成績有目共睹。

我清楚記得前能源效益諮詢委員會在上世紀九十年代初成立，我們曾討論怎樣加深香港各界對能源效益及節約能源的認識。當初該委員會對香港怎樣使用能源所知有限，於是努力向各酒店和商業大廈收集數據，我對此還記憶猶新。當然，後來機電工程署對本港能源的最終用途進行了極詳細的研究。

成立能源效益事務處是香港邁出的重要一步，因為香港首次有一個機構專責推廣節能措施。香港較遲開始推動能源效益，但是能源效益事務處努力不懈，令香港快速進步，追上世界許多成熟經濟體系，因此我認為該處真的令香港有所改變。我們的工作顯然未完成，仍然有很多事情要做。我們需要制訂更完善的技術標準，並確保香港盡可能遵循最佳的做法。無論如何，在過去十年，我們已取得豐碩的成果。

祝願能源效益事務處在未來十年繼續穩步發展，再創佳績。

It is a great pleasure for me to acknowledge the enormous contribution that the Energy Efficiency Office has made over the past ten years.

I recall clearly the establishment of the former Energy Efficiency Advisory Committee back in the early 1990s and our discussions about how best to promote greater awareness of the importance of energy efficiency and conservation in Hong Kong. At that time we knew very little about how energy was being used in Hong Kong. I remember our initial efforts at collecting data for commercial buildings and hotels in Hong Kong. Of course, later on EMSD commissioned a much more detailed study of energy end-uses in Hong Kong.

The setting up of the EEO was a major step forward in Hong Kong. For the first time, we had a specialist unit dedicated to the task of supporting energy efficiency initiatives. The Office has, I feel, really made a difference and although Hong Kong entered the energy efficiency field rather late, the efforts of the EEO have allowed us to make rapid progress and catch up with many developed economies elsewhere in the world. Clearly, our work is not finished and there is still much more to be done in setting improved technical standards and ensuring that Hong Kong follows best practice wherever possible. Nonetheless, we have seen many solid achievements over the past ten years.

I wish the Energy Efficiency Office continued success over the next ten years.



能源效益及節約小組委員會主席
姚思 教授

Prof **Peter HILLS**
Chairman of Energy Efficiency
and Conservation Sub-committee

署長致辭 Director's Message

能源效益事務處帶著一個重要的任務成立，就是推廣能源效益及節能，從而保護環境，並促使本港耗用化石燃料的增長放緩。

在沒有節能法規的情況下，能源效益事務處仍成功運用了形形色色的自願註冊計劃，為建築物及電器等確認節能水平，藉此鼓勵公眾廣泛使用節能設備。事務處借助節能科技的發展，透過示範性項目，推介減低能源耗用量的新方法。事務處和業界緊密合作，獲得業界的認同，並運用教育宣傳活動，以達對公眾教導、薰陶的目標。

這種多管齊下的策略證明行之有效，我相信在將來亦會同樣創出成績。與此同時，我們會探討其他方法，務使香港的能源效益水平節節向上。

這刊物見證了能源效益事務處過去十年的成績。適逢其會，我們也應把握這時機，回顧過去，展望將來，為迎接前面的挑戰作好準備。能夠參與能源效益及節能這重要工作，機電工程署對此深感自豪，並承諾繼續努力，為香港締造更青蔥、更可持續發展的未來。

The Energy Efficiency Office was set up with an important mandate, that of promoting energy efficiency and conservation. This translates into protection of the environment and reducing the growth in fossil fuel consumption.

Without the backing of energy conservation legislation, the Energy Efficiency Office has made good use of voluntary registration schemes to recognise the levels of energy efficiency achievement of buildings and appliances, and to encourage the wider adoption of energy-efficient equipment. The Office has taken advantage of the advancements in technologies to serve its aims, through pilot schemes and demonstration projects. The Office has also drawn the support of the private sector through collaboration with various organisations, and has made use of the power of persuasion and teaching through its publicity and public education work, to raise public awareness of energy efficiency and conservation.

I believe this multi-pronged approach, which has served us well in the past, will continue to bear fruit in the future. At the same time, we shall continue to explore other means to raise the energy efficiency standard of our city.

This booklet gives witness to the accomplishments of the Energy Efficiency Office in its first ten years. This is also a timely moment for us to reflect on our past work, to think ahead, and to get prepared for the challenges in front of us in the years to come. The Electrical and Mechanical Services Department is proud to have taken part in this important enterprise of energy efficiency and conservation, and we pledge to continue our efforts to build a greener and more sustainable future for Hong Kong.



機電工程署署長
黎仕海 太平紳士

Mr LAI Sze-hoi, Roger, JP
Director of
Electrical & Mechanical Services

「能源效益事務處的首個十年實在多姿多采，成績斐然。」
 “This was indeed an exciting and fruitful decade for the Energy Efficiency Office.”



機電工程署副署長 / 規管服務

何光偉 太平紳士

Mr HO Kwong-wai, JP

Deputy Director / Regulatory Services
 Electrical and Mechanical Services Department

能源效益事務處在過去十年設計及發展了多項節能計劃及項目。我們估計，能源效益事務處的工作促使本港在 2003 年節省用電約 4.15 億度電，二氧化碳的排放量同年亦減少了約 290,000 噸。

Over the past ten years EEO has pioneered and developed many energy efficiency schemes and programmes. We estimate that the saving in electricity consumption as a result of our efforts amounted to 415 GWh in the year 2003. The year also saw a reduction of 290,000 tonnes of carbon dioxide emissions.

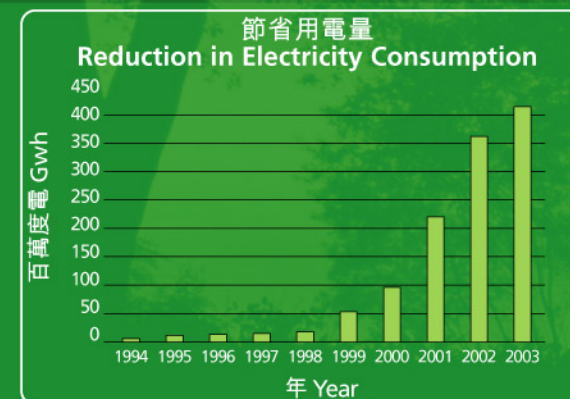
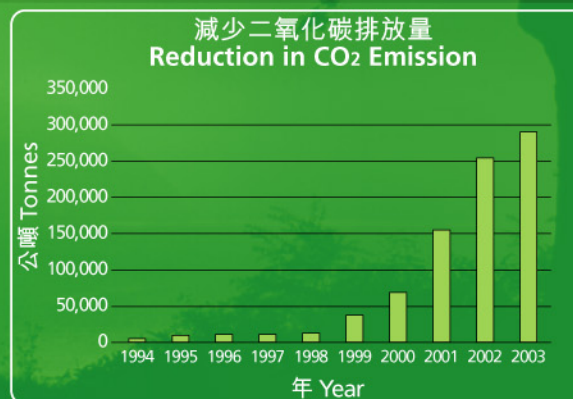
自 1973 年首次石油危機以來，全球人士愈來愈關注節能的重要性。1979 年，香港政府開始印製有關建築物裝置的節能指引，供公共建築物設計參考之用。

1991 年，當時的能源效益諮詢委員會（即能源諮詢委員會前身）成立，就能源效益事宜向政府提供意見。同年，機電工程署成立能源效益事務分部，其後發展為能源效益事務處。事務處於 1994 年正式成立，早期的重點是能源審核、能源管理、能源標籤及監察電力公司的工作。至今，能源效益事務處的工作範圍已大為拓寬，包括推出及執行多項計劃及活動。

Since the first oil crisis in 1973, the global community has become increasingly aware of the importance of energy conservation. In 1979, the Hong Kong Government started to issue energy conservation guidelines for the design of building installations in public buildings.

In 1991, the former Energy Efficiency Advisory Committee (the predecessor of the Energy Advisory Committee) was set up to give advice to the Government on matters related to energy efficiency and conservation. An Energy Efficiency Sub-division was formed within the Electrical and Mechanical Services Department in that year, which eventually became the Energy Efficiency Office (EEO), formally established in 1994. The EEO's initial focus was energy auditing, energy management, energy labelling and monitoring the power companies. Since then, EEO has expanded its scope of work to spearhead and implement a much broader and more diverse range of schemes, programmes, and activities.

第一個十年 The First Ten Years



1994



入境處大樓是首批進行能源審核的政府建築物之一。
Immigration Tower was one of the first government buildings audited under the Energy Audit Programme.

能源審核計劃正式推出，為公共建築物找尋能源管理機會。

The Energy Audit Programme was introduced to identify energy management opportunities in public buildings.

1995



「珍寶」牌雪櫃是首款獲發能源標籤的產品。
The first Energy Label was issued for a "General" refrigerator.

能源效益標籤計劃面世，以家庭電器先行，並從家用雪櫃開始。

The Energy Efficiency Labelling Scheme for household appliances began with refrigerators.

