小測試 Quiz

1. 下列哪一項不是《空調裝置守則》訂明的表格?
   (a) 空調負載計算
   (b) 空氣管道滲漏測試
   (c) 風機電動機功率
   (d) 空調設備效能

2. 請按下列電燈的能源效益，由小至大，順序排列。
   (i) 長形熒光燈
   (ii) 高壓鈉燈
   (iii) 鎢絲鹵燈
   (iv) 鎢絲燈

3. 請按下列電燈的壽命，由短至長，順序排列。
   (i) 長形熒光燈
   (ii) 高壓鈉燈
   (iii) 發光二極管燈
   (iv) 鎢絲燈

4. 就本港所有食肆而言，請按下列最終能源用途的最終能源消耗量，由大至小，順序排列。
   (i) 煮食
   (ii) 照明
   (iii) 空氣調節

5. 在正常行車情況下， 駕駛一輛 1,500 c.c. 的房車， 以下哪種行車速度最省汽油?
   (a) 每小時 30 公里
   (b) 每小時 80 公里
   (c) 每小時 110公里

6. 請問「退伍軍人症」與「退伍軍人」有何關係？
   (a) 該病源於1965年的法國海外退伍軍人會議。
   (b) 該病源於一隊於1970年撤出越南的軍人。
   (c) 該病於1972年在英國一個軍營首次發現。
   (d) 該病於1976年一批美國退伍軍人在一家酒店舉行會議時首次發現。

7. 請按下列再生能源對全球能源生產的貢獻，由大至小，順序排列。
   (i) 太陽能
   (ii) 風力能
   (iii) 水力能

8. 請按下列發電技術的產電成本（每度電的電費），由大至小，順序排列。
   (i) 水力發電
   (ii) 化石燃料發電
   (iii) 風力系統
   (iv) 光伏板

1. Which of the following is NOT an AC Form (i.e. worksheet) in the Code of Practice for Air-conditioning Systems?
   (a) AC Load Calculations
   (b) Air Duct Leakage Test
   (c) Fan Motor Power
   (d) AC Equipment Efficiency

2. Can you arrange the following lamps in the order of increasing energy efficiency (i.e. least efficient first)?
   (i) Linear fluorescent lamp
   (ii) High pressure sodium lamp
   (iii) Tungsten halogen lamp
   (iv) Tungsten filament lamp

3. Can you rank the following lamps in terms of lamp life (shortest life first)?
   (i) Linear fluorescent lamp
   (ii) High pressure sodium lamp
   (iii) Light emitting diode lamp
   (iv) Tungsten filament lamp

4. For all of the restaurants in Hong Kong, can you rank the following end-uses in decreasing energy consumption (in terms of final energy)?
   (i) cooking
   (ii) lighting
   (iii) air-conditioning

5. Under normal driving condition, when driving a passenger car of 1,500 c.c., which of the following speed consumes least amount of fuel?
   (a) 30 km/hr
   (b) 80 km/hr
   (c) 110 km/hr

6. What is the relationship between "legionnaires' disease" and "legion"?
   (a) The source of infection of the disease was from the French Foreign Legion in year 1965.
   (b) The source of infection of the disease was from the military force coming back from the Vietnam war in year 1970.
   (c) The disease was first discovered in a UK military camp in year 1972.
   (d) The disease was first discovered following an outbreak at an American Legion convention in a US hotel in year 1976.

7. Can you rank the following renewable energy resources in terms of their contribution to the world's energy production, largest first?
   (i) Solar
   (ii) Wind
   (iii) Hydro

8. Can you rank the following power generating technologies in terms of cost of delivered energy ($/kWh), largest first?
   (i) Hydro power plant
   (ii) Fossil fuel power plant
   (iii) Wind turbine system
   (iv) Solar photovoltaic system

答案 Answer : 1) a; 2) iv, iii, i, ii; 3) iv, i, ii, iii; 4) i, iii, ii, 5) b; 6) d; 7) iii, ii, i; 8) iv, iii, i, ii

聯絡資料 Contact

任何人仕如果想就本通訊提出意見或詢問，又或者想加入本通訊的寄件名單內，請與我們聯絡，聯絡資料如下：

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EnergyWits 智能

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

機電工程署署長
黎仕海

Roger S. H. Lai
Director of Electrical and Mechanical Services

署長的話 Message from the Director

很高興《智能》創刊號正式與大家見面。這份通訊由本署能源效益事務處編製，內容豐富，包括能源效益及環保事宜的專題文章、簡訊、工作進程、特寫等。

環保及能源效益是近年的熱門話題。與此同時，世界對工程專業的要求亦隨之而轉變。這轉變將令我們更接近工程學的基本理念，即是為了提高人類的生活質素。本署能源效益事務處於1994年成立。在這數年間，該處展開了多項改善本港能源效益的工作，現在是時候將有關經驗及知識與大家分享。

荀子在《勸學》篇中指出「學不可以已」，我相信這份通訊將可擴闊大家的工程視野，有助大家掌握節能科技的最新發展。

Welcome to the first issue of EnergyWits - a newsletter from the Energy Efficiency Office of the Department. In this newsletter, you will find a focus article, a feature article, and news on progress of current initiatives covering a wide spectrum of energy efficiency and environmental issues.

