



安全、節能在香港

**A Safer, More Energy Efficient Hong Kong**



機電工程署規管服務 2006年業務概覽  
Electrical and Mechanical Services Department  
Regulatory Services – Achievements Overview 2006

機電工程署  
**EMSD**





## 抱負 **Vision**

我們的抱負，是要成為促使香港在機電安全及善用能源方面，  
都達到世界首要都會水平的政府機構。

Our vision is to be the government agency that makes Hong Kong  
a top-ranking city in E&M safety and in the utilisation of energy.

## 使命 **Mission**

我們的使命，是確保機電及能源科技均以安全、可靠、經濟及環保的方式得以善用，  
並藉此促進社會的安全及提升生活質素。

Our mission is to enhance the safety and the quality of life of our community  
by ensuring that E&M and energy technologies are harnessed in a safe, reliable,  
economical and environment-friendly manner.

## 信念 **Values**

- 專業才能 Expertise
- 誠信 Integrity
- 可靠 Reliability
- 承擔 Commitment



## 目錄 **Contents**

重要活動  
Achievements and Initiatives **02**

高層管理人員  
Senior Management **04**

署長的話  
Message from the Director **06**

業務回顧  
Operations Review **12**

保障公眾安全  
Protecting Public Safety **18**

推廣節約能源  
Promoting Energy Conservation **30**

提高公眾安全及節能意識  
Raising Public Awareness **38**



# 重要活動 Achievements and Initiatives

## 確保公眾安全

2006年是充滿挑戰的一年，多項事故突顯我們在保障公眾安全上擔當規管角色的重要性。

昂坪纜車試行階段出現的故障，不但測試了應變措施的效果，更提高我們對纜車的可靠性測試的要求。

至於添馬艦舉行的環球嘉年華會，我們必須在非常緊迫的時間內審批26款機動遊戲機的申請，同時確保它們符合安全標準。

## 加強與業界的溝通

有見的士及小巴業界對專用石油氣加氣站的運作及價格調整機制十分關注，政府即時進行諮詢，最後議定新的調整機制，把調整頻率由每六個月一次改為每月一次，讓專用氣站的石油氣零售價能夠適時反映國際石油氣價格的走勢。

事件更讓我們成功為專用氣站營辦商和的士及公共小巴業界的組織和商會建立有效的溝通渠道。每三個月定期舉行的會議有助雙方就安全實務等議題作出討論及交流意見。

## 優質服務獲嘉許

我們員工在2006年連奪兩個嘉許公務員優質服務的獎項。

我們一名督察獲頒發公務員事務局局長嘉許狀，表揚他出色的工作表現。他主動的工作態度，成功游說業主為其大廈固定電力裝置進行定期檢查和測試。他鍥而不捨的精神獲得不少居民致謝。

另一名員工則獲頒發申訴專員嘉許獎，表揚他在葵芳閣停電事故上盡心盡力的服務。他不辭勞苦為受影響居民和店舖東主提供緊急支援，並就恢復供電事宜上與多個有關機構協調磋商。



## Ensuring Public Safety

The year 2006 was filled with challenges that underline the importance of our regulatory role in protecting public safety.

Service interruptions during trial runs of the Ngong Ping Skyrail called for more stringent reliability checks and tested the effectiveness of contingency measures.

The tight schedule of the World Carnival at Tamar required us to work doubly hard to approve 26 amusement rides – without compromising safety standards.

## Enhanced Communication with the Trades

In response to growing concern in the taxi and light bus trades over the operation and price adjustment mechanism of dedicated auto-LPG stations, the government was quick to begin consultations. A new pricing mechanism was subsequently developed – with increased frequency in pricing adjustment allowing the stations to more closely follow LPG international prices.

As a result of working through this issue, we were also able to successfully establish an effective communication channel between the operators of dedicated stations and taxi and public light bus trade associations and confederations. Quarterly meetings are now arranged to allow them to exchange views and discuss issues such as safety practices.

## Quality Service Recognised

Our colleagues took two prestigious awards for civil servants in 2006.

An inspector was awarded a Commendation from the Secretary for the Civil Service for his praise-worthy performance. Taking a proactive approach, he has successfully persuaded building owners to carry out regular inspection and testing of the fixed electrical installations in their buildings. His patience and relentless service won him letters of appreciation from residents.

Another colleague was given an Ombudsman's Award for going beyond the call of duty during the power interruption incident at Kwai Fong Terrace. He provided immediate support to the affected residents and shop owners, and liaised between all the various parties involved in the resumption of the electricity supply.



### 冷卻塔計劃進展良好

冷卻塔計劃是推廣節能的水冷式空調系統的主要措施，近年得到發展商、業主及物業管理公司鼎力支持。2006年，我們收到56宗採用較節能的冷卻塔空調系統的申請，累積申請數目增至257宗。

其中29個系統於2006年正式啟用，數目之高為歷年之冠。已啟用裝置每年可節省5,800萬度電，並可減少排放40,000公噸二氧化碳。當新訂定有關冷卻塔的工作守則於2007年生效時，我們相信該計劃會有長足的進展。

### 獎勵計劃推動節能意識

第一屆香港能源效益獎圓滿結束。得獎機構平均節省了能源8.1%，大獎得主更節省了25%的能源。我們舉辦經驗分享座談會，以及將得獎機構的節能心得及方法以光碟形式分發予有興趣人士及機構，借鏡有關經驗。

來年我們把比賽推廣至香港房屋委員會、香港房屋協會、領匯管理有限公司及市區重建局所發展或管理的物業，相當於覆蓋全港人口的45%。比賽鼓勵勇於創新的良好節能方法，嘉許成功個案，相信有助進一步在社區推動節能意識。

### 學校積極支持

我們在總部大樓開設的教育徑，深獲學校歡迎，至今已有約2,000名學生到訪，觀摩本港的節能技術及最佳應用實例。

逾250間學校參與支持我們的「節約能源約章2006 — 適當室內溫度」，調校空調室溫至攝氏25.5度，減低能源消耗。

我們的學校外展活動繼續得到各大、中、小學和幼稚園的支持。2006年，我們走訪逾500間學校，將機電安全及節能的訊息帶給80,000名學生。此外，我們又為中、小學及幼稚園學生設計教材套。

上述活動相信有助本港年青一代在日常生活中養成良好的機電安全及節能習慣。



### Rewarding Year for Cooling Tower Scheme

Our Cooling Tower Scheme to promote more energy efficient air conditioning has become increasingly popular among developers, owners and management companies. We received 56 applications for the adoption of the more energy efficient cooling tower-type air-conditioning system in 2006, bringing the total number of applications to 257.

Twenty-nine systems were commissioned in 2006, our highest annual total so far, taking the annual energy saving from commissioned installations to 58 million kWh and cutting carbon emissions by 40,000 tonnes. We expect the scheme to gain further momentum with the new code of practice for cooling towers coming into effect in 2007.

### Award Scheme Expanded to Further Energy-saving Drive

The first Hong Kong Energy Efficiency Awards ended to applause. Winners achieved an average 8.1 per cent saving year-on-year, with the top saver reaping a 25 per cent saving. Experience-sharing sessions were organised and the energy-saving methodologies of award winners were put onto CD-ROM for free distribution to interested parties.

The award scheme has now been expanded to include buildings under the Housing Authority, Hong Kong Housing Society, The Link Management Limited and the Urban Renewal Authority, representing 45 per cent of the Hong Kong population. Honouring good practices, successes and innovations in energy conservation, the 2007 competition is expected to further community awareness of energy saving.

### Garnering Support from Schools

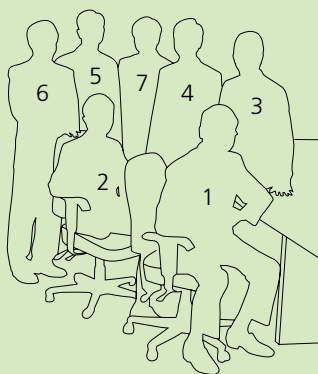
The Education Path at our headquarters has proved a popular choice for school outings. About 2,000 students have now walked the Path to appreciate best practices in energy conservation in Hong Kong.

More than 250 schools have pledged their support to our Energy Conservation Charter that encourages the 25.5°C setting for air-conditioned room temperature.

Our school outreach programmes are also increasingly popular. In 2006, we visited more than 500 schools, delivering safety and energy conservation messages to some 80,000 students. Furthermore, we have developed education kits for students from pre-school to secondary level.

These initiatives will help to shape good habits in the daily life of Hong Kong's young people.

# 高層管理人員 Senior Management



署長  
Director

- [1] 黎仕海太平紳士  
**Lai Sze-hoi, Roger, JP**  
機電工程署署長  
(至2006年12月15日)  
Director of Electrical and  
Mechanical Services  
(up to 15.12.2006)

副署長  
Deputy Director

- [2] 何光偉太平紳士  
**Ho Kwong-wai, JP**  
副署長／規管服務  
(至2006年12月15日)  
Deputy Director / Regulatory Services  
(up to 15.12.2006)

助理署長  
Assistant Director

- [3] 陳鴻祥太平紳士  
**Chan Hung-cheung, Stephen, JP**  
助理署長／能源效益  
(至2006年12月15日)  
Assistant Director / Energy Efficiency  
(up to 15.12.2006)

- [4] 張丙權  
**Cheung Ping-kuen, Michael**  
助理署長／能源效益  
(2006年12月16日開始)  
Assistant Director / Energy Efficiency  
(from 16.12.2006)

助理署長  
Assistant Director

- [5] 陳帆  
**Chan Fan, Frank**  
助理署長／氣體及一般法例  
Assistant Director /  
Gas & General Legislation

秘書  
Secretary

- [6] 莊國輝  
**Chong Kwok-fai, Bernard**  
主任秘書  
Departmental Secretary

會計師  
Accountant

- [7] 吳鴻成  
**Ng Hung-shing, Robin**  
部門會計師  
Departmental Accountant









## 署長的話 Message from the Director

### 充滿挑戰的一年

2005年的盛事似乎還記憶猶新，香港迪士尼樂園開幕以及香港主辦世界貿易組織「第六次部長級會議」等，均備受矚目。

2006年，同樣大事連連。事實上，這年發生了一些始料不及的事情，公眾深表關注。這些意外事故帶來連串的挑戰，而面對這些挑戰，我們必須反應敏捷、靈活變通、全力以赴，並且配合專業服務的精神。雖然過程艱巨，但我們的同事都能夠排除萬難把工作做好，這是值得欣慰的。同事們更從過程中汲取經驗，處事更趨成熟老練。我在此向規管服務各員工致以深切的謝意。

### 加強與業界溝通

的士及小巴業界對專用石油氣加氣站的運作及價格調整機制十分關注。事實上政府亦早於2005年4月開始與業界進行諮詢工作。但是國際石油氣價格急速上漲，令原先的價格調整機制未能及時反映國際石油氣價格，因而

影響專用氣站的運作，市民對事件非常關注，而我們亦出席了立法會交通事務委員會多次會議。


我們最後議定新的調整機制，把專用氣站的石油氣上限價格調整頻率由每六個月一次改為每月一次，讓專用氣站的石油氣零售價能夠適時反映國際石油氣價格的走勢，新價格調整機制已於2006年3月生效。

新機制除了得到運輸業界的支持外，也帶來另一好處，就是促成專用氣站營辦商和的士及公共小巴業界的組織、商會和壓力團體建立有效的溝通渠道。在新機制下每三個月定期舉行客戶聯絡會議、加強雙方的溝通和了解。

### 保障香港社會安全

接踵而來的另一挑戰是4月在牛頭角一幢住宅大廈內發生的氣體爆炸事件。

機電工程署派遣一組精英隊伍，協助政府的跨部門小組調查這宗意外。同時，我們採取緊急措施，確保意外現



“2006年帶來連串的挑戰，而面對這些挑戰，我們必須反應敏捷、靈活變通、全力以赴，並且配合專業服務的精神。  
The year 2006 presented challenges that called for promptness in response, resourcefulness in thinking, dedication in attitude and professionalism in service.”