1996

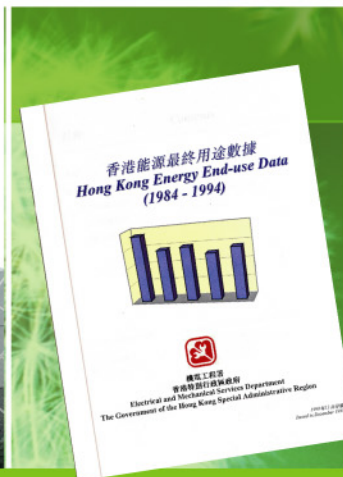


首項改裝工程於金鐘道政府合署進行，改用電子鎮流器及可變速驅動器等節能裝置。
The first retrofit project at Queensway Government Offices involved electronic ballasts and variable speed drives.

推出「能源管理機會實施試驗計劃」，透過改裝建築物內的裝置，以評估各種節能科技的表現。

The Pilot Energy Management Opportunities Implementation Programme kicked off. Performance of different energy-efficient technologies was assessed through retrofitting building installations.

1997

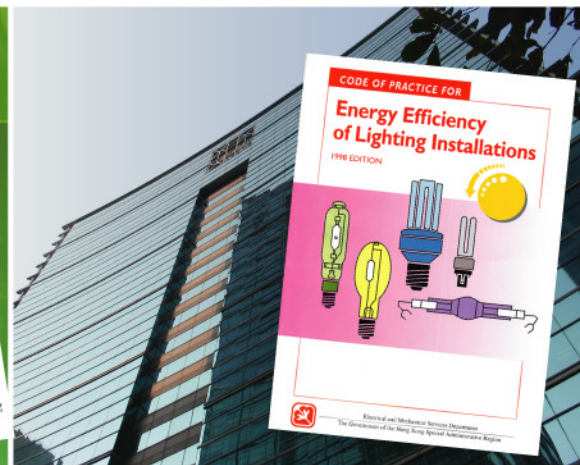


出版首套能源最終用途數據集，詳列1984年至1994年的數據。
Publication of the first set of energy end-use data covering the period from 1984 to 1994.

建立香港能源最終用途資料庫，以追蹤本港能源最終耗用的狀況。資料庫定期更新。

The Hong Kong Energy End-Use Database was created to keep track of energy end-use consumption patterns in the territory. The database is regularly updated.

1998



北角政府合署是首幢註冊的建築物。
The first building registered was the North Point Government Offices.

香港建築物能源效益註冊計劃正式推出，鼓勵發展商及建築師採用節能的樓宇設計。

The Energy Efficiency Registration Scheme for Buildings was launched to encourage developers and building designers to adopt energy-efficient building designs.

首套建築物能源守則，主題是照明裝置。
Publication of the first Building Energy Code for lighting installations.

1999

2000

2001

2002



該項初步研究為日後的冷卻塔先行性計劃、及多項跟進研究項目奠下根基。

The Preliminary Phase Consultancy Study laid the foundation for the pilot scheme for cooling towers and a number of subsequent studies.

用電需求管理計劃成功鼓勵電力公司用戶改用節能產品。

The DSM programmes encouraged customers of the power companies to switch to energy-efficient equipment.

灣仔大有大廈，是該計劃首幢完成冷卻塔改裝工程的建築物。

Tai Yau Building in Wanchai was the first building under the Scheme to complete cooling tower conversion work.

「萬能達」牌影印機是首款獲發能源標籤的辦公室設備產品。

The first Energy Label for office equipment was issued for a "Minolta" photocopier.

第一批獲發能源標籤的私家車當中部份是「MINI」牌私家車。

"MINI" cars were among the first batch of private cars with Energy Labels.

「在香港推廣水冷式空調系統初步研究」完成，訂出適合在本港廣泛使用的水冷式系統。

The Preliminary Phase Consultancy Study on the Wider Use of Water-cooled Air Conditioning Systems was completed. The Study identified certain types of water-cooled systems with potential for wider adoption in Hong Kong.

政府分別與兩間電力公司簽署用電需求管理協議。能源效益事務處協助政策局監察電力公司在三年協議期的用電需求管理工作。

The Demand-side Management (DSM) Agreements were signed with the two power companies. EEO was responsible for monitoring their performance over the three-year agreement period.

推出「更廣泛使用淡水於蒸發式冷卻塔先行性計劃」，計劃初期只覆蓋6個指定地區。

The Pilot Scheme for Wider Use of Fresh Water in Evaporative Cooling Towers was launched, initially covering six designated areas.

能源效益標籤計劃擴展至辦公室設備，首個產品類別為影印機。

The Energy Efficiency Labelling Scheme was extended to cover office equipment. Photocopiers were the first product type to have such a label.

能源效益標籤計劃擴展至車輛，汽油私家車首先納入標籤計劃。

The Energy Efficiency Labelling Scheme was extended to the transport sector. Petrol passenger cars are priority targets.

Milestones 節能里程一覽

2003

2004



灣仔政府大樓天台的光伏板。
Photovoltaic panels on the roof of Wanchai Tower.



將軍澳彩明商場是首幢符合「成效為本建築物能源效益守則」的建築物。
The first certificate certifying compliance with the performance-based code was issued for the Choi Ming Shopping Centre in Tseung Kwan O.



該獎賞計劃旨在嘉獎取得實質節能成績及落實最佳節能方法的政府部門。
The award scheme aims to give recognition to those who achieve energy savings and implement best practices within the government.



首個風力監測站設於政府物料營運中心的天台。
The first wind monitoring station was set up on the roof of the Government Logistics Centre.



「香港能源效益獎」於數碼港舉行開幕儀式。
The launching ceremony of the Hong Kong Energy Efficiency Awards was held at the Cyberport.

「在香港使用可再生能源的可行性研究」第一階段完成。第二階段的工作包括在灣仔政府大樓安裝光伏板作示範項目，測試在本港環境使用太陽能科技的表現。

The first stage of the Study on Potential Applications of Renewable Energy in Hong Kong was completed in this year. In the second stage, photovoltaic panels were installed at Wanchai Tower to test the performance of solar energy technologies under local conditions.

推出「成效為本建築物能源效益守則」，提供另一評核途徑，讓建築物註冊加入香港建築物能源效益註冊計劃。

The Performance-based Building Energy Code was launched. The Code provides an alternative approach for buildings to register for the Energy Efficiency Registration Scheme for Buildings.

首次舉辦以政府部門為對象的節能比賽，藉以在政府內部推廣良好的節能方法。

EEO organised the first government-wide energy saving competition to promote energy conservation practices and initiatives within government.

能源效益事務處著手進行一項風力測量計劃，研究在本港東面使用風力發電的可行性。

EEO embarked on a wind measurement programme to assess the potential of utilising wind energy on the eastern side of Hong Kong.

首次舉辦以非官立學校以及商業及住宅樓宇物業管理機構為對象、名為「香港能源效益獎」的節能比賽。

An energy saving competition for non-government schools and property management organisations of commercial and residential buildings, the Hong Kong Energy Efficiency Awards, was launched.



創辦多種能源效益註冊計劃 - 能源效益標籤計劃

Introducing Energy Efficiency Registration Schemes - Energy Efficiency Labelling Scheme

能源效益標籤計劃涵蓋家庭電器、辦公室設備、車輛及氣體用具等，有助締造綠色家居、辦公室及道路環境

The Energy Efficiency Labelling Scheme covers household appliances, office equipment, vehicles and gas appliances, contributing to a greener environment in homes, offices and on the roads



過去十年，能源效益事務處構思及落實了多項能源效益註冊計劃，切合本港社會的需要，當中包括涵蓋家庭電器、辦公室設備及車輛的標籤計劃，為節能建築物而設的註冊計劃，以及推廣冷卻塔的先行性計劃等。

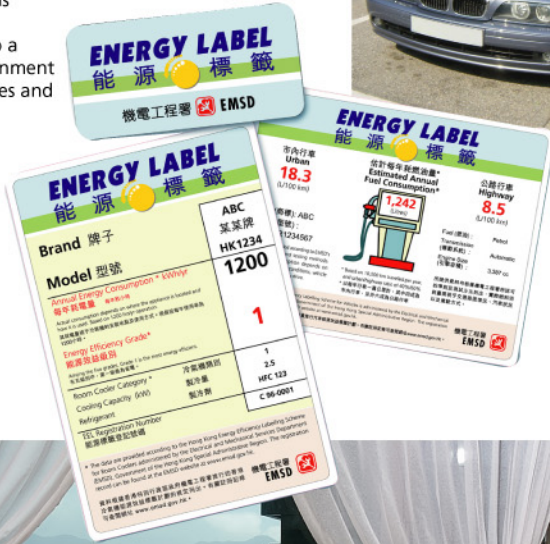
能源效益標籤計劃自 1995 年推出以來，即廣受本港市民及業界歡迎。能源標籤已成為既可節省能源、又可改善環境的標誌，備受消費者的愛戴。標籤計劃亦有助市場淘汰耗能表現較差的產品。

截至 2004 年 10 月底，共有 14 個產品類別已納入標籤計劃內，包括家庭電器、辦公室設備及車輛等。年底再有 3 個產品類別會納入標籤計劃內，將是首次包括了氣體用具。我們估計，實施標籤計劃所達致的節能數額，佔能源效益事務處各項工作所帶來的總節能額的一半之多。

In the past ten years, EEO has pioneered the development of many energy efficiency and conservation programmes tailored to the needs of the Hong Kong community. Among them are: a labelling scheme for energy-efficient household appliances, office equipment and vehicles, a registration scheme for energy efficient buildings, and a scheme to promote the wider use of fresh water in cooling towers.