Environmental and energy efficiency issues have attracted widespread public attention in recent years. This has been accompanied by a shift of the world's expectation towards the engineering professions. A shift that moves us closer to the fundamental ideal of engineering, that is, to enhance the quality of life for all mankind. Our Department established the Energy Efficiency Office in 1994. The office has done much prolific work in these few years to improve the energy efficiency of the territory. It is time to share the experience and knowledge.

Ancient Chinese scholars had always stressed the importance of continuous learning. I believe this newsletter will be a good medium to keep all of us abreast of the current development of energy efficiency technology and broaden our vision in engineering.

香港的能源實況
Energy Scene of Hong Kong

引言

能源對現代社會的　展十分重要，對　港　個大都會來說，能源對所有經濟　動　足輕重。

與能源使用有關的事宜有數端：

- 我們大部分能源均來自燃燒化石燃料，例如石油、氣體和煤。燃燒化石燃料（　別是汽車燃料）會釋放一些副產品，例如硫酸基、硝酸基及微粒。　副產品在一定程度上對我們的健康和環境造　影響。
- 另一種燃燒的副產品是　氧化碳。二氧化碳是一種温室氣體，被視　會導致全球　暖的主要原因。
- 　港本土並沒有能源　源，我們必須完全依賴進口燃料。儘管能源供應的穩定性一直沒有對　港構　嚴重的　，但我們的經濟在油價高企時確有受到影響。
- 化石燃料是　能再生的能源，我們　用得多，留給後代的便　少。

藉著改用較清潔和產生較少二氧化碳的燃料，我們可減輕部分污染和温室氣體排放的　。在電方面，我們已逐步改用天然氣，至於交　方面，我們已重整的士車　，由使用輕　柴油改使用石油氣。

一些基本詞彙

在我們談論　港的能源實況前，我們要先界定一些關鍵詞彙。先，能源的「最終用　」是指能源最終耗用時的　定用　。　明、　、煮　、冷藏、動力　全都是能源的最終用　。用於最終用　的能源稱「最終能源」，以便與「一　能源」區分開來。後者　在最終能源使用層面的總耗用量，　上能源　化（例如電）和傳送過程中所損失的能源。（　參考圖1。）

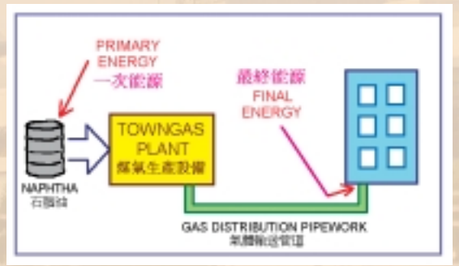


圖 1　Fig. 1

對　港來説，電力、煤氣、石油氣、汽油、柴油、重質燃油、煤和木炭都是　形式（體）的最終能源，至於一　能源方面，我們有天然氣、入口電力、煤、石腦油（用作生產煤氣）、石油氣、汽油、柴油和重質燃油。

由統計署製作的《　港能源統計》，有　能源種類的　季及　統計字。「一　能源需求」(PER)及「最終能源需求」(FER)的　字亦　於　份刊物中。　些　料均根據入口／出口　料及主要能源供應商呈報的　料，以「由上下」的形式制定。「一　能源需求」及「最終能源需求」的　字即國際刊物用的「一　能源總供應量」(TPES)及「最終能源總消耗量」(TFC)　字。

外，機電工程　能源效益事務處亦以「由下上」的方法和透過從各　統計、　查和計　所得的　料，　製了另一套能源消耗量　料。有關能源最終用　的　料貯存於「　港能源最終用料庫」內。

的「能源最終用　總消耗量」(TEUC)是綜合　度能源最終用　料庫　所有最終用　的能源消耗量計　所得。根據　港能源最終用　料庫所收　料的範圍，能源最終用　總消耗量基本上包括了所有在　港境　所消耗的最終能源，以海陸　口岸為界限，但近區和國際口岸　間交往來所消耗的能源　在計　列。因　，能源最終用　總消耗量反映出　港純粹「內部」的能源最終消耗量。能源最終用　總消耗量的　字可補充一　能源需求和最終能源需求　字，更全面　反映出　港的能源使用情　。

整體能源消耗趨勢

明白　港的能源消耗趨勢，我們首先要看看圖2，該圖載列了　港在1984年至1998　間的能源最終用　總消耗量趨勢，以　焦耳　單位

Introduction

Energy is crucial to the development of modern society. For a metropolitan city like Hong Kong, energy is of fundamental importance to all economic activities therein.