## A YEAR OF CHALLENGES

As you may recall, 2005 was a year of high-profile events, with the opening of Hong Kong Disneyland and the Sixth Ministerial Conference of the World Trade Organisation, among others.

The year 2006 was no less eventful. Indeed, it brought several unforeseen incidents which attracted much public attention. They presented a new set of challenges: challenges that called for dedication in attitude, promptness in response, resourcefulness in thinking and professionalism in service. These were major and taxing tests. While the process of dealing with these events was often painstaking, it is gratifying to note that our staff members rose to the challenge and became more experienced and mature along the way. My wholehearted thanks go to each and every one of our colleagues at the Regulatory Services of EMSD.

## STRENGTHENING TRADE COMMUNICATION

The taxi and light bus trades expressed growing concern over the operation and price adjustment mechanism of dedicated LPG stations. In fact, the government had begun consultations with the trades as early as April 2005. Nonetheless, rapid surges in LPG international prices had rendered the pricing adjustment mechanism less effective in reflecting LPG international prices, which in turn negatively affected the operation of dedicated LPG stations. The matter received much public attention, and we attended several LegCo Transport Panel sessions.

A new pricing adjustment mechanism was then hammered out, coming into effect in March 2006. In essence, the ceiling prices of dedicated stations are now adjusted once a month instead of every six months. The increased frequency in pricing adjustment allows dedicated stations to more closely follow the movement of LPG international prices.

While the new mechanism was proved to be acceptable to the transport trade, this issue also had another positive outcome. It allowed us to successfully establish an effective communication channel between the operators of dedicated stations and taxi and public light bus trade associations, confederations and pressure groups. Quarterly customer liaison meetings are now arranged to foster communication and understanding between the two sides.

## SAFEGUARDING HONG KONG

Then came another challenge: a gas explosion at a residential building in Ngau Tau Kok in April.

EMSD assigned a specialist team to the inter-departmental group investigating this tragic incident. At the same time, emergency measures were taken to ensure gas safety at the scene. We then coordinated with various parties and government departments to restore utility services to the affected residents.

We quickly worked with the gas supplier on a number of short-term and long-term remedial measures. Firstly,



受氣體爆炸影響的大廈住客讚揚我們專業及全情投入的服務精神。  
Residents of the building affected by the gas explosion are thankful for our professional, all-out working attitude.



場安全，繼而聯繫相關機構及政府部門，為受影響居民盡快恢復水、電及煤氣供應，並盡快恢復升降機運作。

我們迅速與氣體供應商擬定一連串的即時及長遠的補救措施。首先，我們全程監督氣體供應商對同類型地下喉管展開全面探漏巡查，我們在三個星期內日以繼夜地進行這項監察工作。我們更成功游說氣體供應商為地下喉管加強定期探漏巡查，及承諾於兩年內更換共長150公里的同類型地下喉管。我們亦同時加強對氣體喉管巡查的監察工作。

我們專業及全情投入的服務精神令有關措施得以在短時間落實和推行，並迅速恢復公眾對氣體安全的信心。

### 纜車乘客的安全

昂坪纜車在試行階段出現故障，未如理想。由於出現一些技術問題及受惡劣天氣影響，使這條全長5.7公里的纜車系統出現幾次服務中斷情況，事件備受關注。

確保乘客安全和纜車系統的可靠運作一直是機電工程署和纜車公司的首要議題。我們一直促請纜車公司及製造商進行改善措施，並與其他政府部門加強救援程序等應變措施。

直至我們滿意纜車公司其後進行的可靠測試，及在第二輪試行得到理想效果後，才讓纜車服務正式開放予公眾人士。我們亦派遣駐場隊伍，在纜車系統啟用首三個月駐守現場，使能即時提供技術支援和進行事故調查，並就系統改善及維修事項提供技術意見。

### 得到認同和嘉許

規管服務的工作很多時需要長時間執勤，要有鍥而不舍的態度。我們同事這些努力並沒有白費，他們深得政府和公眾人士的認同和賞識。

電力法例部一名督察獲頒發公務員事務局局長嘉許狀，表揚他優秀的工作表現。他主動的工作態度，成功游說業主為其大廈固定電力裝置進行定期



我們的督察仔細檢查纜車系統，確保乘客安全。  
Our inspector checks the cable car system to ensure passenger safety.



我們監督氣體供應公司對地下喉管展開全面探漏巡查。  
We oversee the gas supply company's comprehensive leakage survey on underground pipelines.



we oversaw a comprehensive leakage survey undertaken by the gas supplier, which required around-the-clock audit checks on underground pipelines over a three-week period. More importantly, we convinced the gas supplier to enhance its routine leakage surveys and commit to replacing, within two years, 150 km of underground pipes of the same type as that involved in the incident. In this connection, we have also stepped up audit inspections of gas supply lines.

The professional, all-out working attitude of our team made it possible for all these short- and long-term measures to be agreed upon and put into action within a short time. Public confidence in gas safety was restored quickly.

## RIDING SAFE IN THE SKY

The trial runs of the Ngong Ping Skyrail in June did not go as smoothly as expected. The 5.7-km cableway experienced a couple of service interruptions due to technical problems and adverse weather conditions, causing much public concern.

The safety of passengers and the reliability of the cable car system are our priority concerns. We urged the cableway manufacturer and operator to undertake necessary improvement measures. In conjunction with other government departments, we also strengthened the contingency measures, in particular, the rescue procedure.

After reliability tests were completed to our satisfaction, the operator carried out a second round of trial runs and

successfully concluded prior to the official opening of the cableway. Even so, our inspection team remained stationed on site for three months after the opening, immediately investigating any incident affecting the operation, and providing technical advice on system enhancement.

## AWARDS AND ACKNOWLEDGEMENTS

The work of Regulatory Services has always called for perseverance, unfailing service and long hours of toil. It is therefore gratifying to note that our efforts have paid off and been recognised by the government and the community.

An inspector from our Electricity Legislation Division was awarded a Commendation from the Secretary for the Civil Service for his praise-worthy performance. Taking a proactive approach, he successfully persuaded many building owners to carry out regular inspection and testing of the fixed electrical installations in their buildings. His patience and relentless service not only won him letters of appreciation from residents, but also contributed to a safer community.

Another colleague received an Ombudsman's Award for walking the extra mile during the power interruption incident at Kwai Fong Terrace. Two successive blackouts within a week at the estate together lasted for more than 56 hours and affected some 600 households. Our colleague was a member of the on-site team, helping investigate the cause of power interruptions. He went beyond the

獲獎的同事恰恰代表我們全心全意服務文化的典型。  
Our award-winning colleagues are representative of staff members embracing the service culture at EMSD.



檢查和測試。他鍥而不捨的服務精神獲得不少居民致謝，並為確保更安全社區作出了貢獻。

另一名同事則獲頒發申訴專員嘉許獎，表揚他在葵芳閣停電事故上盡心盡力的服務。該屋苑在一周內接連發生兩次停電，時間合共超過56小時，大約600個單位受到影響。該名同事是在現場協助調查事故隊伍的一名成員，他不辭勞苦，竭盡所能為受影響的居民和店舖東主提供緊急支援，並就恢復供電事宜上與多個有關機構協調磋商。葵青區議會更寄予感謝信，讚揚我們員工的專業服務精神。

對兩位獲獎的同事，我致以衷心的祝賀。他倆正正是我們每位同事全心全意服務文化的典型。我認為所有員工均可分享這份榮耀。

### 致謝

2006年對我來說別具意義，因為這是我就任機電工程署署長的最後一年。對於多年來能夠在機電工程署服務，

我深感榮幸。我在2006年12月正式退休，並將署長的重任交予我的繼任人——何光偉先生。

我想藉此向在規管服務工作的每一位員工致意。我們之間建立了互信，令我們一直合作愉快。機電工程署今天的成就，是絕對不能缺少你們的努力和支持的。我希望你們繼續支持何先生。

我亦想向其它政府部門的同事致謝。多年來我們建立深厚的信任，能夠互相體諒，這個互信的夥伴關係，讓我們一直合作無間。

最後我想向本港市民致謝，感激他們多年來對部門的信任。

黎仕海

機電工程署署長  
黎仕海

我們感謝合作伙伴多年來對我們的支持。  
We are grateful for the continued support of our partners and associates through the years.



call of duty to assume a coordinating role in providing immediate support to the affected residents and shop owners, earning him a letter of appreciation from the Kwai Tsing District Council.

While I congratulate our award-winning colleagues most sincerely, I am mindful that they are representative of staff members embracing the service culture at EMSD. I thus feel obliged to extend these honours to all our staff.

## VOTE OF THANKS

The year 2006 is of particular meaning to me, for it is my last serving year as Director of Electrical and Mechanical Services. It has always been an honour – and a pleasure – to serve at EMSD. As I proceed to retirement in December 2006, I now lay down my responsibilities and hand them over to my successor, Mr K W Ho.

I would like to take this opportunity to thank each and every one of my colleagues at Regulatory Services for the trust developed between us that has enabled us to work so

well together. As we cherish our work and achievements in this report, we honour your cooperation and backing, without which none of this could have been possible. I am hopeful you will extend your support to Mr Ho.

I would like to express my gratitude to our colleagues in the other government departments for all their support. Indeed, as partners, we have worked seamlessly and coherently, and that is only possible with strong mutual trust and understanding.

My thanks also go to the people of Hong Kong who have put their trust in the department over the years.