Since its inception in 1995, the Energy Efficiency Labelling Scheme has been well received by the trade and consumers in Hong Kong. The Energy Label has also become increasingly popular in the consumer market, as it is equated to dollar savings and environmental improvements. The scheme has helped phase out the less energy-efficient products from the market.

As at end October 2004, the Energy Efficiency Labelling Scheme covered fourteen product categories, ranging from household appliances and office equipment to cars. Three more will be added by the end of the year, including gas appliances for the first time. About half of the energy savings achieved by EEO has come from the scheme.



納入能源效益標籤計劃的產品類別

- 家庭電器：緊湊型節能熒光燈、抽濕機、電乾衣機、儲水式電熱水爐、家用雪櫃、電飯煲、冷氣機、電視機、洗衣機、電子鎮流器
- 辦公室設備：多功能辦公室裝置、影印機、鐳射打印機、液晶體顯示屏幕、電腦
- 車輛：汽油私家車
- 氣體用具：家用氣體熱水爐

Product Categories Covered by the Energy Efficiency Labelling Scheme

- Household Appliances: compact fluorescent lamps, dehumidifiers, electric clothes dryers, electric storage water heaters, refrigerators, rice cookers, room coolers, television sets, washing machines, electronic ballasts
- Office Equipment: multifunction devices, photocopiers, laser printers, LCD monitors, computers
- Vehicles: petrol passenger vehicles
- Gas Appliances: Domestic gas instantaneous water heaters

至 2004 年 10 月底，能源效益事務處已為 14 個產品類別的 2,308 個產品型號簽發了能源標籤，當中約 44 % 為冷氣機。

As at end October 2004, EEO has issued energy labels for 2,308 product models under 14 product categories, of which 44% are for room coolers.





劉燕卿女士
消費者委員會副總幹事
Ms Connie LAU
Deputy Chief Executive
Consumer Council



朱嘉樂先生
第一電業有限公司總裁
Mr Peter K L CHU
President, Alpha Appliances Ltd.



羅俊明先生
三星電子香港有限公司
執行董事兼副總裁
Mr LO Chun-ming
Executive Director and Vice President
Samsung Electronics Hong Kong Ltd.

能源效益事務處高瞻遠矚，在推動節能的工作上努力不懈，過去十年，香港各界對能源效益越來越重視，該處實功不可沒。

能源效益事務處所推出的能源效益標籤計劃贏得消費者和業界支持。自1995年推出家用雪櫃能源標籤後，該計劃已擴展至辦公室設備和車輛等共14種產品。消費者委員會作為該計劃專責小組成員，亦與有榮焉。

能源標籤為用電量和操作費用提供重要資料，翔實可信，讓消費者能作出精明理智的選擇，促使製造商生產更具能源效益的產品。

今年適逢能源效益事務處成立十周年，謹祝該處工作順利，續創佳績。

The last decade has seen remarkable progress in the recognition of energy efficiency in Hong Kong as a result of the visions and efforts of the Energy Efficiency Office.

The Energy Efficiency Labelling Schemes evidence the achievement of the Energy Efficiency Office which has won the support of both consumers and the industry. As a member of the Task Force, the Consumer Council shares the glory of the success of the Labelling Schemes. Starting from household refrigerators in 1995, the Labelling Schemes have extended to office equipment and vehicles, covering a total of 14 categories of products.

The Energy Label acts as an important source of credible information on energy consumption and operating costs that assists consumers in making rational and informed decisions. It also stimulates manufacturers to produce more energy efficient products.

I congratulate the Energy Efficiency Office on its 10th Anniversary and wish it continuing success into the future.

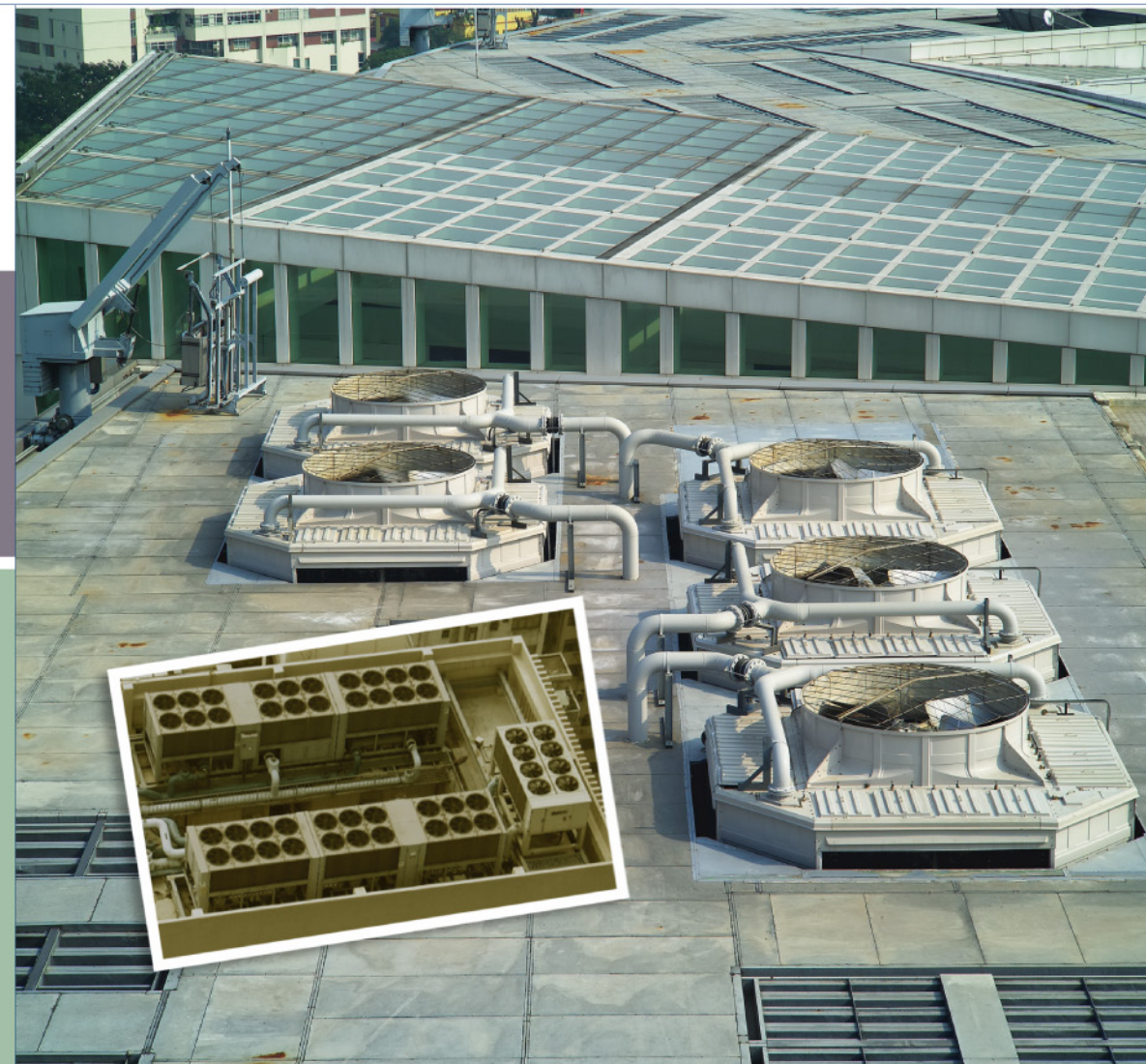
全球資源有限，節約能源刻不容緩。提倡能源效益，確保資源得以有效運用是第一電業有限公司一貫的宗旨。本公司是首間獲發雪櫃及冷氣機能源效益標籤的公司，至今領有能源標籤的家庭電器超過50多種。消費者對領有能源標籤的電器產品更有信心，本公司會繼續努力提供更多有能源效益的電器產品供消費者選購。

Our energy resources are limited, so we shouldn't procrastinate in saving energy. The efficient use of energy is one of the missions of Alpha Appliances Limited. We were the first company to have obtained Energy Efficiency Labels for refrigerators and room coolers. Over 50 items of our household appliances have been granted Energy Efficiency Labels. Consumers have more confidence in products with Energy Efficient Labels. We will continue to do our best to satisfy consumers' needs and distribute quality products which are energy-efficient.