There are a few issues related to the use of energy:

- Most of our energy comes from combustion of fossil fuel - oil, gas, and coal. Combustion of fossil fuel, particularly motor fuel, releases a number of by-products such as SO_x, NO_x, and particulates. Such by-products may to a certain extent affect our health and our environment.
- Another combustion by-product is CO_2 (carbon dioxide). CO_2, a greenhouse gas, has been identified as a potential major contributor to global warming.
- There are no indigenous energy resources in Hong Kong, we have to rely totally on imported fuel. Although energy security has not been a very serious problem for Hong Kong, our economy did suffer in times of high oil prices.
- Fossil fuel is a non-renewable energy source. The more we use, the less remains for future generations.

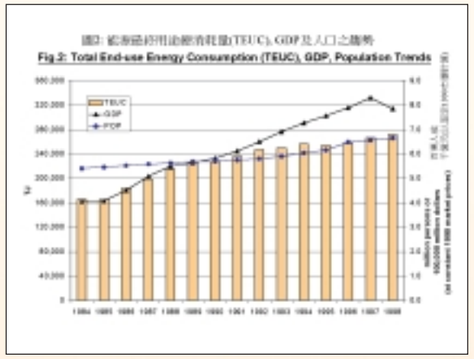
We can partly alleviate the pollution and greenhouse gas emission problems by switching to cleaner and less carbon-intensive fuel. For electricity generation, we have been switching to the use of natural gas. On transport side, we are revamping our taxi fleet, switching from the use of light diesel oil to liquefied petroleum gas (LPG).

Some basic terms

Before we talk about energy in Hong Kong, there are a few key terms that need to be defined here. First of all, "end-uses" of energy refer to the specific purposes for which energy is finally consumed. Lighting, air-conditioning, cooking, refrigeration, motive power, etc. are all end-uses of energy. The energy consumed by end-uses is known as "final energy", to distinguish it from "primary energy" which is sum total of the energy consumed at end-use level plus energy losses during the transformation (e.g. electricity generation) and distribution process. (See Fig.1.)

For Hong Kong, electricity, towngas, LPG, petrol, diesel oil, heavy fuel oil, coal, and wood charcoal are different forms (or "carriers") of final energy. For primary energy sources, we have natural gas, imported electricity, coal, naphtha (for towngas generation), LPG, petrol, diesel oil, and heavy fuel oil.

The Hong Kong Energy Statistics produced by the Census and Statistics Department provide quarterly and annual statistical figures for different energy sources. The "Primary Energy Requirements (PER)" and "Final Energy Requirements (FER)" figures are reported in that publication. These are based on import/export data and on data reported by major energy suppliers, and so are derived using an essentially "top-down" approach. The "Primary Energy Requirements" and "Final Energy Requirements" figures correspond to the "Total Primary Energy Supply (TPES)" and "Total Final Energy Consumption (TFC)" figures respectively which are the terms being used in international publications.



Besides, the Energy Efficiency Office of the Electrical and Mechanical Services Department also compiles another set of energy consumption data using a "bottom-up" approach and using data from various statistical sources, surveys and estimations. The energy end-use data are stored in the Hong Kong Energy End-use Database.

The "Total End-use Energy Consumption (TEUC)" figure for each year is obtained by summing the energy consumption of all end-uses in the Hong Kong Energy End-use Database. TEUC basically includes all final energy consumed by local end-uses of Hong Kong up to the air/sea/land ports, excluding regional and international port-to-port transportation energy consumption. In this way, TEUC reflects solely the "internal" energy consumption of Hong Kong at the end-use level. In this sense, TEUC is complementary to PER and FER in reflecting the energy scene of Hong Kong.

Aggregate energy consumption trend

To understand the energy consumption trend of Hong Kong, we first look at Figure 2 which shows the TEUC trend for Hong Kong from 1984 to 1998, in TJ (terajoules = 10^{12} joules), superimposed on which are the population and

（1 = 10^{12} ），並入了人口和本地生產總值趨 的 料。在八十 代，能源最終用 總消耗量的走 跟 本地生產總值的走 ，但到九十 代， 種情 已有所改 ，部分原因是能源最終用 總消耗量並 包括往來 港和附近港口的船隻所消耗的燃料， 方面的能源消耗 在九十 代 得日益重 。 外，工業 動的減少 是原因之一。

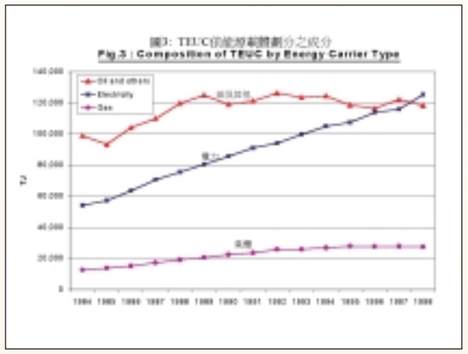


圖 3 將 1984 至 1998 能源最終用 總消耗量以能源 體的分類列出，我們可以 到電力消耗量幾乎呈 線上升，但氣體和油則沒有 種情 。我們 現電力消耗量差 多與本地生產總值 步增長， 外，若近區船隻的能源消耗量也計 在 的 ，則油的總消耗量也有 體增長。