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



## 業務回顧 Operations Review

Keeping electrical and mechanical

確保持續發展作準備

電氣裝置安全  
安裝及運作正



2006年固然大事連連，挑戰重重；但我們不少有關能源效益和公眾安全的工作在這年步入收成期，成績有目共睹，值得我們感到驕傲。

我們以「更安全、更具能源效益的香港」作為這刊物的主題，道出我們這方面的成就，亦帶出我們未來工作重點。

### 更安全的香港

2006年發生了不少事故，充滿挑戰，我們必須全情投入，以敏捷、靈巧及專業的服務態度，來迎接挑戰。

這些事故的發生突顯了我們在保障公眾安全上擔當的重要規管角色。昂坪纜車試行階段出現的故障，不但測試了應變措施的效果，更提高了我們對纜車可靠性測試的要求。至於添馬艦舉行的環球嘉年華會，我們必須在非常緊迫的時間內審批26款機動遊戲機的申請，同時確保它們符合安全標準。至於在牛頭角發生的氣體爆炸事件，我們即時採取緊急措施，並協調相關機構，進行24小時不停的監察工作，確保有關的跟進及補救措施安排妥善。

上述事故固然備受公眾關注，但我們其他工作的成就亦不容忽視。

### 令人鼓舞的數字

氣體喉管第三者損毀事故的數目持續下跌。2006年初的第三者損毀事故只有14宗，較2005年下降26%。

電纜損毀事故同樣減少。自2000年公佈及其後修訂了《有關在供電電纜附近工作的實務守則》後，電纜遭第三者損毀的事故持續下降。

我們加強了對兩間電力公司的巡查及有關的協調工作，有助提高供電的穩定性。停電事故數目由2005年的1,957宗下降至2006年的1,717宗。

有關電氣產品的事故由2005年的76宗下降至2006年的68宗，其中有關電風扇的事故更由18宗大幅下降5成至9宗。

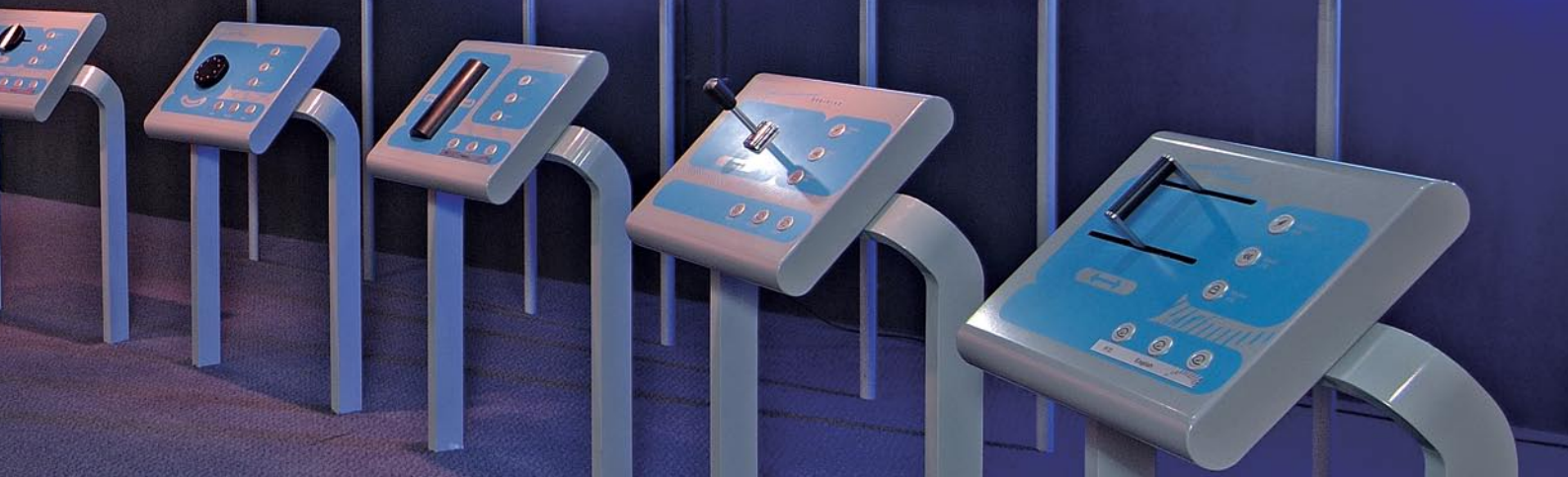
除了上列令人鼓舞的數字外，我們又不斷推出新項目，進一步提高本港的機電安全水平。

### 再獻新猷

我們就太空囊式燃氣烤肉爐的安裝及維修擬備了安全指引，並加強巡查有關食肆。

早前我們進行巡查時發現市面有一些不安全的電暖袋，我們立即透過與國家質量監督檢驗檢

“我們不少有關能源效益和公眾安全的工作在這年步入收成期，成績有目共睹。  
It was a time of accomplishment, when our energy efficiency and public safety initiatives began to bear fruit.”



While 2006 was a year of challenges, it was also a time of accomplishment, when our energy efficiency and public safety initiatives began to bear fruit.

The theme of this report, “A Safer, More Energy Efficient Hong Kong”, speaks well of our feat and our continuing focus.

## A SAFER HONG KONG

A number of incidents occurred during the year and demanded our prompt, professional and timely effort – in essence, our highest quality of service.

These incidents underline the importance of our regulatory role in protecting public safety. Hiccups in the trial runs of the Ngong Ping Skyrail called for more stringent reliability checks and tested the effectiveness of contingency measures. The tight schedule of the World Carnival at Tamar required us to work doubly hard to scrutinise 26 travelling amusement rides – without compromising safety standards. The gas explosion in Ngau Tau Kok called for a rapid emergency response, coordination of around-the-clock monitoring and the implementation of crucial follow-up measures.

While these incidents attracted much public attention, other aspects of our work should not go unnoticed.

## Encouraging Numbers

Incidents of third-party damage to gas pipes continued to drop. There were only 14 third-party damage incidents in 2006, a 26 per cent reduction over 2005.

Damage to electricity supply lines also decreased. Thanks to the promulgation in 2000 and subsequent revision of the relevant code of practice, third-party damage incidents have been declining.

Stepping up our audit inspections and coordination with the power companies has helped enhance the reliability of power supply. Cases of power interruption dropped from 1,957 in 2005 to 1,717 in 2006.

As to electrical products, there were 68 reported incidents in 2006, down from 76 in the previous year. It is noteworthy that the number of incidents involving electric fans – the worst offender in 2005 – dropped by 50 per cent to nine year-on-year.

While these numbers are gratifying, we continue to develop new initiatives for E&M safety.

## New Initiatives

We published safety guidelines on the installation and maintenance of enclosed-type gas-fired meat roasters, and also followed up with on-site inspections.





疫總局（國家質檢總局）的《合作安排》，成功阻截該類產品流入本港。

雖然有關電氣產品的事故近年逐步下降，但我們並未因此感到自滿。我們建議本港業界採納國際電工委員會發佈的最新國際安全標準，該新安全標準比舊標準更為嚴格，可大大減低產品過熱發生火警的情況。經過多月來與業界磋商，並取得他們廣泛的支持。現在所有進口本港的電風扇必須符合新安全標準，其餘66類電氣產品亦將於2008年採納新安全標準。

為了配合固定電力裝置電線顏色代碼的轉變，我們於2006年進行的預備工作可說是如火如荼。我們主力於宣傳及培訓兩方面，旨在確保所有業界人士及相關機構知悉電線顏色代碼的轉變，而電業工程人員則必須完成適當的新電線顏色代碼訓練課程。

為了提升車輛維修業的服務水平以及改善道路安全，我們為車輛維修技工推出一項自願性註冊計劃。計劃於2007年1月推出，機電工程署成立的車輛維修註冊組負責處理有關的申請及查詢。

## 更具能源效益的香港

能源效益標籤計劃（標籤計劃）是我們的重點節能項目之一，估計該計劃每年已能為本港節省2億度電。標籤計劃於2006年再度擴展，使計劃涵蓋的產品增至18類，包括家用器具、辦公室設備及汽車。計劃由自願性質過渡至強制性質的工作，進展良好，並已成立兩個專責小組，以制定有關計劃的推行細節。

冷卻塔計劃目的是推廣較節能的空調系統，計劃近年得到發展商、業主及物業管理公司鼎力支持，有關申請數目不斷增加。29個冷卻塔系統於2006年正式啟用，數目之高為歷年之冠。已啟用裝置每年可節省5,800萬度電，並可減少排放40,000公噸二氧化碳。當新訂定有關冷卻塔的工作守則於2007年生效時，我們相信該計劃將會有長足的進展。

節能技術不一定費用高昂。我們去年推介的更新照明系統的方法，既簡單又有效，而且所費無幾。

政府牽頭採用可再生能源技術又一例證——我們最近在九龍灣消防局安裝了一套先進的太陽能熱水系統。我們正收集有關的系統操作數

何光偉先生頒發註冊香港建築物能源效益證書予五間機構代表。  
Mr. K. W. Ho present Hong Kong Energy Efficiency Registration Certificates to representatives of five organisations.



建築物生命週期能源分析的顧問研究在環保建築大獎2006比賽中獲得優異獎。  
The Consultancy Study on Life Cycle Energy Analysis for Building Construction won a merit award at Green Building Awards 2006.



Other inspection work detected unsafe electrothermal bags in local shops, while our close collaboration with the Mainland's General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ) checked further sales to Hong Kong.

Despite our encouraging record in decreasing incidents involving household electrical appliances, we want to do more. After liaising with the trade for months, we have garnered broad support for the new, more stringent standards advocated by the International Electrotechnical Commission to reduce the risk of fire due to overheating. All imported electric fans are now required to comply with the new standards. A further 66 types of electrical products will follow suit in 2008.

Preparations for the change of the cable colour code (CCC) for fixed electrical installations in Hong Kong were in full swing in 2006. Focusing on publicity and training, we aim to ensure that all relevant parties and stakeholders are aware of the CCC change, and that electrical workers are properly trained on the new CCC.

The voluntary registration scheme for vehicle mechanics is a major initiative that seeks to raise the standard of the trade and improve road safety in the long run. With the scheme coming into effect from January 2007, the registration unit at EMSD would be busy with applications and enquiries.

## A MORE ENERGY EFFICIENT HONG KONG

The Energy Efficiency Labelling Scheme, a prime driver of our energy efficiency initiatives, was again extended in 2006 to cover a total of 18 household and office appliances and vehicles. It is estimated that the scheme has contributed an annual saving of 200 GWh for Hong Kong. Its proposed transition from a voluntary scheme to a mandatory one is progressing well, with two task forces set up to work out implementation details.

Our Cooling Tower Scheme to promote more energy efficient air conditioning has become increasingly popular among developers, owners and management companies. Twenty-nine systems were commissioned in 2006, our highest annual total so far, taking the annual energy saving from commissioned installations to 58 million kWh and cutting carbon dioxide emissions by 40,000 tonnes. We expect the scheme to gain further momentum with the new code of practice for cooling towers coming into effect in 2007.

Energy-saving technologies need not cost a lot. For example, some lighting retrofitting measures require little investment and yet are simple and effective.

With the recent installation of a solar thermal heating system at the Kowloon Bay Fire Station, the government has again led the way in adopting renewable energy technologies. Year-round data is being collected to evaluate the performance of the heating system for the reference of other government projects.



為配合特區政府的「藍天行動」，我們推出「節約能源約章」，至今已有超過350間機構和學校參與約章。  
We support the government's Action Blue Sky initiative through our Energy Conservation Charter, which has now been signed by more than 350 organisations.