機電署能源效益事務處成立已十年，成功地提高了廣大市民的節能環保意識，建樹良多。同時家電及電子產品行業也不斷地推出高效能低用電量的新產品，例如在推廣節能產品及無污染製冷劑方面都取得成就，減低了污染和溫室效應的負面影響。讓我們繼續努力，令世界更清潔！

In the ten years since the Energy Efficiency Office was established, the Office has been very successful in raising the awareness of the public about energy conservation and environmental protection. At the same time, the appliance and electronics industries have been developing many high performance and low energy consumption products. Achievements have been made in promoting energy-efficient products and non-polluting refrigerants, thus reducing pollution and lessening the negative impacts of greenhouse effect. Let's work together to make our world cleaner!

各界的話
What People Say



又一城 12 座水塔中的 5 座 (小圖為一般的氣冷式冷凝器)
Five of the twelve cooling towers at Festival Walk (small photo shows typical air-cooled condensers)

創建多種能源效益註冊計劃 - 冷卻塔先行性計劃

有見空調系統佔本港總用電量近三分之一，能源效益事務處遂進行一項有關廣泛使用水冷式空調系統的初步研究，該研究於 1999 年完成。研究發現水冷式空調系統，不論是使用冷卻塔、區域性供冷或中央海水冷卻，均較一般氣冷式空調系統更節能及更環保。因此於 2000 年推出了「更廣泛使用淡水於蒸發式冷卻塔先行性計劃」，容許非住宅樓宇於空調系統中使用冷卻塔。隨後，先行性計劃的覆蓋範圍由原先的 6 個指定地區陸續增加至 57 個。此外，一項有關全港性採用水冷式空調系統的研究亦已於 2003 年完成，建議分階段開放全港各區，容許使用冷卻塔。

至 2004 年 10 月底，接獲參加冷卻塔計劃的申請共 118 份，涉及的總樓面面績約四百一十萬平方米，估計有關工程完成後每年可節省四千九百萬度電。

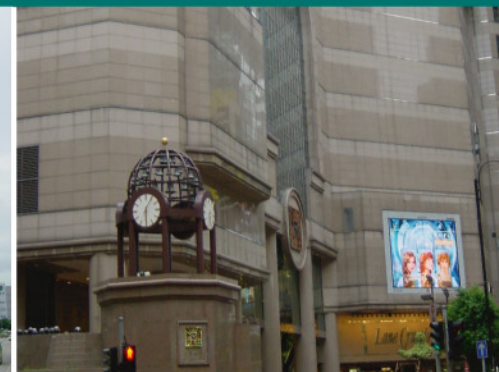
As at end October 2004, 118 applications have been received under the Pilot Scheme for Wider Use of Fresh Water in Cooling Towers, covering a total floor area of 4.1 million square metres. An estimated annual saving of 49 million kWh may be achieved when completed.

Introducing Energy Efficiency Registration Schemes - Pilot Scheme for Cooling Tower

Considering the fact that air-conditioning accounts for almost one-third of the total electricity consumption in Hong Kong, EEO commissioned a Preliminary Phase Study on the Wider Use of Water Cooled Air Conditioning Systems (WACS) in Hong Kong, which was completed in 1999. The study found that WACS, whether utilising cooling towers or district cooling or central seawater cooling, are much more energy-efficient and environmentally friendly than their air-cooled counterparts. It was in this context that the **Pilot Scheme for Wider Use of Fresh Water in Evaporating Cooling Towers for Air-conditioning Systems** was launched in 2000. The pilot scheme allows non-domestic buildings to use cooling towers in their air-conditioning systems. The number of areas covered in the scheme has since expanded from 6 to 57. A study on territory-wide implementation of WACS was also completed in 2003, which recommended a phased approach for opening up the entire territory to use cooling towers.



又一城用了水塔，每年節約超過四百萬度電
At Festival Walk, over 4 million kWh saved each year using cooling towers



時代廣場用了水塔，每年節約超過二百萬度電
At Times Square, over 2 million kWh saved each year using cooling towers

創建多種能源效益註冊計劃

- 建築物能源效益註冊計劃

Introducing Energy Efficiency Registration Schemes

- Energy Efficiency Registration Scheme for Buildings

國金二期符合全數五本建築物能源效益守則的要求
Two-IFC complies with all five Building Energy Codes



科學園符合四本規範性建築物能源效益守則的要求
Science Park complies with the four prescriptive Building Energy Codes



香港建築物能源效益註冊計劃在1998年正式推出，旨在減少建築物裝置的耗電量，是我們工作的另一里程碑。配合這項計劃，能源效益事務處出版了一套建築物能源效益守則，針對一般建築物內的四種主要耗能裝置，即空調、照明、電力、升降機及自動梯裝置。建築物符合有關能源效益守則，即表示其裝置已達到能源效益的基準水平，更有資格註冊加入計劃。能源效益事務處於2003年更推出一項「成效為本建築物能源效益守則」，採用總能源預算的方法，鼓勵建築物採納更具彈性、更創新的設計。

The launch of the Hong Kong Energy Efficiency Registration Scheme for Buildings in 1998, aiming at reducing energy consumption of building services, represented another milestone in our endeavours. Building Energy Codes were published for the four major power consumption areas in a typical commercial building, which are the air-conditioning, lighting, electrical, and lift and escalator installations. Compliance with the codes not only ensures attainment of a benchmark level of energy efficiency, but also makes the building eligible for registration under the scheme. In 2003, a fifth code, the Performance-based Building Energy Code, was introduced. The new code takes a total energy budget approach and allows greater flexibility to encourage innovations in building designs.

建築物符合任何一本建築物能源效益守則，便有資格註冊加入計劃
Compliance with any one of the Building Energy Codes makes a building eligible for registration.

至2004年10月底，在316幢建築物內的699套裝置已註冊加入香港建築物能源效益註冊計劃。

As at end October 2004, 699 installations in 316 buildings were registered under the Energy Efficiency Registration Scheme for Buildings.





黃少榮先生
地下鐵路有限公司
物業部高級工程經理

Mr Matthew S W WONG
Senior Technical Manager,
Property Department
MTR Corporation Ltd.



鄭正煒先生
康業服務有限公司董事及總經理
新地環保聯合大行動委員會主席

Mr Alkin C W KWONG
Director and General Manager
Hong Yip Service Company Ltd.
Chairman of SHK Properties
Environmentally Friendly
Joint Action Campaign



陳永康先生
太古地產管理有限公司
技術統籌主管

Mr Cary W H CHAN
Head of Technical Services
Swire Properties Management Limited

物業部於去年九月開始管理國際金融中心二期後，工程組同事們便著手制定能源管理策略，以配合國金二期的先進設計。經此努力，國金二期是本港第一幢能夠在同一時間獲頒發「香港建築物能源效益註冊計劃」全部五張證書的建築物，這標誌著國金二期作為地鐵物業管理的旗艦，不單對提倡能源效益有所貢獻，更能提高公司在物業管理行業中的領導地位。

Since Property Management Department took over the management of 2IFC, the Technical Team has been continuously reviewing all energy usages of the building and formulated an energy management plan to cope with the state-of-art building design. With such effort, 2IFC is the first building in the territory to obtain all at once the 5 certificates under the Hong Kong Energy Efficiency Registration Scheme for Buildings. This helps to symbolize 2IFC as the flagship property managed by the MTR Corporation, and sharpen the Corporation's image as a world-class property management services provider.

本集團去年舉行的「新地環保聯合大行動」，得到機電工程署鼎力支持，謹此致謝。集團轄下超過二百個屋苑及二百多幢工商業大廈和商場參與這次行動，節省電費達2,100萬元。機電工程署在推廣能源效益和節約能源方面一向不遺餘力，並提出很多良好的能源管理方法，供物業管理業參考。本公司期望貴署在這方面的工作不斷進展，使政府與業界可以加強合作，推動節約能源和保護環境。

We appreciate EMSD's support of our Sun Hung Kai Properties Environmentally Friendly Joint Action campaign in the past year. The campaign involved over 200 residential estates and over 200 commercial and industrial buildings and shopping centres, and saved \$21 million on electricity. EMSD's work in energy efficiency and conservation has furnished the property management sector with valuable references on the best practices in energy management. We look forward to seeing such work of EMSD to burgeon, and look ahead to a stronger partnership between the government and the property management sector in energy saving and environmental protection.

在太古地產的環境、健康及安全管理系統中，節約能源向受重視，因為我們深明使用能源會對環境造成影響，而化石燃料總有耗盡的一天。我們大部份商業大廈均採用水冷式空調系統。和氣冷式系統比較，水冷式系統不但較具能源效益，且噪音亦較少。2003年，我們參與政府的先行性計劃，把又一城的空調系統由氣冷式改為水冷式，那是本港歷來最大規模的空調水冷改裝工程。我們希望本公司所有新落成的建築物均可採用水冷式空調系統，並且現有的建築物都可改用這種系統。

At Swire Properties, we place a high priority on energy conservation within our Environmental, Health, and Safety Management System, as we recognise the various environmental impacts resulting from use of energy and that fossil fuels will be running out. Most of our commercial buildings are using water-cooled air-conditioning systems, which are inherently much more energy efficient and quieter than the air-cooled alternatives. The conversion of the air-conditioning system of Festival Walk in 2003, from air-cooled to water-cooled under the Government's Pilot Scheme, should be the largest of such kind of conversion projects in Hong Kong so far. It is our wish to see all our new buildings designed to use and all our existing buildings converted to use water-cooled air-conditioning.