1998 ，電力佔能源最終用 總消耗量的 45%，煤氣和石油氣約佔 10%，其餘 其他油產 如汽油、 油、火水 。

展望將來，預 港的人口和 體經 動會 斷增 。假設經 斷增長，工人的生產力上升（即本地生產總值會比人口增 快），經 結構像以往般那樣改 ， 估計未來十 的能源最終用 總消耗量會增 約 26%。

按類別和最終用途區分的能源消耗

於 港能源最終用 料庫的 港能源最終用 料，是以「類別」、「組別」、「最終用 」和「設備」來分類的，當中共有四大類別，即住宅、 業、工業、運輸。圖4顯示 個類別在 1984 至 1998 的能源最終用 總消耗量趨 ，很明顯，增長最快的類別 業類別， 工業類別的增長自八十 代 起 斷下降。

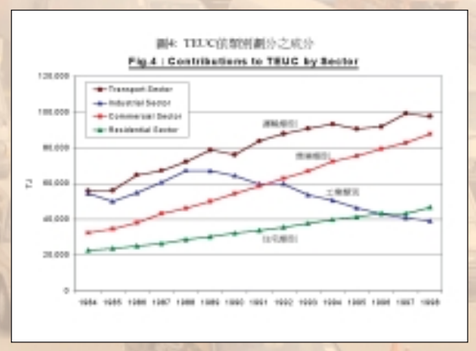


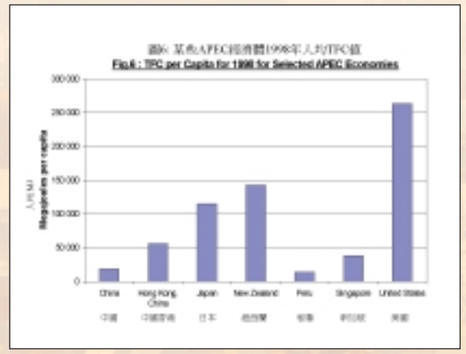
圖 5顯示了住宅、 業和運輸類別在 1998 的 最終用 的組 分。我們現 的耗電量佔全部電力消耗量差多三分之一，大約是 度能源最終用總消耗量的 15%， 點 在很有啟性。

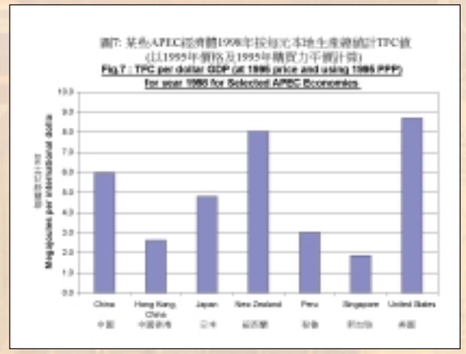
與其他經濟地區的比較

1998 ，我們的人口只佔 界人口總 的 0.11%，以購買力平價計 的本地生產總值 佔 界總值的 0.41%， 一 能源總供應量 佔 界總值的 0.17%。（以購買力平價計 的本地生產總值，其字已按 國家 經 的價 水平差別予以 。）

《國 能源局 (IEA) 界能源統計2000版》 列了 134 個經 在 1998 的能源統計 料，若把按本地生產總值 元（購買力平價計）計 的一 能源總供應量 字由小至大排列，我們與其餘兩個經 並列六，那代 我們有良好的能源生產力。 由於 港氣候和、城市結 密集、工業在經 動中所佔比例甚少，以及善用能源所 。

圖6和圖7分別 列 港及一些亞經 組織國家1998 的人均最終能源總消耗量和按 元本地生產總值（購買力平價計）計的最終能源總消耗量的對比料。有關 料以《1998年亞經 組織（APEC) 能源統計》 據。 據 證 前述有關我們善用能源的論點。





GDP trends. TEUC basically followed the GDP trend in the 80s and then departed in the 90s. The departure is partly due to the fact that TEUC does not include the fuel consumed by marine vessels travelling between Hong Kong and nearby ports, which became increasingly significant in the 90s, and also due to the decline of industrial activities.

Figure 3 shows the breakdown of TEUC from 1984 to 1998 into energy carrier types. We can see that electricity had been growing almost linearly while gas and oil did not. It is interesting to note that electricity consumption grew almost hand-in-hand with GDP. Also, it is expected that oil should exhibit an overall growing trend if regional marine vessel consumption had been taken into account.