據，為期12個月，用作分析這類太陽能熱水系統的表現，作為其他政府項目參考之用。

2006年，我們在推廣風力發電的範疇上取得良好進展。經過蒐集全年的風力數據，我們正就香港東面地區的風力發電潛力進行評估。此外，香港電燈有限公司籌建的全港首個具商業規模的風力發電站已正式落成啟用；而兩間電力公司現正研究興建離岸風場的可行性。

我們與國家質檢總局簽訂的《合作安排》下成立的第四個工作小組，專責推廣能源效益。我們期望新工作小組能夠促進兩地在可持續發展上的合作，一同向目標邁步。

## 公眾教育

朝著更安全、更具能源效益的香港這個目標，公眾教育的重要性並不亞於我們的規管工作，以下為我們2006年的一些重點工作。

第一屆香港能源效益獎圓滿結束。得獎機構平均節省了能源8.1%，大獎得主更節省了25%的能源。來年的節能比賽將擴展至由香港房屋委員會、香港房屋協會、領匯管理有限公司和市區重建局所發展或管理的物業，範圍將會覆蓋全港45%的人口。

「機電安全香港通」運動依然深受歡迎。能夠連續六年得到業界的支持，我們感到十分欣慰。

為配合特區政府推出的「藍天行動」，我們推出「節約能源約章2006 — 適當室內溫度」，鼓勵各界人士在夏季調高空調室溫至攝氏25.5度，至今已有超過350間機構和學校參與節約能源約章。

年青人一直是我們的主要對象。除了深受歡迎的學校外展活動外，我們又為幼稚園以至中、小學學生設計教材套。相信這些教材及活動有助他們在日常生活中養成良好的機電安全及節能習慣。

最後，本人謹向所有員工衷心致謝，他們全心全意，辛勤工作，值得表揚。我衷心期望，2007年亦將會是成果豐碩的一年。

何光偉

副署長／規管服務  
何光偉

第一屆香港能源效益獎圓滿結束，得獎機構平均節省了能源8.1%。

The first Hong Kong Energy Efficiency Awards ends to applause – with winners achieving an average 8.1 per cent saving year-on-year.



Our exploration of the use of wind power also progressed well in 2006. After collecting year-round, wind resource data, we are assessing the wind energy potential in the eastern part of the territory. The first commercial-scale wind power station has been put into service by Hongkong Electric and both power companies are now studying the feasibility of constructing offshore wind farm.

We are also hopeful that a new joint working group set up with the Mainland's AQSIQ to promote energy efficiency will give impetus to our pursuit of sustainable development across the border.

## PUBLIC EDUCATION

Aiming for a safer, more energy efficient Hong Kong, our role in public education is no less important than our core regulatory functions. Here is a snapshot of our work in 2006.

The first Hong Kong Energy Efficiency Awards ended to applause. Winners achieved an average 8.1 per cent saving year-on-year, with the top saver reaping a 25 per cent saving. The 2007 Awards have been expanded to include buildings under the Housing Authority, Hong Kong Housing Society, The Link Management Limited and the Urban Renewal Authority, representing 45 per cent of the Hong Kong population.

The E&M Safety Campaign remains popular. We are delighted with continued support from the trades over the past six years.

In support of the government's Action Blue Sky, we initiated the Energy Conservation Charter to encourage the 25.5°C setting for air-conditioned room temperature in summer months. More than 350 organisations and schools have pledged their support.

The young remain our primary target. Apart from our popular school outreach programme, we have developed education kits for students from pre-school to secondary level. I trust these will help shape good habits in their daily life.

Finally, I would like to thank all our colleagues for their devotion and good work. I look forward to another year of achievement in 2007.

Ho Kwong-wai  
Deputy Director / Regulatory Services



# 保障公眾安全 Protecting Public Safety



“ 我們專責規管的工作，執行有關電氣、機械及氣體安全的法例，確保市民免受上列事故的傷害。

**We – as a regulator – are entrusted with keeping the public safe from electrical, mechanical and gas incidents. We administer and enforce safety legislation in this regard.** ”

“

機電工程署在保障公眾安全方面扮演甚麼角色？

**What is the role of EMSD in safeguarding the Hong Kong public?** ”

”





## 氣體安全

### 即時跟進及處理氣體爆炸意外

2006年4月，牛頭角佐敦谷北道一條地下喉管發生煤氣洩漏，引致附近一幢住宅大廈發生爆炸，特區政府即時成立由香港警察、消防處、政府化驗所及機電工程署組成的跨部門小組，就該宗致命事故展開深入調查。

在意外發生後，我們即時派遣一組由工程師及督察組成的隊伍趕到現場採取緊急措施，確保現場在氣體及電氣方面均情況安全，繼而為受影響居民盡快恢復水、電及煤氣供應，並盡快恢復升降機運作。

由於事態嚴重，我們要求煤氣公司加強為同類型地下喉管進行定期探漏巡

查，由原先一年進行三次探漏巡查增加至一年六次；我們亦同時加強對有關氣體喉管巡查的監察工作。

至於長線的安全措施，我們成功遊說煤氣公司承諾於兩年內更換共長150公里的同類型地下喉管，以保障公眾安全。

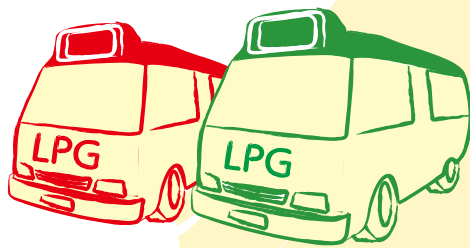
### 石油氣車輛計劃

石油氣車輛計劃自1999年推出以來，一直備受運輸業界的支持。

但在過去兩年國際石油氣價格大幅波動，部份的士及小巴業界人士及石油氣供應商對專用石油氣加氣站的運作及價格調整機制深表關注。政府早於2005年4月開始與業界進行諮詢工

作，其後成立一個跨部門工作小組，與業界商討有關專用氣站的石油氣上限價格調整機制。立法會交通事務委員會亦就此事舉行多次會議，並且會見的士及小巴業界商會，聽取他們的意見。

我們最後議定為專用氣站石油氣售價上限的新調整機制，並已於2006年3月生效。在新的調整機制下，專用氣站上限價格定價公式的兩個元素，即國際石油氣價格和營運價格都維持不變。唯一的改動是把專用氣站零售價格的調整頻率由每六個月一次改為每月一次。調整頻率的改動，讓專用氣站的石油氣零售價能夠適時反映國際石油氣價格的走勢。



### 石油氣車輛計劃

全港18,000輛的士已差不多全部採用石油氣，而石油氣小巴數目亦逐步上升。截至2006年12月止，本港有超過2,500輛石油氣小巴，石油氣加氣站則超過50個，並有近1,000名曾受訓的維修技工。

### LPG VEHICLE SCHEME

Virtually all 18,000 taxis in Hong Kong are running on LPG. The number of LPG-powered light buses is also on the rise. As of December 2006, there were more than 2,500 LPG light buses. There were more than 50 LPG filling stations in service and almost 1,000 trained mechanics.

## GAS SAFETY

### Rapid Response and Follow-up to Gas Explosion

In April 2006, a gas supply pipeline underneath Jordan Valley North Road in Ngau Tau Kok was found to have a leak, and a town gas explosion subsequently occurred inside a nearby residential building. The government immediately set up an inter-departmental group, comprising representatives of the Hong Kong Police Force, Fire Services Department, Government Laboratory and EMSD, to conduct a detailed investigation of the cause of the fatal explosion.

Immediately after the incident, specialist engineers and inspectors from EMSD took emergency measures to ensure gas and electrical safety at the scene, and worked around the clock to restore utility services to the residents of the building.

Considering the seriousness of the incident, EMSD asked HKCG to double the frequency of its routine leakage surveys of the same type of underground pipelines – from three times a year to six times a year. In this regard, we have also stepped up our monitoring work through scheduled monthly checks and surprise site audit inspections.

As a longer-term public safety measure, we successfully urged HKCG to commit replacing old underground pipes of the same type, some 150 km in total, within two years.

### LPG Vehicle Scheme

Since its announcement in 1999, the Liquefied Petroleum Gas (LPG) Vehicle Scheme has been well received by the transport trade.

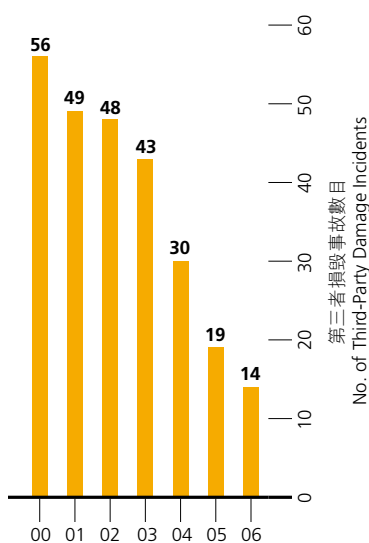


我們成功游說氣體供應公司承諾於兩年內更換共長150公里的地下喉管。  
We have secured the gas supply company's commitment to replace 150 km of old underground pipes within two years.



### 氣體喉管第三者損毀事故 持續減少

#### Gas Pipe Third-Party Damage Incidents in Decline



氣體喉管損毀事故的數目自1997年以來一直逐步減少，2006年的損毀事故只有14宗，較2005年下降26%。

The number of incidents of damage to gas pipes has declined each year since 1997. There were only 14 incidents in 2006, representing a 26 per cent reduction over 2005.

作為石油氣車輛計劃的行政及安全規管機構，機電工程署現在每月公布國際石油氣價格及專用氣站的石油氣上限價格，並經由媒體、專用加氣站及互聯網發放資訊，讓運輸業界能夠監察氣站的價格調整。此外，我們又成立電話熱線，處理業界的查詢及投訴。

我們現在每三個月定期舉行會議，讓專用氣站營辦商與運輸業界會面，交流意見。這些定期會議為雙方建立有效的溝通渠道，並且得到的士及公共小巴業界的組織、商會和壓力團體參與。除了石油氣價格外，議程還包括業界關注的事項，例如運作及討論安全實務等。

### 烤肉爐的安全指引

2005年發生了數宗涉及太空囊式燃氣烤肉爐的意外。我們為了加強安全，於2006年2月擬備了有關太空囊式燃氣烤肉爐的臨時安全指引。

該指引旨在為註冊氣體工程承辦商、以及食物工場和食肆的烤肉爐擁有人及操作者提供有關爐具安裝、操作及維修方面的安全標準及要求。

年內，我們巡查了全港所有設有該類烤肉爐的食肆，確保他們遵守有關的安全指引。

專用氣站石油氣上限價格的新調整機制得到運輸業界的支持。  
The new adjustment mechanism for LPG ceiling prices of dedicated LPG filling stations is well received by the transport trade.



Due to the frequent fluctuation of LPG international price over the past two years, some LPG suppliers and members of the taxi and light bus trades have expressed concern about the operation and price adjustment mechanism of dedicated LPG stations. The government thus began initial consultations with the trades in April 2005, eventually forming a joint departmental working group to discuss details of the LPG ceiling price adjustment mechanism with the transport trade. The Legislative Council Panel on Transport also held several meetings to discuss the issue in detail and met with taxi and light bus associations to listen to their views.

A new adjustment mechanism for the LPG ceiling price at dedicated stations was developed and became effective in March 2006. In essence, the two elements of the pricing formula (i.e. LPG international price and LPG operating price) remained unchanged, but the adjustment frequency was changed from half-yearly to monthly. The revised adjustment frequency allows the pricing of LPG to timely reflect the movement of LPG international prices.