各界的話
What People Say

推廣能源管理最佳方法 Promoting Best Practices in Energy Management

能源效益事務處的重點工作之一，是向公營及私營機構推廣能源管理的最佳方法及習慣。我們建議個別機構由能源審核做起，以深入了解機構內部使用能源的情況。能源審核有助找出能源管理機會，從而節省能源和金錢。我們的**能源審核計劃**始於1994年，即能源效益事務處成立之初。年來我們已為所有的主要政府建築物進行了能源審核。我們出版了「能源審核指引」，並剛於2004年更新，內容更豐富。該指引有助物業擁有人及管業公司進行能源審核的工作。

環境運輸及工務局已為各決策局及部門提出直至2007年的建議節能目標。能源效益事務處的責任是**提供技術支援及專業意見，協助各決策局及部門達標**。我們為政府各部門的同事舉辦了多次節能簡介會，並派發節能錦囊小冊子及趣味小標貼等推廣工具。為鼓勵政府部門加緊落實良好的節能措施及方案，我們在2003年推出「香港能源效益及節能獎〔政府機構〕」節能比賽，更於2004年為私營機構設計及推出了類似的節能比賽。

政府在2000年5月分別與兩間電力公司簽署為期三年的用電需求管理協議。能源效益事務處聯同經濟發展及勞工局專責監察電力公司施行各項用電需求管理計劃，以及協調未來工作的發展。用電需求管理計劃成功促使非住宅用戶提早更換節能產品，包括照明、通風及空調設備等。其他相關活動如宣傳及公眾教育等亦取得美滿成果。

政務司司長出席「香港能源效益及節能獎〔政府機構〕」頒獎典禮
The Chief Secretary at the prize presentation ceremony for the
“Hong Kong Awards for Energy Efficiency and
Conservation in Government”

政府節能比賽的工作坊
Workshop for government energy saving competition



能源審核計劃，為公共建築物共完成了200多次審核。

Under the Energy Audit Programme, over 200 energy audits of public buildings have been completed.



1,800 多位來自各政府部門的同事參加了節能簡介會。

Over 1,800 government colleagues attended the briefings on energy saving tips.

190 多個比賽單位，包括政策局、部門及其場地，競逐政府部門節能比賽的各種獎項。

Over 190 entries comprising various bureaux, departments and their venues competed in the government energy saving competition.

用電需求管理計劃接獲約 4,100 份申請，其間更換了逾 140 萬個電子鎮流器，此外亦更換了不少其他設備。

About 4,100 applications were received under the DSM programmes. Over 1.4 million electronic ballasts were installed, in addition to other equipment.



空調房間夏天室溫 25.5 度可節省能源
Room temperature at 25.5°C in summer saves energy for air-conditioned rooms



One of the mandates of EEO is to promote best practices in energy management to both the public and private sectors. We recommend organisations to start with an energy audit, which is a review of how and where energy is consumed in the organisation. Energy audits help identify Energy Management Opportunities where savings of energy and money can be made. Our **Energy Audit Programme** started in 1994 when EEO was first established. The energy audits we have conducted cover all major government buildings. A set of energy audit guidelines was published, and then enriched in 2004, for the benefit of property owners and property management companies.

The Environment, Transport and Works Bureau has recommended energy saving targets up to the year 2007 for all government bureaux and departments. **EEO is responsible for providing technical support and expert advice to help the bureaux and departments achieve the energy saving targets.** Briefing sessions were organised for colleagues from other departments. Handy tools in the form of energy saving tips booklets and fun stickers were distributed. To further promote the adoption of best practices in energy saving within the government, we launched in 2003 an award scheme, the "Hong Kong Awards for Energy Efficiency and Conservation in Government". The awards scheme was then adapted and launched in 2004 for the private sector under the name of the "Hong Kong Energy Efficiency Awards".

The Demand-side Management (DSM) Agreements were signed between the government and the two power companies in May 2000. EMSD, in conjunction with the Economic Development and Labour Bureau, monitored the performance of the DSM programmes implemented over the 3-year agreement period and co-ordinates the development of future initiatives. The DSM programmes for non-residential energy-efficient lighting, heating, ventilation and air-conditioning equipment also led to early replacement of inefficient equipment. Other associated activities such as public education programmes also achieved remarkable results.



新版本 New Edition



能源審核是能源管理的重要部分
Energy audit is an important part of energy management

「慳電膽」已經廣為市民接納（小圖為低效能的鎢絲燈泡）
Compact fluorescent lamps are widely used by the public (small photo shows the inefficient incandescent bulbs)



邵達誠先生
中華電力營運總裁

Mr Stewart SAUNDERS, MBE
Chief Operating Officer
CLP Power Hong Kong Ltd.



尹志田先生

香港電燈集團有限公司
集團發展總經理

Mr WAN Chi-tin
General Manager
(Corporate Development)
Hong Kong Electric Holdings Ltd.



李志翀太平紳士

消防處
總部總區消防總長

Mr LEE Chi-chung, JP
Chief Fire Officer (Headquarters)
Fire Services Department

能源效益事務處在推動節約能源的工作上，成績卓越，今年是該處成立的十周年紀念，本人謹此致賀。

中華電力是一間重視環保的公司，致力推動可持續發展，故與能源效益事務處一直合作無間。我們為商業及住宅用戶引入各種節能措施，包括用電需求管理計劃、能源效益研究、能源審核及與市民溝通計劃。中華電力一直支持政府的各項措施，無論是能源效益事務處所推行的能源效益標籤計劃，抑或是他們所舉辦的節能研討會，我們都積極參與。

全賴能源效益事務處努力不懈，社會各界各盡所能，全港市民通力合作，才能有今天的成果。展望將來，我們希望和能源效益事務處繼續合作，建設香港，令這個亞洲國際都會更璀璨動人。

I would like to congratulate the Energy Efficiency Office on 10 years of excellence in driving energy efficiency in Hong Kong.

As an environmentally responsible company, CLP Power is committed to sustainable development, and has therefore maintained a close partnership with the Office. We have introduced a wide range of energy efficiency initiatives for both the commercial and domestic sectors of the community. These include a Demand Side Management programme, Energy Efficiency studies, energy audits and public communication programmes. We are pleased to support Government initiatives, ranging from the Energy Efficiency Labelling Scheme to Energy Efficiency and Conservation symposiums, spearheaded by the Office.

Progress would not have been possible were it not for the unwavering endeavours of the Office, contributions from all the major sectors, and the cooperation of the community at large. We look forward to many more years of successful collaboration, as we work towards a better Hong Kong, Asia's World City.

能源效益事務處在過去十年的工作，成效卓著，本人謹代表香港電燈集團有限公司向機電工程署致賀。在該處的領導下，我們參與出版節能實務守則和指引，並制定家用電器及辦公室設備的能源效益標籤計劃。我們又實施用電需求管理計劃，推廣節能照明和暖氣、通氣及空調設備，並提高市民的節能意識。

展望將來，本人有信心香港定能善用能源，持續發展。

On behalf of Hongkong Electric, I would like to congratulate EMSD on the outstanding achievements of its Energy Efficiency Office in the past 10 years. Under the Office's leadership, we have participated in the issuance of the Codes of Practice and Guidelines for efficient use of energy, and the establishment of the Energy Efficiency Labelling Schemes for household appliances and office equipment. We have also implemented the Demand Side Management programmes to promote high efficiency lighting and HVAC and increase energy efficiency awareness of the public.

Looking ahead, I am confident that efficient use of energy shall be the way of the future in Hong Kong.

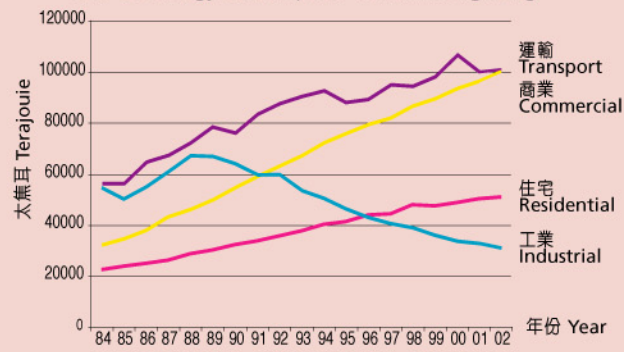
消防處深諳要在能源管理上取得成果，便須同心協力，上行下效。為此，我們委派一名首長級的消防總長，負責監管部門內的能源管理措施。去年，本處以部門及轄下各個不同場地的名義參加機電工程署舉辦的節能比賽。雖然比賽已經結束，但我們仍然持之以恆，繼續推行節約能源措施，透過最佳的能源管理，創造更大的效益。

At the Fire Services Department, we fully understand that success in energy management hinges upon a strong drive from the top management and concerted efforts of the staff. A directorate-level Chief Fire Officer has been tasked with the responsibility of overseeing the implementation of energy saving initiatives in the department. Many of our venues and the department as a whole participated in the energy saving competition organised by EMSD last year. Our energy management efforts, however, will not slow down despite that the competition has ended, as we firmly believe in the value of energy management.