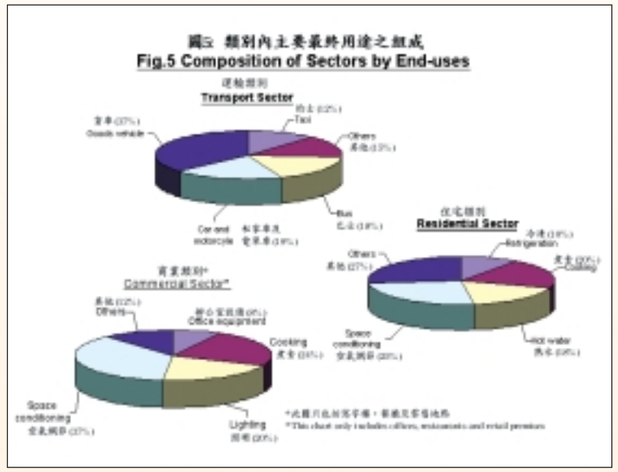
For 1998, electricity accounted for about 45% of TEUC, towngas and LPG about 10%, and the rest being other oil products like petrol, diesel, kerosene and so on.

Looking ahead into the future, Hong Kong is expected to continue to expand in population and in the aggregate economic activities. It is estimated that TEUC will increase roughly by about 26% in the coming decade, under the assumption that the economy will continue to grow, labour productivity will increase (i.e. GDP will grow faster than population), and the structure of the economy will continue to change as it has been doing.

Energy consumption by sector and by end-use

The energy end-use data in the Hong Kong Energy End-use Database are organized in a "sector" - "segment" - "end-use" - "technology" breakdown structure. There are 4 major sectors - Residential, Commercial, Industrial, Transport. Figure 4 shows the trend of each sector within TEUC from 1984 to 1998. Obviously the fastest growing sector is the Commercial Sector while the Industrial Sector has been declining since the late 80s.

Figures 5 shows the composition of the Residential Sector, Commercial Sector, and Transport Sector when broken down into the major end-uses, for the year 1998. One may find it inspiring to know that space conditioning accounted for almost one-third of all electricity consumption, and about 15% of TEUC in that year.



omparison with other economies

In 1998, our population is only 0.11% of world total, our GDP in purchasing power parity (PPP) terms is 0.41% of world total, while our TPES is 0.17% of world total. (Use of PPPs for computation of GDP produces a GDP that has been corrected for differences in price levels between countries or economies.)

134 economies are listed in the publication "IEA Key World Energy Statistics 2000 Edition" which contains reported energy statistics for these economies for the year 1998. When arranged in increasing order of the TPES-per-dollar GDP (in PPP terms) figure, we rank number 6 along with two other economies in the same ranking. That means we have been using energy rather productively. The contributing factors are: temperate climate and compact formation of our city, relatively low share of industries in our economy, and efficient use of energy.

Figures 6 and 7 show the comparison between Hong Kong and some other APEC economies in terms of TFC-per-capita and TFC-per-dollar GDP (in PPP terms) for the year 1998, using data from the "APEC Energy Statistics 1998". These figures re-confirm the previous point about our productive use of energy.

特寫 Feature Article

創新節能設備的應用

Application of Innovative Energy-efficient Equipment

過去十 的科技 展一日千 ，製造出不少精良的節能設備和系統。 了追上最 的 展，機電工程 能源效益事務處一 力尋找現時最 的能源科技，俾能於政府建築 試用。

With the rapid advance in technology in the past decades, many sophisticated energy-efficient equipment and systems have been developed. In order to keep pace with the latest development, the Energy Efficiency Office of the Electrical and Mechanical Services Department has been doing a lot in exploring the latest energy technology available for trial application in government buildings.

1995 ，本 開展了 一階段能源管理措施試驗計劃， 三 。 個計劃的目的，是要研究 種先進節能科技在本地操作的 本效益。 一階段試驗計劃以 20 幢政府 建築 目標， 建築 均有固定的辦工時間、典型的樓面 計及 類型的技 計，我們選由一個部門／辦事處佔用並由本 責維修的一 樓，來安 的節能設備 更換現有設備。有關的節能設備包括 大類：可減低 光燈耗電量的電 鎮流器及按 節 冷度的 驅動器。 一階段試驗計劃的分析果顯示，使用節能科技能大量節省開支。 一階段試驗計劃於 1999 3 我們進行了 計，現經改 的政府建築 能源消耗量 低， 可節省約 170 萬元（ 6.8 的能源）。有關果 顯示了 一階段試驗計劃所改 的節能設備甚具成本效益，我們 計電 鎮流器設備的回本 少於三 ， 驅動器 四 。