As the safety regulator and administrator of the scheme, EMSD now announces LPG international prices and the LPG ceiling prices of the dedicated stations on a monthly basis. Through the press, dedicated LPG filling stations and

我們的督察巡查太空囊式燃氣烤肉爐，確保食肆遵守有關的安全指引。  
Our inspectors check an enclosed-type gas-fired meat roaster to ensure compliance with the safety guidelines.



the Internet, the transport trade can thus monitor the price adjustments at these stations. A hotline was also set up to handle complaints and answer enquiries from the trade.

Quarterly meetings of the operators of dedicated stations and the transport trade are now held to collect feedback and exchange views. This has proved a popular and effective communication channel, with taxi and public light bus trade associations, confederations and pressure groups taking part. Apart from LPG pricing, other issues, such as operation and safety, are also covered in the meeting.

### **Safety Guidelines on Meat Roasters**

A couple of gas incidents involving enclosed-type meat roasters occurred in 2005. In an effort to enhance safety, we prepared a set of Provisional Safety Guidelines on Enclosed-Type Gas-Fired Meat Roasters in February 2006.

Aimed at gas contractors and the owners/operators of the roasters in food workshops and restaurants, it outlines safety standards and requirements for the installation, operation and maintenance of gas-fired meat roasters.

During the year, we conducted inspections of all food premises with this type of meat roaster to ensure compliance with the safety guidelines.



我們確保新落成啓用的昂坪纜車完全符合有關纜車安全的規定。  
We ensure that the newly opened Ngong Ping Skyrail fully complies with the statutory safety requirements.



## 機械安全

### 昂坪纜車啟用

機電工程署負責規管本港的架空纜車系統，包括新落成啓用的昂坪纜車。我們須確保這條長5.7公里、連接東涌及昂坪的纜車系統完全符合《架空纜車（安全）條例》的安全規定。

在系統啟用前，我們審批纜車系統的設計，監督其建造及安裝工程，並檢測系統的運作情況。2006年6月，當我們在現場審視系統的試行情況，發現一些技術問題和惡劣天氣令系統服務中斷。我們促請纜車公司及製造商進行改善工程，並加強應變措施的實施，以避免服務中斷。

直至我們滿意纜車公司其後進行的一連串可靠測試，及在第二輪試行得到理想效果後，才讓纜車服務於2006年9月正式開放予公眾人士。我們派遣駐場隊伍，在系統啟用首三個月駐守現場，使能即時提供支援和進行事故調查，並就系統改善及維修保養事項提供技術意見。

確保乘客舒適安全是機電工程署和纜車公司的首要議題。我們已經檢討救援程序及應變措施，並且視察了救援演習。

我們會繼續監察纜車系統的運作和保養情況。

### 添馬艦嘉年華會

2006年12月開幕的香港環球嘉年華是不少本港市民及遊客在冬季長假期的重點玩樂節目之一。這個橫跨三個多月的嘉年華會能夠如期舉行，實有賴機電工程署能夠適時審批有關申請。

是次嘉年華會設有26款機動遊戲機，包括全世界最大的巡迴摩天輪，所有設施必須於三星期內完成安裝工程。

要在短時間內處理這些申請絕不容易。作為規管機構，我們需要調配人手及資源，才能及時審閱申請內的技術文件；更重要的是，我們必須在緊迫的時間內在現場進行安全檢查。

我們迅速但嚴謹的審批工作讓嘉年華會能夠如期開放，並確保了場內的遊戲設施符合安全標準。我們又派遣駐場隊伍，在嘉年華會營運首月期間駐場監察機動遊戲機的運作情況，並就安全事宜提供改善措施的意見。

嘉年華會至今並未發生任何因機械故障而造成的受傷事故，對此我們感到欣慰。

於添馬艦舉行的嘉年華會，場內26款機動遊戲機都經過機電工程署的安全審批。  
The carnival at the Tamar site features 26 amusement rides, all safety checked by EMSD.



## MECHANICAL SAFETY

### Opening of Ngong Ping Skyrail

As the regulator of cable car systems in Hong Kong, EMSD ensures that the Ngong Ping Skyrail – the 5.7-km cableway linking Tung Chung and Ngong Ping – fully complies with the statutory safety requirements under the Aerial Ropeways (Safety) Ordinance.

Prior to its opening, we approved the design of the cable car system, oversaw its construction and installation, and reviewed its operation. We were on hand during trial runs in June 2006, when minor technical problems and adverse weather interrupted services. To fine-tune the system, the cableway manufacturer and management company undertook improvement work and also strengthened contingency measures to better cope with service suspension.

After a series of reliability tests were completed to our satisfaction, the operator carried out a second round of trial runs and successfully concluded prior to the official opening of the cableway in September 2006. Our inspection team remained stationed on site for three months after the opening, investigating incidents and providing technical advice on system enhancements and maintenance procedures.

Passenger safety and comfort remain the top priority of EMSD and the cableway management company. We have reviewed its rescue and contingency plans and witnessed rescue and evacuation drills.

We will continue to keep a close eye on the operation and maintenance of the cable car system.

### Tamar Carnival

Spanning more than three months from December 2006, the Hong Kong World Carnival was a highlight of the holiday season, much anticipated by tourists and locals alike. But it would not have been able to go ahead on schedule without prompt and timely approval by EMSD.

The carnival's 26 travelling amusement rides, including the world's largest touring Ferris Wheel, had to be completely installed within three weeks.

Processing applications for amusement rides at short notice is a daunting task. As the regulator, we needed to mobilise and redeploy our resources in order to review technical submissions and, most importantly, perform safety inspections on site on a very tight schedule.

Our timely yet stringent approval of the rides enabled the carnival to open on time while ensuring safety standards were adhered to. We then deployed an on-site team for a month to monitor the carnival rides and advise on enhancement measures required for public safety.

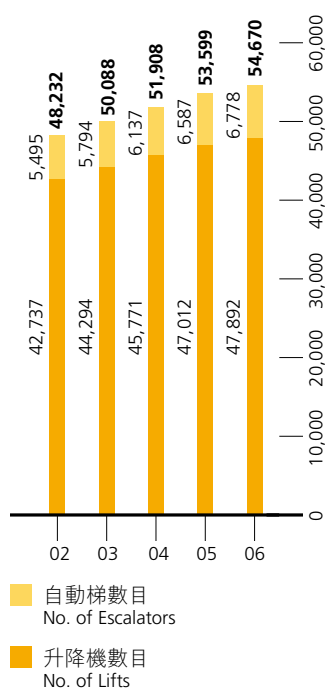
We are proud to report that there have been no incidents of mechanical failure causing personal injury on these rides to date.



我們推出一項自願註冊計劃，讓具備應有資歷及經驗的車輛維修技工進行註冊。  
A voluntary registration scheme has been developed to identify competent, qualified vehicle mechanics.



## 升降機及自動梯數目上升 Lifts and Escalators on the Rise



2006年，升降機及自動梯的數目繼續穩步上升。  
The number of both lifts and escalators continued to rise in 2006, calling for regular repair and maintenance by owners.

## 安全暢遊樂園

香港迪士尼樂園踏入第二個年頭，仍然是本港市民及外地遊客的遊樂熱點，我們則繼續默默緊守安全監察的角色。

當遊客在主題公園暢遊玩樂之際，我們的督察隊伍則確保所有遊戲設施均符合最高的安全標準。我們每年會對遊戲設施進行定期全面測試，為了減低對樂園運行的影響，去年的測試工作更在樂園晚上關閉後才進行，我們的員工亦毫不介意。至於樂園新添置的機動遊戲設施「馳車天地」，在建造及安裝前已詳加審閱其設計文件，並在落成後監察其操作測試。

年內，我們在香港迪士尼樂園進行了超過100次巡查及測試。樂園在未來數年會不斷增添新的遊戲設施，我們會緊守崗位，專責安全事宜。

## 加強車輛安全

2006年標誌著香港車輛維修業界邁向專業發展新里程。

政府將於2007年1月正式推出「車輛維修技工自願註冊計劃」。計劃目的是提供一個機制，讓具備應有資歷及經驗的車輛維修技工進行註冊，相信有助提升業界的專業形象，加強市民對

車輛維修服務的信心。機電工程署負責計劃的行政事宜。

計劃包括機械、電工及車身三個主要服務類別，其下再細分不同分類，是因應修理不同車輛的類型、引擎及設備對維修技術要求及水平有所不同而制定。

這項計劃的其中一個重要元素，是註冊的車輛維修技工須遵守一套由業界制定的行為守則，並接受有關的表現監察制度。由於註冊技工須參與持續專業進修，我們深信，長遠而言，有助提高車輛維修水平，道路安全自然更有保障。

## 確保鐵路服務安全

自東鐵列車底盤組件支架發現裂紋後，政府隨即要求機電工程署協助監察鐵路公司的調查工作，以及進行現場巡查。

作為機電安全的規管機構，我們的隊伍連續數個星期、日以繼夜地核實鐵路公司的調查工作，並監察有關過渡性改善措施的設計和執行。作為政府的技術顧問，我們就鐵路公司提交的調查報告進行評估，並提出多項建議及改善措施，加強鐵路的安全和可靠性。

## Safe Fun at Disneyland

Moving into its second year of operation, Hong Kong Disneyland remained a popular attraction for both local and overseas visitors. Our team continued to serve as a safety guardian working behind the scenes.

While visitors enjoy their day at the theme park, our inspectors ensure all the rides comply with the highest safety standards. Thorough annual examination is conducted for all amusement rides installed at Disneyland. The last such examination took place at night, after the park was closed, at the express wish of our team, which wanted to minimise disruption to the park's operation. We also examined the design of the park's newest ride, Autopia, before construction began and then reviewed the ride's operational tests.

During the year, we conducted more than a hundred inspections and tests at Hong Kong Disneyland. As more rides are added to the theme park in coming years, we shall remain focused on safety matters.

## Enhancing Vehicle Safety

The year 2006 saw great strides in the professional development of the vehicle maintenance trade in Hong Kong.

A voluntary registration scheme has been developed to identify competent, qualified vehicle mechanics. It is expected to augment the professional image of the trade and help to strengthen public confidence. EMSD has been charged with administering the registration scheme which is scheduled for launch in January 2007.

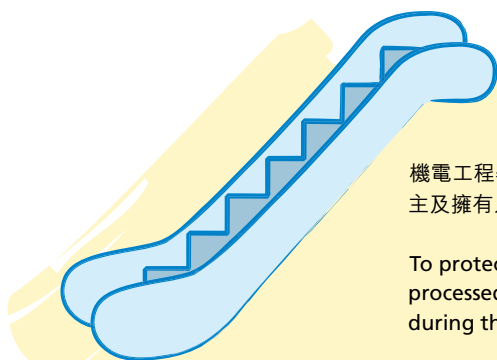
There are three primary service classes for registration under the scheme, namely, Mechanical, Electrical and Body. Under each of these, sub-classes cater for the differences in techniques and standards required to repair vehicles of different types with different engine specifications and equipment.

The scheme is characterised by a quality control mechanism that calls for all registered vehicle mechanics to observe the code of conduct set out by the trade and comply with the associated performance monitoring system. Registered vehicle mechanics are required to participate in continuing professional development, thereby raising the standard of the trade and contributing to improved road safety in the long run.