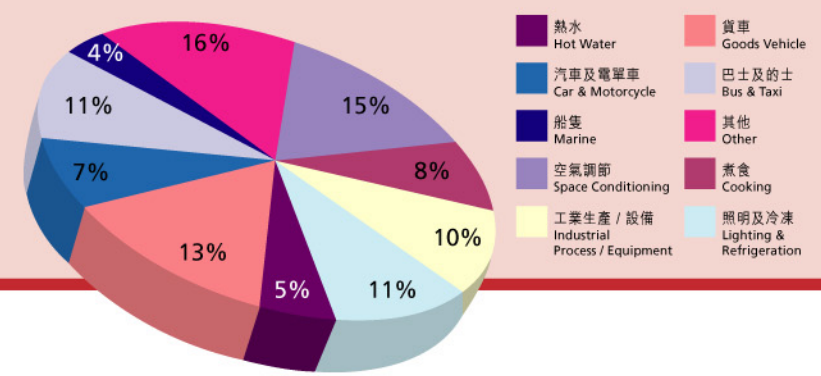
各界的話
What People Say



本港最終能源耗用量趨勢
End-use Energy Consumption Trend in Hong Kong



2002年按最終用途劃分本地能源消耗量
Local Energy Consumption by End-use Type in 2002



建立能源耗用資料庫 Building Up Information Base on Energy Consumption

我們於1997年建立了「香港能源最終用途資料庫」，以全面了解本港耗用能源的數字和整體狀況。資料庫按「類別—組別—最終用途」的細分架構，彙列了各最終用途的按年能源總消耗量。資料庫每年更新一次，現時儲存了1984年至2002年的資料。資料庫使我們更清楚了解本港能源的詳細用途及用量，幫助我們為節能項目製訂策略與方向。

資料庫宏觀地描繪了香港的整體能源耗用狀況，至於微觀層面，了解個別耗能群組的特徵，對我們與業界都甚有價值。我們為9個不同的耗能組別建立了能源耗用基準，並在網上 (<http://www.emsd.gov.hk>) 為市民提供與基準作比較的軟件工具，讓他們能夠把其樓宇或車輛與同組別的其他樓宇或車輛進行能源消耗水平比較，並定下日後的能耗目標，及找出減少耗用能源的方法。

我們也建立了其他資料庫，例如為本港可再生能源裝置而編制的資料庫。此外，亦進行能源分析的工作，目前我們正進行一項有關建築物生命週期能源分析的研究。

我們為9個耗能組別建立了能源消耗基準：
Energy consumption benchmarks have been established for nine energy-consuming groups:

- 私人辦公室 private offices
- 商舖 commercial outlets
- 酒店及旅舍 hotels and boarding houses
- 大學、專上學院及學校 universities, post-secondary colleges and schools
- 醫院及診所 hospitals and clinics
- 私家車 private cars
- 輕型貨車 light goods vehicles
- 中型貨車 medium goods vehicles
- 重型貨車 heavy goods vehicles

The Hong Kong Energy End-use Database was established in 1997 to give an overall view of energy consumption data and patterns in Hong Kong. The Database contains categorised annual energy consumption data of the energy end-uses in Hong Kong according to a "Sector – Segment – End-use" breakdown structure. It is updated annually, and to date contains data from the years 1984 to 2002. The database enables us to see more clearly where and how energy was used in the territory, so that we may strategise and shape our various programmes accordingly.

While the Database provides an overview, detailed information about the characteristics of individual energy consuming groups is also very valuable to us and to the private sector. We have established energy consumption benchmarks for nine different energy-consuming groups and their sub-groups. Software benchmarking tools have been made available to the public through our website (<http://www.emsd.gov.hk>), in order to let individuals compare the energy consumption levels of ones' premises or vehicles with others in the same group, set future consumption targets and identify measures to reduce energy consumption.

A number of other types of database have also been set up, such as the Renewable Energy Installations Database. Energy analysis is also performed, including a study on life-cycle energy analysis of building construction that is currently underway.

香港能源最終用途資料庫的數據有助決策
Hong Kong Energy End-use Database provides useful data for policy-making





熱泵熱水器
Heat-pump water heater

引進先進節能科技 Pioneering the Use of Advanced Technologies



T5管比粗管節能
T5 tube more efficient than thicker tubes



電子鎮流器
Electronic ballasts



感應式電燈
Induction lamps



用數碼定位照明界面系統控制 T5 管
T5 tubes controlled by DALI system

能源效益事務處一直致力尋找及研究適用於香港的最新科技。過去十年，能源效益事務處成功引進多項節能系統及技術，其中不少更廣受市民及業界歡迎及採用。

我們在鎖定某種要引進試行的技術後，會以試驗計劃的形式試用。電子鎮流器就是首先引進及成功推廣的產品。近期推廣的節能產品當中，T5 照明系統是一個比較突出的例子。自 2001 年試驗計劃成功完成後，工程界對 T5 技術的優點深感興趣，隨後迅即為製造商及客戶所接受，產品價格在供求增加後逐步下調，令有關產品更具吸引力。現時，很多大型發展商都指定在新建築物內安裝 T5 光管。

其他能源效益事務處成功試驗、推廣及引進市場的產品包括數碼定位照明界面調光系統、感應式電燈、應用於冷氣系統內的可變速驅動器、自動梯驅動系統的善用能源裝置、熱泵熱水器、自行發光的「出路」標誌、LED「出路」標誌、隔熱透光膜等等。

One of our ongoing pursuits is the exploration of the latest technologies suitable for local application. In the past ten years, EEO has successfully promoted a number of advanced energy-efficient systems and technologies. Some of them have proved to be highly successful, gaining wide acceptance by the public and the trade alike.

Technologies identified for trial are typically tested in pilot installations. Electronic ballasts were the first type of technology successfully tried and promoted. T5 fluorescent lamps were another recent hit. Following on the success of our pilot projects in 2001, the engineering profession has increasingly adopted the technology. Both manufacturers and users caught on soon. Rising market demand has further driven down product prices, making the technology even more accessible and attractive. Nowadays, many major developers specify the use of T5 tubes in new buildings.

Other energy-efficient technologies which EEO has tested and publicised include Digital Addressable Lighting Interface (DALI) control technology for lighting systems, induction lamps, variable speed drives for air-conditioning systems, energy optimisers for escalator motor drives, heat-pump water heaters, self-luminous EXIT signs, LED EXIT signs, solar window films, and many others.



LED「出路」標誌
LED EXIT sign



區域式供冷系統是一種水冷式空調系統，可為發展商、業主、租戶及整個社會帶來很多好處。該系統透過地下輸水管，由中央冷凍機組為區內的建築物提供冷凍水。相對於氣冷式系統，可節省高達 35% 的電力及建築物內 70% 的機房面積。區域式供冷系統比傳統供冷方式更可靠、更環保，以及更有效運用建築物的空間。能源效益事務處現正和不同的決策局及部門商討如何在本港落實這種系統。

District Cooling System has been identified as a type of Water-cooled Air Conditioning System that can bring about numerous benefits to developers, landlords, tenants as well as society as a whole. It features centralised chiller plants that provide chilled water through underground distribution piping to a number of buildings within the district, and has a potential of a 35% saving in energy and 70% saving in plant room space, as compared to air-cooled systems. District cooling is also more reliable, more environmentally friendly and facilitates better use of building space. EEO is collaborating with bureaux and departments to implement this type of system in Hong Kong.

區域供冷系統模型
District cooling system model



建築物使用區域供冷可騰出空間供其他用途
Adoption of district cooling can lead to extra useful spaces in buildings





化石燃料蘊藏量有限，而且燃燒化石燃料產生能量的過程會排放出空氣污染物，如二氧化硫、氧化氮、懸浮粒子等，同時帶來大量的二氧化碳排放，導致全球暖化及連帶的氣候變化。

Supply of fossil fuels is finite. Besides, generating energy from fossil fuels creates air pollutants such as SO_x, NO_x and particulates. It also results in the emission of a large amount of CO₂, which is a major contributing factor to global warming and related climate change.