圖 1：高強度放電燈 明系統
Fig. 1: Lighting system using high-intensity discharge lamps

In 1995, EMSD began a 3-year Phase 1 Pilot Energy Management Opportunity (EMO) Implementation Programme. The objective of this Programme was to examine the cost-effectiveness of various advanced energy-efficient technologies under local conditions. The Phase 1 Pilot Programme targeted 20 major government buildings which had regular working hours, typical floor layout and adequate coverage of various technical designs. We installed new energy-efficient equipment, or replaced existing equipment, on one or two selected floors occupied by a single department/agency and maintained by EMSD. The energy-efficient equipment consisted of two main types: electronic lighting ballasts, which minimise electricity consumption by fluorescent tubes; and variable speed drives (VSDs), which regulate levels of air-conditioning according to demand. Analysis of the results of this Phase 1 Pilot Programme clearly shows that considerable savings can be achieved by using energy- efficienct technologies. After completion of the Phase 1 Programme in March 1999, we estimated that there would be savings of about $1.7 million (or 6.8TJ in terms of energy) per year arising from lower energy consumption in the retrofitted government buildings. The results also demonstrated that retrofitting energy-efficient equipment for the Phase 1 Pilot Programme was cost-effective: we estimate a payback period of less than 3 years for electronic ballast equipment and 4 years for VSDs.

階段試驗計劃於 2000 展開，進一步 現有的 能源科技的應用進行測試，包括在北角政府 大樓安 能源優化 置，並監察自動梯馬達驅動系統功率損耗降低的情 ；在旺角政府 大樓安 了 能升 機控 系統，以測試 的升 機客流量及能源 現；在我們的辦公 、金鐘道政府 、警政大樓和 的環境及 局總部，安 光感應器及 動感應器於一身的 T5 光管及明器；把保安道街市和葵涌的水務 初級職員宿舍的 流雙 升 機驅動器改 頻升 機驅動器；最近又在九龍公園安 了一個間接蒸 式熱能回收系統，以進行測試。我們仍在分析 置所節省能源的 切 量， 計均能源節省量 30%。

The Phase 2 Pilot Programme started in 2000 for testing further innovative energy technology available. We have installed energy optimisers and monitored the reduced power losses in the escalator motor drive systems in the North Point Government Office Building. We have also installed an intelligent lift control system in Mong Kok Government Office Building for testing the new energy and lift traffic performance. The new T5 fluorescent lamps and luminaires, incorporating photo and occupancy sensors, have also been installed and tested in our own offices, Queensway Government Office, Arsenal House and the new Environment and Food Bureau headquarters. The upgrading of Alternate Current (AC) 2-speed lift drives to Variable Voltage Variable Frequency (VVVF) lift drives are also in progress in Po On Market and WSD Junior Staff Quarters at Kwai Chung. We have also recently installed an indirect evaporating heat recovery unit in Kowloon Park for testing. The exact energy savings for this installation are still being analysed and an average energy saving of 30% is anticipated.

圖 2 ：高輸出T5管 明系統
Fig. 2: Lighting system using high-output T5 lamps

最近，我們在東啟德 動場安 了一個 的高輸出 T5 管 明系統，以 與現有使用高強度放電燈的高位 明系統比 ，圖 1 及 2 顯示高強度放電燈 明系統及高輸出 T5 管 明系統的 片，可後者的 明效果 佳。 T5管 明系統的能源節省量超過 40%。

Recently, we have installed a new high-output T5 lamps lighting system at East Kai Tak Indoor Game Hall for comparison with the existing high-bay lighting system using high-intensity discharge lamps. Figures 1 and 2 show the lighting systems for high-intensity discharge lamps and high-output T5 lamps respectively. It can be seen that the latter system is a better lighting scheme. Energy savings of over 40% are achieved with the new T5 lighting system.

簡訊 News Update

節能空調系統蒸發式冷卻塔廣泛使用淡水先行性計劃

New Pilot Scheme Areas for Wider Use of Fresh Water in Evaporative Cooling Towers

第 批 11個 已於2001 6 6日納入先行性計劃內，連同在2000 6 1日公布的6個 ， 計劃目前在17個 施。有關 的非住宅建築 擁有人可申 在他們的空 系統使用淡水供蒸 式冷卻 用。

典型蒸 式冷卻塔
Typical evaporative cooling towers

本計劃旨在：

- 推廣具能源效益的水冷式 系統；
- 評 對基礎 施的 響；
- 評 對健康及環境的 響；及
- 進行全港採用水冷式 系統研究提供 料。

有關計劃的詳細 料可 機電工程署網站。

The second lot of eleven pilot scheme areas had been announced on 6 June 2001. Including the six areas launched on 1 June 2000, there are now seventeen areas under the scheme. The owners of non-domestic developments within the areas can apply to use fresh water for evaporative cooling in air-conditioning systems.

The aims of this pilot scheme are

- to promote energy-efficient water-cooled air-conditioning systems;
- to assess the impacts to the infrastructure;
- to assess the health and environmental effects; and
- to provide information for a territorial study for the implementation of water-cooled air-conditioning systems in Hong Kong.

The details of the scheme may be viewed at EMSD website.

確認能　效益標籤計劃的測試設施

Recognition of EELS Testing Facilities

本　5　，我們已認可日本事務機械工業會(Japan Business Machine Makers Association)　三方審　，以審　日本　印機供應　與影印機能源效益標籤計劃的申　。

In May 2001, we accepted the Japan Business Machine Makers Association as a recognised third party to certify applications for energy labels from Japanese photocopier suppliers under the Energy Efficiency Labelling Scheme (EELS) for Photocopiers.