## Ensuring Railway Safety

Following the discovery of hairline cracks in the under-frame equipment of several East Rail trains, EMSD was called in as part of an expert team to conduct on-site inspections and to oversee the railway operator's investigation of the incident.

As an E&M safety regulator, our team worked literally around the clock during those strenuous weeks, auditing inspections of all the East Rail trains and overseeing the development and implementation of the interim mitigation measures. As a technical advisor to the government, we helped assess the investigation report prepared by the railway operator, and put forward a series of recommendations and improvement measures to enhance railway safety and reliability.



機電工程署進行了超過5,000次巡查，並處理超過60,000張定期測試證明書，確保業主及擁有人對有關裝置定期保養及維修，以策安全。

To protect public safety, EMSD conducted more than 5,000 inspections, and processed more than 60,000 periodic test certificates for lifts and escalators during the year.

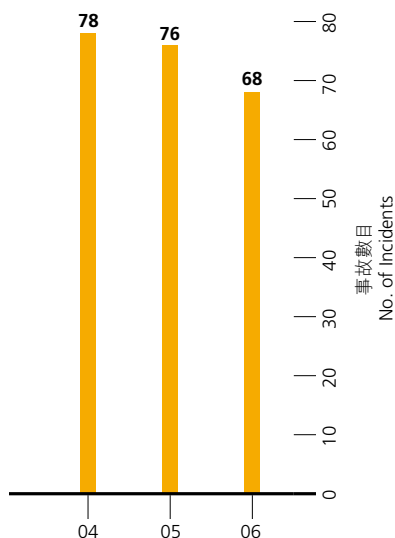


為了配合電線顏色代碼的轉變，我們在總部大樓特設訓練中心，又在我們的網站內增設有關新電線顏色代碼的網頁。

We have set up a training centre specifically for the cable colour change. A portion of our website is also dedicated to the new CCC.



## 電氣產品事故持續減少 Electrical Product Incidents in Decline



有關電氣產品的事故由2005年的76宗下降至2006年的68宗。其中有關電風扇的事故更由18宗大幅下降5成至9宗，相信這是由於我們加強了店鋪巡查，以及著力推廣安全使用和妥善保養家用電氣產品。There were 68 reported incidents relating to electrical products in 2006, a significant decrease from 76 in 2005. It is worth noting that electric fan incidents have dropped by 50 per cent (from 18 to 9) year-on-year, thanks to our stepped-up efforts in shop inspections and in promoting their safe use and proper maintenance.

## 電力安全

### 更改電線顏色

由2007年7月1日起，本港固定電力裝置的電線顏色代碼將會由紅／黃／藍／黑／（綠黃）改為棕／黑／灰／藍／（綠黃）。

有關更改將適用於所有新電力裝置和對現有電力裝置進行的加裝或改裝工程，現有裝置則不受影響。為了確保新電線顏色代碼能夠順利過渡，由2007年7月1日起將會有兩年的過渡期，在過渡期內新或舊電線顏色代碼均可採用。

新電線顏色代碼符合國家及國際標準，並獲多個已發展國家採用。

為了配合電線顏色代碼的轉變，我們推行了一連串宣傳及培訓活動。在宣傳推廣方面，我們利用不同渠道，包括海報、單張、電費單附件、報章、通訊刊物和互聯網站等，向業界及市民公佈有關更改。這些活動旨在確保所有業界人士及相關機構均知悉電線顏色代碼的轉變。

在培訓方面，我們在總部大樓特設訓練中心，為業界提供完善的培訓材料和設施。我們又舉辦了大型訓練班及導師培訓工作坊，目的是確保新電線顏色代碼能夠安全及順利地實施。此外，我們印制了一份安裝指引，免費派發給全港所有76,000名註冊電業工程人員及承辦商。

2006年8月，我們在機電工程署的網站內增設了有關新電線顏色代碼的網頁，提供最新消息和詳盡資訊，當中更包括專為訓練註冊電業工程人員而設的自我評估練習。直至2006年12月，已超過5,200名註冊電業工程人員成功於網上完成訓練。

### 最新國際安全標準

為了進一步提高本港家用電氣產品的安全水平，我們自2005年7月開始與業界磋商採納國際電工委員會(IEC)發佈的最新國際安全標準。新版的國際標準就電氣產品的耐燃及耐熱方面所定的安全規格比舊版標準嚴格，可大大減低產品因電路故障或過熱發生火警的情況。

## ELECTRICAL SAFETY

### Cable Colour Change

The cable colour code (CCC) for fixed electrical installations in Hong Kong will be changed from red / yellow / blue / black / (green-and-yellow) to brown / black / grey / blue / (green-and-yellow) with effect from 1 July 2007.

The CCC change will be applicable to all new electrical installations as well as to additions and alterations to existing electrical installations. Existing electrical installations will not be affected. To ensure a smooth transition to the new CCC, there will be a two-year grace period (from 1 July 2007 to 30 June 2009), during which electric cables of either the new or the old colour code can be used.

The new CCC complies with the requirements of relevant national and international standards and has been adopted by major developed countries.

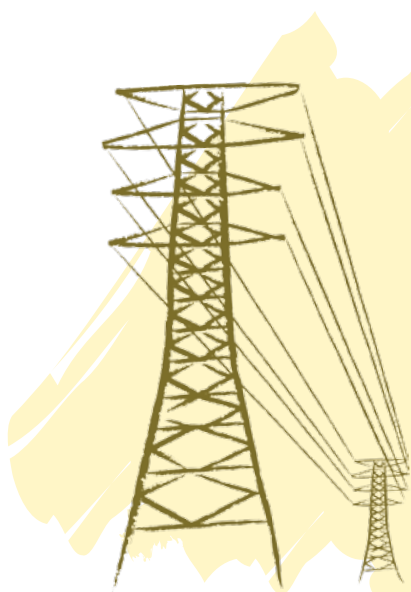
We have developed a series of publicity and training activities to prepare for the change. Targeting both the trade and the public, we have publicised the new CCC through a variety of communications channels, including posters, leaflets, electricity bill inserts, newspapers and our newsletters and website. These efforts seek to ensure that all relevant parties and stakeholders are fully aware of the CCC change.

As for training of electrical workers, we have set up a CCC Training Centre at our headquarters to provide training resources and facilities for the trade. A number of mass-scale training sessions and train-the-trainers workshops have been held with the aim of facilitating the safe and smooth implementation of the CCC change. Moreover, a set of Installation Guidelines has been published and distributed to all 76,000 registered electrical workers and contractors.

We have also dedicated a portion of the EMSD website to the new CCC since August 2006. It provides detailed information and development updates and includes an online self-assessment exercise as part of the CCC training for registered electrical workers. Up to December 2006, more than 5,200 registered electrical workers have been successfully trained through the web.

### New International Safety Standards

In a bid to further improve the safety of household electrical products, EMSD has liaised with the trade since July 2005 on the adoption of the latest standards advocated by the International Electrotechnical Commission (IEC). The new IEC standards for electrical products require enhanced performance, in particular with regard to resistance to heat and fire, thereby greatly reducing the risk of fire due to electrical faults or overheating.



### 停電事故減少

我們加強了對兩間電力公司的發電、輸電及配電站的巡查，並協調事故調查，有助提高供電的穩定性。停電事故數目由2005年的1,957宗下降至2006年的1,717宗。

### FEWER POWER INTERRUPTIONS

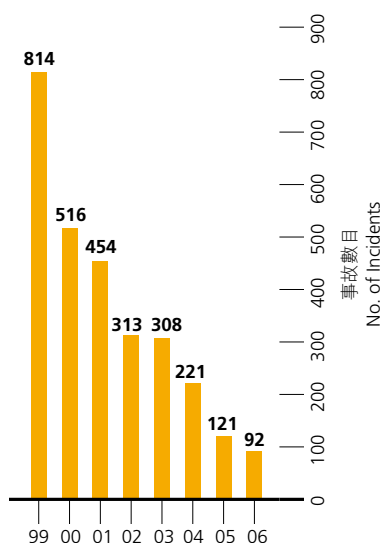
We have stepped up audit inspections of the power generation, transmission and distribution premises of the two power companies and also improved our approach to coordinating incident investigations. Taken together, we believe these improvements have enhanced the reliability of the power supply. Power interruption cases dropped from 1,957 in 2005 to 1,717 in 2006.



我們成功阻截了不安全電暖袋產品流入本港市場。  
Our prompt action has stopped the inrush of unsafe electrothermal bags into Hong Kong.



### 電纜遭第三者損毀事故減少 Third-Party Damage in Decline



雖然電纜遭第三者損毀事故持續下降，但為了進一步減少事故數目，我們於2005年10月修訂了《有關在供電電纜附近工作的實務守則》，提供更清晰、更詳細的指引，有關修訂亦已見成效。Although the number of incidents of third-party damage to electricity supply lines continues to drop, we revised the Code of Practice on Working near Electricity Supply Lines (CoP) to provide even clearer and more detailed guidelines in order to reduce incidents to a minimum. The benefits of the revised CoP have materialised since its introduction in October 2005.

得到電氣業界及供應商的支持，我們就本港電氣產品逐步採納新版的國際安全標準訂下時間表。由2006年10月起，所有進口本港的電風扇必須符合新安全標準。其餘66類產品，包括燙斗、吸塵機、洗衣機、電視機、雪櫃及冷氣機等，則需於2008年12月符合新安全標準規定。

### 不安全的電暖袋

2006年年初，我們在巡查時發現市面有一些不安全的電暖袋。這些由內地生產的電暖袋在加熱時，袋身可能出現過熱及破裂情況，令暖袋內的溶液流出，對使用者構成觸電及灼傷的危險。

我們即時透過與國家質量監督檢驗檢疫總局（國家質檢總局）的合作安排，將事件轉介該局跟進。國家質檢總局隨後作出行動，在各口岸發出警示通報，不允許該類不安全電暖袋產品出口，成功阻截了產品流入本港市場。

With the support of the local trade and product suppliers, we have set a timetable for the gradual adoption of the new standards – beginning with electric fans. From October 2006, all imported electric fans must comply with the latest safety standards. The remaining 66 categories of electrical products, including irons, vacuum cleaners, washing machines, TV sets, refrigerators, and air conditioners, will follow suit in December 2008.

### Unsafe Electrothermal Bags

In early 2006, we identified unsafe electrothermal bags in local retail outlets. These electrode-type electrothermal bags, manufactured in the Mainland, may overheat and rupture, causing the hot conductive liquid to leak with a risk of electric shock and scalding.

Through the Cooperation Arrangement with the Mainland's General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ), EMSD was able to promptly refer the case to AQSIQ for immediate follow-up. AQSIQ subsequently issued warning notices at discharging ports, effectively stopping the inrush of unsafe electrothermal bags into Hong Kong.