探討新能源及可再生能源應用方案

Exploring New and Renewable Energy Options

機電署新總部大樓天台的 350kW 光伏系統
350kW PV system on the roof of new EMSD Headquarters



能源效益事務處在 2000 年進行一項研究，探討在本港使用太陽能、風能及波浪能等可再生能源的可行性，以減少污染及減輕本港對化石燃料的倚賴。第一階段研究於 2002 年底完成，研究報告詳列各種適用於本港的可再生能源的潛力數據，以及應用這些可再生能源時須考慮的問題。並就本港應用可再生能源作出有關實施策略的建議。

太陽能在本港已應用了一段時期，主要作為提供熱水之用，近期則包括運用太陽能光伏板作發電用途。我們進行了一項示範項目，研究更廣泛在大廈使用光伏系統的有關問題。在 2002 年底，我們在灣仔政府大樓安裝了額定輸出功率總數達 55 千瓦的光伏板，並用了一年的時間收集技術運作數據，現正將有關數據進行分析，以評估該光伏系統的表現及效能。

為了研究在本港東面使用風力發電的可行性，我們已著手進行一項風力測量計劃。在 2004 年，兩個風力監測站分別於政府物料營運中心的天台及砵甸乍山相繼設立，並正在偏遠地區興建另外三個風力監測站。我們在高達 50 米的管狀塔身不同高度上設置風速計和風向計，蒐集風力資源數據。

兩間電力公司的管制法則於 2003 年進行中期檢討時，兩電承諾會在進行可行性研究之後，興建商業級風力發電機，一方面向公眾示範此項技術，另一方面測試其效率。能源效益事務處正跟進有關的計劃。

EEO commissioned a consultancy study in 2000 to investigate the potential of utilising renewable energy such as solar, wind and wave energy in Hong Kong, in order to reduce pollution and lessen our reliance on fossil fuels. The first-stage of the study was completed in late 2002. The findings outlined the application potentials and implementation issues of the various renewable energy technologies that may be used in Hong Kong. Recommendations were also made on their respective implementation strategies.

While solar energy has been utilised for some time in Hong Kong, primarily for water heating and more recently for generating electricity using photovoltaic panels, a demonstration project was implemented to investigate the potential for wider application of solar photovoltaic (PV) technologies on buildings. PV panels with a total capacity of 55kW were installed at Wanchai Tower in late 2002. Operational data were gathered over a year and are being analysed to evaluate the effectiveness and performance of the PV system.

EEO has embarked on a field-based wind measurement programme to investigate the wind energy potential on the eastern side of Hong Kong. In 2004, two wind monitoring stations were set up on the roof of the Government Logistics Centre and at Pottinger Peak. Anemometers and wind vanes were installed at different levels of the measurement towers, some up to 50 metres, to gather wind data. Three more stations are being built at remote locations.

During the Scheme of Control Interim Review in 2003, the two power companies committed to set up commercial-scale wind turbines for public demonstration and efficiency testing, subject to detailed feasibility studies. EEO is monitoring the development plans for these wind turbines.



灣仔政府大樓的光伏系統
PV system at Wanchai Tower

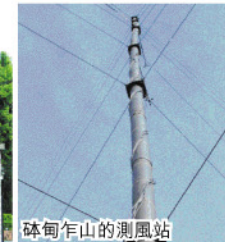
香港電燈有限公司將在南丫島建風力發電機
Hongkong Electric Company's wind turbine on Lamma Island, when built



風力及太陽能混合裝置
Hybrid wind-solar installation



太陽能街燈
Solar lighting



砵甸乍山的測風站
Wind monitoring station at Pottinger Peak



太陽能熱水器
Solar water heating

宣傳教育與國際交流 Publicity, Public Education and International Exchange



「能源資訊園地」網站甚具趣味性
The EnergyLand website has a lot of fun stuff for kids

在宣傳及公眾教育方面，我們過去十年主動走向社群，接觸社會各界及不同年齡人士，將有關節能及環保訊息宣揚開去。

我們的學校外展宣傳教育活動深入各級院校，包括幼稚園、中、小學以至大專院校。例如在中學舉辦一系列能源效益講座，並設計輕鬆話劇，將節能訊息帶給各中、小學生；至於幼稚園方面，我們則安排專責幼稚園親善大使，走訪數百幼稚園；我們並籌辦以大專學生為對象的設計比賽。此外，我們更推出一個互動教育網站「能源資訊園地」(<http://www.energyland.emsd.gov.hk>)，對象包括學生及公眾人士。

能源效益事務處有份監察兩間電力公司在管制法則下的表現，而根據管制法則，兩電有義務向公眾推廣能源效益及節能。在兩電的贊助下，能源效益中心於1996年7月在香港科學館裏成立，並為小學的常識科製作能源效益教材套。最近亦製作了網上能源效益教材套。

至於業界宣傳及教育方面，我們運用不同傳訊渠道及形式，包括研討會、工作坊及展覽等，對象包括公營及私營機構，一方面推廣我們推行的節能計劃及活動，另一方面則提供最新的節能技術及資訊。我們與其他機構及專業團體保持緊密的工作關係，並常常參與他們舉辦的會議及展覽活動。能源效益事務處更特別出版一份名為「智能」的半年刊，定期為關注能源及環保人士及機構提供最新的節能資訊，以及簡報能源效益事務處的最新工作進展。此外，我們於2004年舉辦「香港能源效益獎」(網址：<http://www.eeawards.emsd.gov.hk>)，鼓勵私營機構節約能源。我們亦為公營及私營機構舉辦的內部節能比賽提供支援。

公眾教育
Public Education





學校講座
School Talk



嘉年華會
Carnival



為學生而設的比賽
Competition for students



親善大使走訪幼稚園
Ambassador visit to a kindergarten

We have been reaching out in the past decade to many sectors of the community and people of all ages, communicating messages on energy conservation and environment protection.

Our school outreach programmes, for example, cover virtually the entire education system, from kindergarten pre-schoolers to students in the primary and secondary schools and universities. The programme consists of a series of energy efficiency talks for secondary schools, and light-hearted drama programmes for primary and secondary school students. As for pre-schoolers, dedicated ambassadors visited hundreds of kindergartens throughout the territory all year-round. Design competitions were organised for post-secondary students. For online communications, an interactive educational website, *EnergyLand* (<http://www.energyland.emsd.gov.hk>), was launched for students and the general public.

The EEO plays a monitoring role in the Scheme of Control Agreements with the power companies. Under the Agreements, the power companies have the obligation to promote energy efficiency and conservation to the public. With the sponsorship of the two power companies, the Energy Efficiency Centre inside the Hong Kong Science Museum was opened to the public in July 1996, and Energy Efficiency Education Kits for the General Studies subjects for primary schools were developed. More recently, web-based Energy Efficiency Education Kits were also designed.

As to trade education and promotion, EEO has made use of a variety of communication channels and formats. Seminars, workshops and exhibitions were organised for private and public sectors to promote our schemes and programmes and to keep them abreast of current developments.



能源效益教材套
Energy Efficiency Education Kits

We maintain a close working relationship with other organisations and professional institutions, and participate in their conferences and exhibitions on a regular basis. *EnergyWits*, a twice-a-year EEO newsletter designed for organisations and individuals concerned about energy and environmental issues, provides regular updates on energy technologies as well as progress of EEO's various initiatives. The Hong Kong Energy Efficiency Awards (website: <http://www.eeawards.emsd.gov.hk>), an energy saving competition for the private sector, was launched in 2004. We also provide support to many public and private organisations in their internal energy saving competitions.

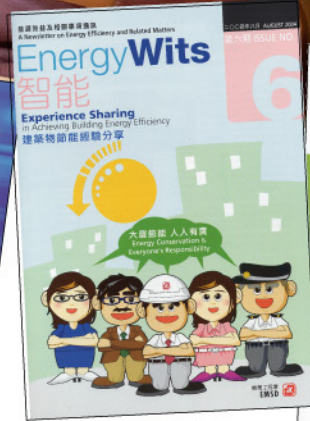
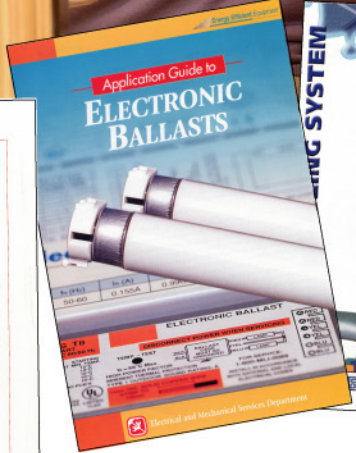
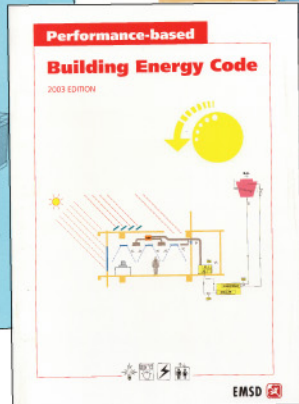
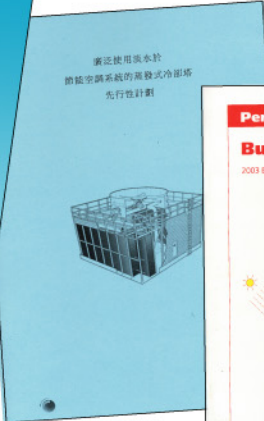
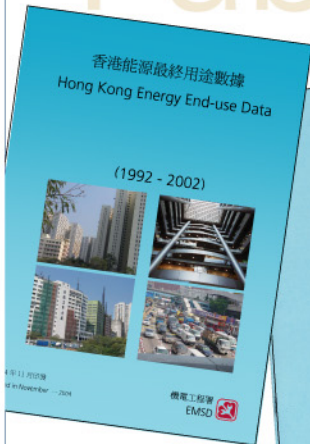