有關家用儲水式電熱水　能源效益標籤計劃測試　施方面，我們在6　已確認　祥公　行有限公司和佛山產　量　督檢驗所　適的電熱水　能耗測試實驗所。

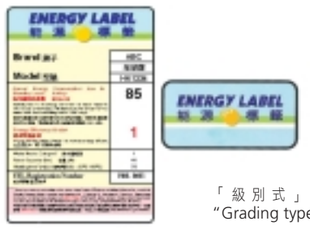
As for the EELS for Household Electric Storage Water Heaters, we have recognised the Intertek Testing Services ETL SEMKO and the Foshan Product Quality Supervision Testing Institute in June 2001 to be suitable testing laboratories to carry out energy consumption tests on household electric storage water heaters.

新能　效益標籤計劃

New EELS for 2001

我們計劃於今　12　推出電飯煲及多功能（傳　、　印、打印）文件處理　的能源效益標籤計劃。我們已到有關供應　/製造商對擬議能耗測試方法的意　，目前正擬備　款電氣　的標籤計劃文件初稿。

We plan to launch new EELSs for rice-cooker and multifunction (fax/photocopy/print) device in December of this year. Comments from relevant suppliers/manufacturers on the proposed testing methodology for energy consumption and efficiency measurement of rice-cooker and multifunction device had been received. The draft EELS documents for these two types of appliances are being prepared.



「級別式」及「確認式」能源標籤
"Grading type" and "Recognition type" energy labels

新建築物能　守則快將出版

New Building Energy Code on its way

我們正委託顧　公司，　究　製以　現　本的　築　能源　，以補現時規　性　則的　足。　將應用「總能源預算」的概念去製訂基本　現指標，可給進取的　計師提供　計尖端節能大廈所　的　計彈性；　一方面，只是一　的樓宇　計，　慮因素是減低符　求的工作量，　現有的規　性　能提供完備的指引。顧　究預計於本　底展開，八個　。

We are commissioning a consultancy study to develop a performance-based building energy code to supplement the existing prescriptive codes. The new building energy code will make us of the concept of "total energy budget" to formulate its base performance indicator. It will provide great flexibility for ambitious designers to produce the state-of-the-art energy-efficient buildings while, on the other hand, the existing prescriptive codes remain intact for popular designs in which a minimal code-compliance effort is of prime concern. The study will commence by end of this year and will last for 8 months.

1999年香港能源最終用途數據的更新工作正在進行

Hong Kong Energy End-use Data Being Updated to 1999

我們正　理1999　港能源最終用　據，並預計在本　底完成更　工作。　據可於屆時公布。去　公布的「　港能源最終用　據（1988至1998）」仍在機電工程署網站刊登，供公眾人士閱覽。市民亦可在　港　鑼灣　頓道111　11樓機電工程　能源效益事務處免費取得有關　據。

We are now compiling the energy end-use data for 1999, which is planned for completion and release by the end of this year. Currently, the set of "Hong Kong Energy End-use Data (1988-1998)" published last year is still available for viewing by the public at EMSD's web-site. Copies of the data set are also available free at the Energy Efficiency Office at 11th floor, 111 Leighton Road, Causeway Bay, Hong Kong.

Consultancy Study on the　有關能　消耗量指標及基準的顧問研究

Development of Energy Consumption Indicators and Benchmarks

我們正委託顧　公司進行一「　港　能源使用　別訂　一套能源消耗量指標及基準的顧　究」。　顧　究會　私人辦公　、售商店、私家車和　型客貨車　能源使用別訂　能源消耗量指標及基準。在2002　顧　究　，　會有更佳的工　以有關能源使用　別的能源消耗趨　，別的最終使用　將會有　估自身　現的　料和工　。

We have commissioned the Consultancy Study on the Development of Energy Consumption Indicators and Benchmarks for Selected Energy Consuming Groups in Hong Kong. The consultancy study will develop energy consumption indicators and benchmarks for the energy-consuming groups of: Private Offices, Commercial Outlets, Private Cars, and Light Goods Vehicles. When the consultancy study is completed (in 2002), the Government will have better tools to track or monitor the energy consumption trends of the respective energy-consuming groups, and end-users in these groups will have the data and the tools to assess their own performance.