## 優質服務獲嘉許

### 公務員事務局局長嘉許狀

在2006年，電力法例部督察鄭迪群先生獲頒發公務員事務局局長嘉許狀，表揚他出色的工作表現。

鄭先生主動協助業主為其大廈固定電力裝置進行定期檢查和測試。雖然法例規定大廈業主必須進行有關檢查和測試，但對一些對大廈管理及保養事宜缺乏認識的業主來說，進行定期測試及領取證明書，並不容易。鄭先生每每採取積極主動的服務態度，耐心地向大廈業主解釋大廈電力安全的重要性，游說並協助他們為其大廈電力裝置進行定期檢查和測試。他鍥而不捨的服務精神獲得不少居民讚許。

此外，鄭先生曾經處理多宗電力意外調查工作，其中一宗更是涉及傷亡的事故，他的隊伍不但協助調查事故成因，更協助逾十幢受影響大廈的業主在短時間內完成全面的檢查和測試，確保住客安全。

### 申訴專員嘉許獎

在2005年7月發生的葵芳閣停電事故不但帶出妥善維修大廈電力裝置的重要性，更突顯了我們員工盡心盡意的服務態度。

該屋苑接連發生兩次停電，時間合共超過56小時，大約3,000人受到影響。電力法例部督察周滿棠先生獲派遣到現場負責調查停電事故，他更不辭勞苦為受影響居民和店舖東主提供緊急支援，並就恢復供電事宜上與多個有關機構協調磋商。他全情投入的工作態度，贏得葵芳閣居民的讚賞。葵青區議會更寄予感謝信，讚揚他專業投入的服務精神。周先生亦因此獲頒發申訴專員嘉許獎，表揚他在處理該停電事故上積極態度和專業精神。

## QUALITY SERVICE RECOGNISED

### Commendation from the Secretary for the Civil Service

Mr Cheng Dick-kwan, an inspector from our Electricity Legislation Division, was awarded a Commendation from the Secretary for the Civil Service in 2006 for his consistently outstanding performance at work.

Mr Cheng takes a proactive approach in helping building owners carry out the periodic inspection, testing and certification (PITC) of electrical installations as required by law. Owing to a lack of knowledge about building management and maintenance, PITC works can be a challenge to many building owners. Mr Cheng always walks the extra mile: he patiently explains the need to upkeep building electrical safety in order to persuade building owners of its benefits. He also helps them discharge their responsibilities by providing technical advice on PITC works. His relentless efforts have won him letters of appreciation from the public.

Moreover, Mr Cheng has handled a number of accident investigation cases, one involving the death of a member of the public. Not only did he and his team manage to trace the root cause of this fault, but he also assisted the building owners to conduct a rapid yet thorough inspection of more than ten buildings in the affected residential development, thereby ensuring electrical safety for all the residents.

### The Ombudsman's Award

The power interruptions at Kwai Fong Terrace in July 2005 underscored the importance of proper maintenance of electrical installations in buildings, and also drew attention to the dedication of our colleagues.

More than 3,000 people were affected by two blackouts that together lasted for more than 56 hours. Mr Chow Moon-tong was assigned to the team investigating the cause of the power interruptions. He went further to assume a coordinating role among the various parties involved in the resumption of electricity supply to the estate. He was also on site to provide immediate support to the affected residents and shop owners. His efforts were recognised and appreciated by the residents of Kwai Fong Terrace, prompting the Kwai Tsing District Council to write a letter praising his professionalism and dedication to his work. Furthermore, Mr Chow received the Ombudsman's Award in 2006 in recognition of his proactive attitude and professionalism throughout this incident.



# 推廣節約能源 Promoting Energy Conservation



“ 機電工程署如何推廣節約能源？  
How does EMSD work to promote  
energy conservation? ”

“ 我們的能源效益事務處專責推動能源效益及  
節約計劃，能源效益標籤計劃為其中佼佼者。  
Our Energy Efficiency Office is tasked  
with spearheading energy conservation  
programmes, among them the celebrated  
Energy Efficiency Labelling Scheme. ”



## 冷卻塔系統

推行冷卻塔先行性計劃是我們在香港非住宅樓宇推廣水冷式空調系統的主要措施之一。該計劃在去年進展良好。以蒸發式冷卻塔取代傳統氣冷式空調系統，可節省能源達20%。

計劃覆蓋的地區數目已經增加至79個，加上業主、發展商及物業管理公司鼎力支持，我們在2006年收到56宗採用較節能的冷卻塔空調系統的申請，累積申請數目增至257宗。這些申請包括新發展項目和更新項目，涉及的總樓面面積為790萬平方米，預計在有關裝置落成後，每年可節省1億8,400萬度電，並使二氧化碳排放量減少128,800公噸。

在257宗安裝冷卻塔的申請中，68宗申請的系統已經安裝及落成啟用，共303座冷卻塔，服務樓面面積為300萬平方米，估計每年可節省5,800萬度電，並可減少排放40,000公噸二氧化碳。

2006年7月，我們就水冷式空調系統編製了一套工作守則，為冷卻塔式空調系統的設計、安裝、操作、保養以至冷卻水處理等事項提供詳細的技術指引。該工作守則旨在推廣冷卻塔的良好設計及操作，追求能源效益的同時，兼顧環境及健康方面須注意的事項。

## 能源效益標籤計劃

能源效益標籤計劃（標籤計劃）於2006年擴展至傳真機，使這項計劃涵蓋的產品增至18類，包括家用器具、辦公室設備及汽車。

這項計劃自1995年推出以來，備受業界及消費者歡迎。標籤計劃不但有助消費者選購節能產品，更可鼓勵產品供應商及製造商淘汰節能表現較差的產品。



冷氣機為首階段強制性能源效益標籤計劃的3類產品之一。

Air conditioners are included in one of the three product categories under the initial phase of the mandatory EELS.

## COOLING TOWER SCHEME

We witnessed another rewarding year for the Cooling Tower Pilot Scheme, a key initiative to advocate the wider use of fresh water for water-cooled air conditioning in non-domestic buildings in Hong Kong. Compared with air-cooled systems, water-cooled air-conditioning systems using evaporating cooling towers can achieve an energy saving of up to 20 per cent.

Thanks to growing support from owners, developers and management companies and the further expansion of the scheme to cover a total of 79 districts throughout Hong Kong, we received 56 applications for the adoption of the more energy efficient cooling tower-type air-conditioning system in 2006, bringing the total number of applications to 257. These applications included both new developments and retrofit projects and involved a total floor area of 7.9 million square metres along with a potential annual

saving of 184 million kWh in energy consumption and a reduction of 128,800 tonnes of carbon dioxide emissions.

Sixty-eight of the 257 applications have been commissioned and put into operation. They comprise 303 cooling towers, serving a floor area of 3 million square metres. It is estimated that these towers can save 58 million kWh in energy consumption and cut carbon dioxide emissions by 40,000 tonnes a year.

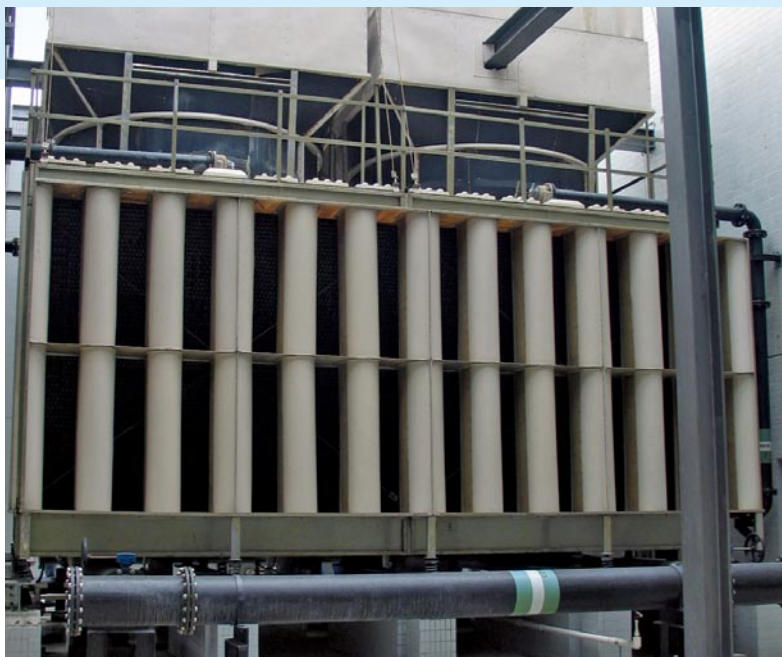
A new Code of Practice for the water-cooled air-conditioning system (CoP) was published in July 2006, providing detailed guidelines and technical reference for cooling tower design, installation, commissioning, operation and maintenance, as well as water treatment methods. The CoP was designed to promote the proper design and operation of cooling towers, meeting the energy efficiency objective with due consideration of environmental and health issues.



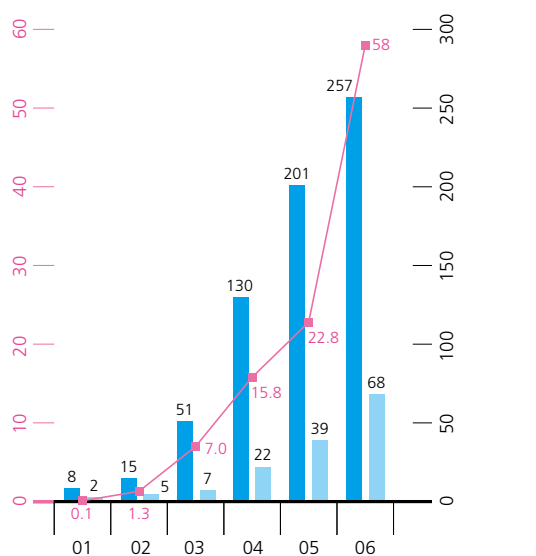
全港最小的冷卻塔安裝在旺角一餐廳上。散熱量：680千瓦  
The smallest cooling tower system is installed at a restaurant in Mongkok. Heat rejection capacity: 680 kW.



全港最大的冷卻塔安裝在薄扶林一個大型商業發展項目：散熱量：37,400千瓦  
The largest cooling tower system serves a commercial development in Pok Fu Lam. Heat rejection capacity: 37,400kW.