香港科學館的能源效益中心
Energy Efficiency Centre inside Hong Kong Science Museum

「智能」通訊適合行內外人士閱讀
The EnergyWits newsletter is
good for professionals and laymen alike



宣傳 Publicity



宣傳教育及國際交流

Publicity, Public Education and International Exchange

至於社區活動方面，我們籌辦嘉年華會及巡迴展覽，推廣各項節能概念及技術，並為市民提供實用的節能方法。我們透過不同媒體及渠道，包括電視、電台、電車、巴士及地鐵站等，宣揚節能訊息。我們積極參與例如環境保護署等機構舉辦的社區活動，並且協助香港地球之友舉辦太陽能車大賽。此外，我們的員工更在工餘時間義務為長者提供維修服務。

刊物是我們公眾教育的重要工具。過去十年，我們印製了林林總總的刊物和印刷品，迎合社會上不同人士的需要，包括為業界而設的工作守則、介紹節能及可再生能源技術的小冊子、關於不同主題的DVD以及一系列方便實用的小工具如「耗油量計算尺」及室溫溫度計等。當中介紹能源效益事務處各項工作的DVD「晴朗的天空」榮獲 Astrid 獎。

For the community, we regularly organise carnivals and roving exhibitions, introducing various concepts and technologies in energy conservation and providing practical energy saving tips to the general public. We also make use of the mass media, including television, radio, and advertisements on trams, buses and MTR stations, to convey our messages. We participate in community activities of other organisations such as the Environmental Protection Department, and supported the Solar Cart Races organised by the Friends of the Earth (HK). Many of our colleagues also devoted their own time to volunteer service for the elderly.

Publications are an essential part of our public education programme. In the past ten years, we have published a great variety of publications catered for the needs of different groups in the community. These include codes of practice and guidelines for the trade, pamphlets on energy conservation and renewable energy, DVDs on different topics, as well as some user-friendly tools like the "Fuel Economy Calculator" and room temperature thermometers. "The Story of Lang", a DVD introducing the work of the Energy Efficiency Office, also won an Astrid Award.



「晴朗的天空」DVD 贏得 Astrid 獎
"The Story of Lang" DVD won an Astrid Award





2003年舉行的研討會
Forum organised in 2003

在國際交流方面，我們定期參與亞太經濟合作組織能源工作組及其屬下專家小組的會議及活動，與亞太區各經濟體分享經驗。我們更於1996年及2001年主辦亞太經濟合作組織能源工作組及專家小組的會議。我們並定期收集本港的能源數據，呈交亞太經濟合作組織能源數據庫。另外，我們分別於2003及2004年舉辦了兩個大型國際性研討會，邀請世界知名學者及專家出席主講，吸引了數百人士參加。



2004年舉行的研討會
Symposium organised in 2004

On the international front, we regularly participate in activities and meetings of the APEC Energy Working Group and its Expert Groups, sharing experiences with other economies along the Pacific Rim. We hosted the APEC Energy Working Group and Expert Group meetings in 1996 and 2001. We gather and submit energy statistics of Hong Kong for the APEC Energy Database on a regular basis. Moreover, we organised two international conferences in 2003 and 2004 respectively, in which world-renowned scholars and experts addressed hundreds of participants.

國際交流

International Exchange

亞太經合能源工作組會議
APEC Energy Working Group Meeting



28th Meeting of the APEC Energy Working Group
Port Douglas, Australia, 3-4 November 2004

2001年在香港舉行的亞太經合專家小組會議
APEC Expert Group Meeting held in Hong Kong in 2001



亞太經合能源工作坊
APEC energy workshop



攜手同走節能路

Joint Efforts for a More Energy-efficient Future



機電工程署助理署長 / 能源效益

黃達平 太平紳士

Mr **UY Tat-ping, JP**

Assistant Director / Energy Efficiency

Electrical and Mechanical Services Department

欣逢能源效益事務處十周年誌慶，我藉此機會向各同事致以衷心的感謝，同事們在過去十年確實是盡心盡力。政府上下以及來自各公營及私營機構的朋友更一直支持我們所推行的計劃及活動，對此我謹深表謝意。

能源效益事務處成立初期，主要從事能源標籤、能源管理及監管電力公司的工作。時至今日，我們的工作範圍已覆蓋甚廣，擴展至包括建築物能源效益守則、水冷式空調系統、先進的節能科技、新及可再生能源科技、能源數據及基準等領域。在眾同事的熱誠下，我們定必繼續努力，再創新猷，在本港可持續能源發展的路途上盡一分力。

我們的工作實在有賴來自各方的鼎力支持和合作，包括相關的決策局、諮詢委員會、政府部門、公營機構、電器及設備供應商、物業發展商、物業管理公司、顧問公司、教育機構等。我們和一眾友好同樣深知能源效益及節能的重要性，及其可為社會帶來的好處。抱著這個共同信念，相信在未來十年我們將繼續合作無間。

對於過去十年的成果，能源效益事務處上下各人均感到自豪。展望將來，我們會與我們的夥伴以更堅定、更熱誠的心志迎接未來的挑戰。

On this special occasion of the 10th anniversary of the Energy Efficiency Office, I wish to express my wholehearted thanks to my colleagues and associates for their hard work and dedication all along, and to our friends both within the government and outside the government for their support of our energy efficiency initiatives, schemes and programmes.

The Energy Efficiency Office started with an initial focus on energy labelling and energy management, along with monitoring the power companies. Now it has covered also the grounds of building energy codes, water-cooled air-conditioning, new energy-efficient technologies, new and renewable energy technologies, and energy data and benchmarking. With the devotion of the colleagues, we will continue our present efforts and will also explore new grounds, for the sake of building a sustainable energy future.

Many parties have joined forces in our endeavour – the bureaux, the advisory committees, government departments, public organisations, appliance and equipment suppliers, property developers, property management companies, consulting companies, educational institutions, and many others. We are joined together by a common understanding of the benefits and importance of energy efficiency and conservation, and a commitment for a sustainable future. With this understanding I believe our union will continue to strengthen in the next decade.

While we, at the Energy Efficiency Office, take pride in what we have achieved over the last decade, we shall move forward with our partners – with an even stronger drive and enthusiasm, to meet the challenges ahead.

團隊 The Team

能源效益事務處的團隊，由資深的專業人士組成。我們的共同目標，是把香港的能源效益和節能工作做得更好。我們慶幸十年來，得到很多事務處的前任同事和其他有心人，為我們的工作打下紮實的基礎。沒有他們當年的遠見和魄力，我們不會有今日的成績。我們希望繼續得到社會各界及有關人士的支持，讓我們昂首迎接第二個十年的挑戰。

The EEO team comprises experienced professionals dedicated to taking energy efficiency in Hong Kong to new heights. We are also fortunate to have inherited a strong foundation laid by our predecessors and all those who have contributed to our work in the past decade. Without their vision and pioneering efforts, the EEO would not have achieved what it has achieved to date. We look forward to the continued support of all our stakeholders and the community, as we take on the challenges of our new decade with confidence and pride.



2004年4月能源效益事務處同事合照
Photo of Energy Efficiency Office colleagues taken in April 2004

歲月留影

Snapshots in Time



視察印度一間家電廠房的測試所
Visit to appliance testing laboratory
in a factory in India



參觀日本的區域供冷系統
Visit to district cooling system in Japan



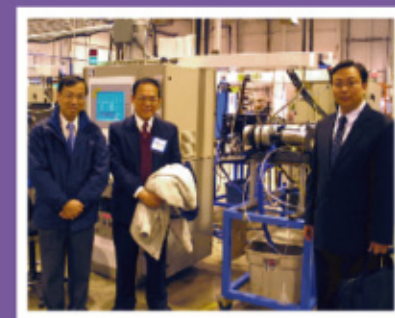
參加亞太經合工作坊時
參觀夏威夷的光伏板系統
Visit to a PV system in Hawaii
during an APEC workshop



陪同持續發展小組成員及記者團
參觀汕尾的風力場
Accompanying members of
Sustainable Development Unit
and reporters to visit wind
farm at Shanwei



參觀加拿大氢能設備時
試用加氣站
Trying out a
hydrogen refuelling
station in Canada



參觀加拿大燃料電池測試設備廠房
Visit to fuel cell testing equipment factory in Canada

立法會議員參觀灣仔政府大樓的光伏系統
LegCo Members' visit to Wanchai Tower PV system



各國能源專家匯集香港參加亞太經合專家小組會議
Energy experts from different countries gathering
in Hong Kong for APEC expert group meeting

參觀中國科學院廣州能源研究所
Visit to Chinese Academy of
Sciences Guangzhou Institute of
Energy Conversion



能源效益事務  機電工程署

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能源資訊園地網址 Energyland Website: <http://www.energyland.emsd.gov.hk>

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