電力公司的非住宅用戶節能供暖、通風及空調設備回扣計劃

The Power Companies' HVAC Rebate Programmes for Non-residential Customers

根據　批准的用電需求管理　源方案，　港電燈有限公司（下稱港燈）及中華電力有限公司（下稱中電）在2001　6　1日推行非住宅用戶節能供　、　風及　回扣計劃和非住宅可　驅動　回扣計劃，以鼓勵非住宅用戶在中央供　、　風及　設備中安　可　驅動　高效能　設備，藉　提高能源效益。所有港燈和中電的非住宅用戶均可　上述計劃。由2001　6　1日起至2002　12　31日止，　安　節能供　、　風及　備，包括可　驅動　及　定的空　置，且符　電力公司的回扣準　，均可獲得回扣。上　回扣計劃詳情　下　網　，亦可　電　：

According to the Demand Side Management Resource Plan approved by the government, the Hongkong Electric Co. Ltd. (HEC) and CLP Power Hong Kong Ltd. (CLP Power) had launched the Energy Efficient Heating, Ventilating & Air-conditioning (HVAC) Rebate Programme and the Variable Speed Drive (VSD) Rebate Programme on 1 June 2001, to encourage their non-residential customers to install energy-efficient HVAC equipment such as VSDs in their central HVAC systems for energy efficiency improvements. All non-residential customers of HEC and CLP Power are eligible to participate in the rebate programmes. From 1 June 2001 to 31 to December 2002, participants will be given rebates for installing energy-efficient HVAC equipment, such as VSDs and specific air-conditioning equipment, provided that the power companies' criteria for rebates are met. Further information about the rebate programmes can be found at the following websites and telephone hotlines:

	網	電話熱		Website	Telephone Hotline
中華電力	www.clpgroup.com/dsm	2678 7007	CLP Power	www.clpgroup.com/dsm	2678 7007
港電燈	www.hec.com.hk/hec/dsm	2555 1082	HEC	www.hec.com.hk/hec/dsm	2555 1082

亞太經濟合作組織能源數據及分析專家組第十二次會議

12th Meeting of APEC Expert Group on Energy Data & Analysis

3 26至27日期間， 經 作 能源 據及分析專家 十二 會議在 港召開。機電工程 代 中國 港辦是 會議。

大部分 經 作 經 體也有派代 是 會議。與會 包括 能源 究中心、東南 國家協會能源中心、國 能源 國 團體的代 。

經 作 能源 據及分析專家 十二 會議
12th Meeting of APEC Expert Group on Energy Data & Analysis

The 12th Meeting of the APEC Expert Group on Energy Data & Analysis was successfully held on 26 to 27 March 2001 in Hong Kong. The Electrical & Mechanical Services Department represented Hong Kong, China to host the meeting.

Delegates from most APEC member economies and also international organisations including the Asia Pacific Energy Research Centre, the ASEAN Centre of Energy, and the International Energy Agency had participated in the meeting.

東南九龍發展計劃採用區域性冷卻系統

District Cooling Scheme in South East Kowloon Development

2001 5 31日，我們舉辦了一個座談會，向多個 決策局及部門的70多名代 介紹「東南九展計劃的區域性冷卻系統」。在 座談會上，除 告有關區域性冷卻系統在環境及經 方面的優點外，討 了有關的制度及規管事宜。

On 31 May 2001, we held a forum to introduce "District Cooling System in South East Kowloon Development" to over 70 representatives from government bureaux and departments. In the forum, the environmental and economic benefits of district cooling were presented, and the institutional and regulatory issues were discussed.

再生能 技術研討會

Seminar on Renewable Energy Technologies

我們在2001 7 17日 行了一個 「再生能源在港—從國 的政策和 例中 習」的研討會，討 與本港使用 與再生能源技 有關的法律、制度及推 事宜。包括政府決策局及部門、公用事業公司、環保團體、專業團體、大 及 究院，以及對 興趣的 業機 的代 。在研討會中取得的 料，有助 本港使用 與再生能源的策略。

再生 能 源 技 研討 會
Seminar on Renewable Energy Technologies

We held a seminar entitled "Renewable Energy for Hong Kong: Learning from International Policy and Practice" on 17 July 2001 to discuss legal, institutional and promotional issues relevant to Hong Kong on the application of new and renewable energy technologies. Participants included representatives from government bureaux and departments, utilities companies, green groups, professional bodies, universities and research institutes; and interested commercial organisations. Information obtained from the seminar would help to form a strategy for new and renewable energy in Hong Kong.

新世紀能 及環境研討會

Symposium on Energy and Environment in the New Era

2001 6 29日，本 長、助理 長／能源效益（利振球先生）及總工程師／能源效益A（林錦權先生）在 「 紀能源及環境」的研討會上 了演說及技 文件。 研討會由能源會（ 港分會）及 他專業機 辦， 有 業界逾300名代 。

Our Director, our Assistant Director/Energy Efficiency (Mr. C.K. Lee), and our Chief Engineer/Energy Efficiency A (Mr. K. K. Lam) delivered speeches and presented technical papers at a symposium held on 29 June 2001. The theme of the symposium was "Energy and Environment in the New Era". The symposium was organised by the Institute of Energy (Hong Kong Branch) and other professional institutions. Over 300 representatives from various business sectors attended the symposium.

紀 能 源 及 環 境 研討 會
Symposium on Energy and Environment in the New Era