## 落成啟用的冷卻塔系統數目不斷上升 Growing Numbers of Cooling Towers Commissioned



- 累積申請數目  
Cumulative No. of Applications
- 累積已啟用裝置數目  
Cumulative No. of Commissioned Installations
- 已啟用裝置每年可節省的能源(百萬度/每年)  
Annual Energy Saving of Commissioned Installations (GWh/yr)

為了進一步推廣節能，標籤計劃正由自願性質演變為強制性計劃。建議的首階段強制性標籤計劃會包括雪櫃、冷氣機及緊湊型熒光燈（即慳電膽）。這3類產品的用電量合共佔住宅用電量的70%以上。

我們就強制性標籤計劃進行為期3個月的公眾諮詢，收到不少意見，其中大部份表示支持，認為推行強制性標籤計劃有助節約能源。我們現正草擬有關推行強制性計劃的法例，並且成立兩個專責小組，成員包括業界商會及供應商等，分別為雪櫃和冷氣機、以及慳電膽強制性標籤計劃制訂推行細節。

我們估計就上述3類產品推行強制性標籤計劃後，每年可節省1.5億度電，而且每年可減少排放105,000公噸二氧化碳。

## 引入節能工具

我們的能源效益事務處繼續積極引入節能技術，在2006年推介的技術包括太陽隔熱膜和一些照明系統的更新方法。

### 隔熱膜

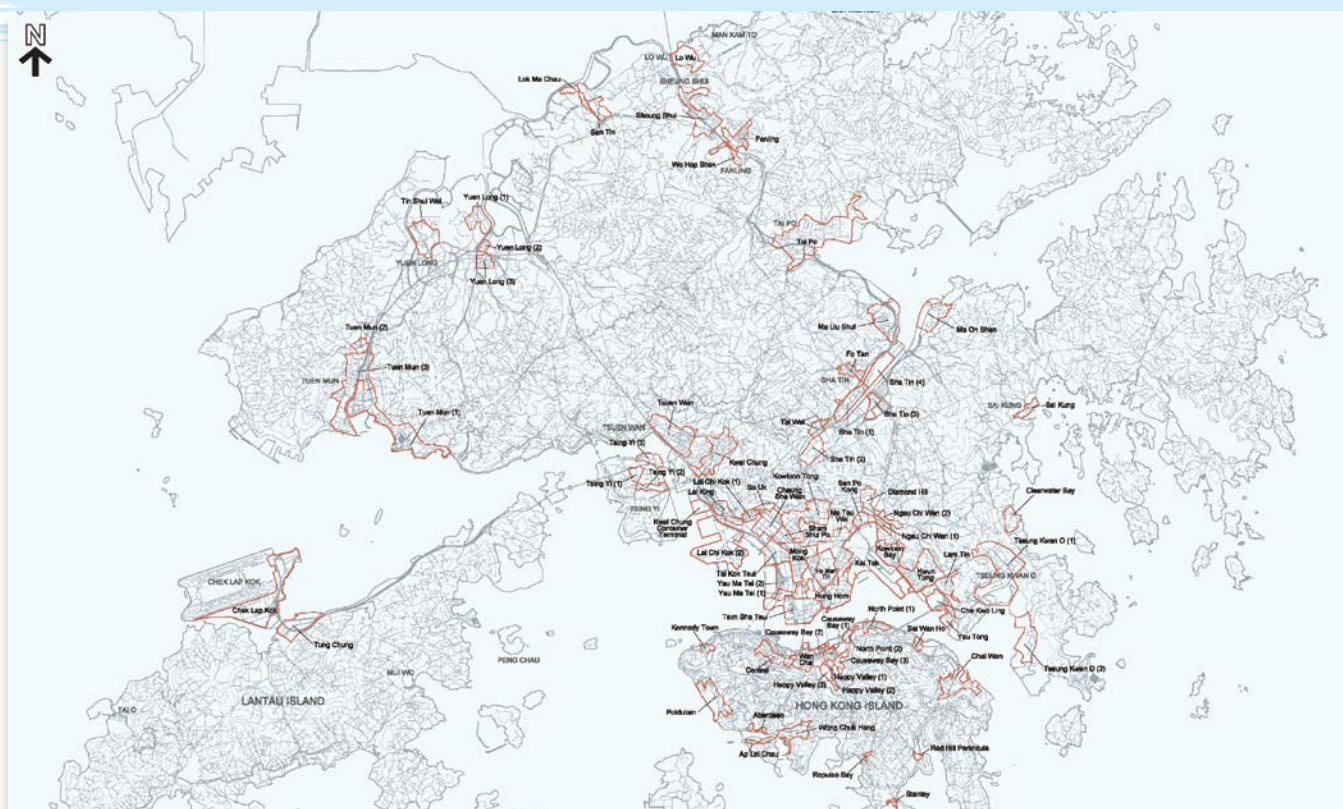
在陽光普照的夏日，由窗戶傳入室內的太陽熱量約佔大廈空調負荷量的15%至20%。太陽隔熱膜是一塊塗有反射太陽輻射的金屬塗層聚酯膠片，安裝在窗扇的裡面，可有效減少太陽熱量傳入室內達80%，並可阻隔99%的紫外線。但在選購隔熱膜產品時，除了考慮其隔熱能力外，亦需同時考慮其透光率。

### 更新照明系統

新落成的建築物，大多採用機電工程署推介的高節能T5光管。但是本港大部份大廈仍然使用能源效益較低的T8光管，甚至較為「渾圓」的T12光管，可能是部份大廈業主和管理公司認為更換整套照明系統並不划算。

冷卻塔計劃覆蓋的地區數目已經增加至79個，約佔全港七成非住宅用地，有利推廣採用較節能的冷卻塔空調系統。

With its designated area expanded to 79 districts, the Cooling Tower Scheme now covers about 70 per cent of Hong Kong's non-domestic floor area – a big push on the adoption of the more energy efficient cooling tower-type air-conditioning system.



## ENERGY EFFICIENCY LABELLING SCHEME

The Energy Efficiency Labelling Scheme (EELS) was extended to fax machines in 2006, bringing the total number of product categories under the scheme to 18, including household and office appliances and vehicles.

Since its introduction in 1995, EELS has been well received by both the industry and consumers. It not only helps consumers to select energy-saving products, but also encourages manufacturers and suppliers to phase out less energy efficient models.

In a bid to further promote energy conservation, EELS is evolving from a voluntary initiative to a mandatory scheme. The initial phase of the mandatory EELS will cover refrigerators, air conditioners and compact fluorescent lamps (CFL), which together account for over 70 per cent of electricity consumption in the residential sector.

The vast majority of the feedback from the three-month public consultation expressed support for the implementation of the proposed mandatory EELS and agreed that the scheme would contribute to achieving efficient use of energy. We are now preparing the legislation that will introduce the mandatory scheme. Two task forces – specifically for air conditioners and refrigerators, and CFL, respectively – have

been set up with relevant trade associations and suppliers to work out implementation details.

It is estimated that implementing the proposed mandatory EELS would bring about an energy saving of 150 GWh and a reduction of carbon dioxide emissions of 105,000 tonnes a year.

## INTRODUCING ENERGY EFFICIENT TOOLS

Our Energy Efficiency Office continued its pioneering role in the introduction of energy-saving technologies in 2006, among them the Solar Control Window Film and a series of lighting retrofitting tools.

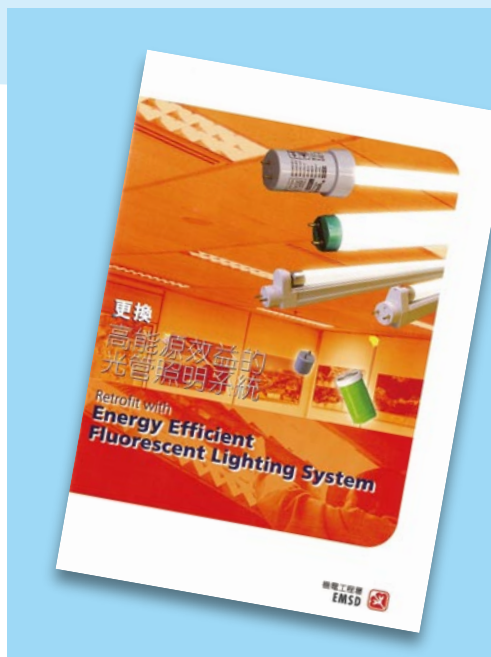
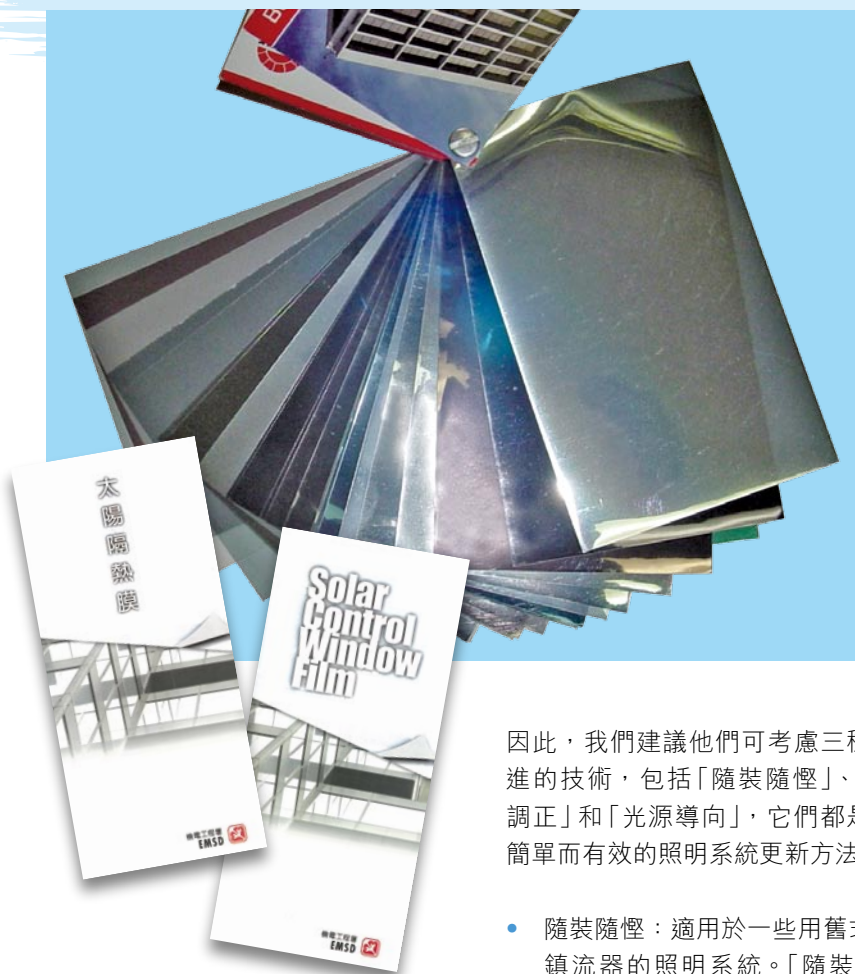
### Solar Shield

Solar heat gain through windows may account for 15 per cent to 20 per cent of the indoor air-conditioning load of a building, particularly in the summer. A solar control window film is a piece of polyester with a metallic coating that reflects solar radiation. When installed on the interior of the window pane, the window film works as a solar shield that can reduce heat gain by up to 80 per cent and screen out up to 99 per cent of damaging ultraviolet rays. However, a balance between the solar control capability and visible light transmission property must be obtained when choosing a suitable film product.



太陽隔熱膜可減少高達八成的太陽熱量傳入室內。  
Solar control window films can reduce heat gain by up to 80%.

一些簡單而有效的更新方法能夠提升照明系統的能源效益。  
Simple but effective retrofitting measures make existing lighting systems much more energy efficient.



因此，我們建議他們可考慮三種新引進的技術，包括「隨裝隨慳」、「亮度調正」和「光源導向」，它們都是一些簡單而有效的照明系統更新方法。

- 隨裝隨慳：適用於一些用舊式電磁鎮流器的照明系統。「隨裝隨慳」科技透過「仿電子鎮流器」、T5光管和簡單的安裝步驟去節約能源。一般情況下無須改裝內部線路。
- 亮度調正：適用於照明亮度過高的場所。「亮度調正」科技無須更換整套燈具，祇須用一支較短但配有仿電子鎮流器和延伸器的光管來取代舊管便可。
- 光源導向：「光源導向」科技主要利用鏡面光反射器把各燈管的光線集中及射到工作表面，以增加照明亮度，從而可減省所需光管的數量。

### 消防局安裝太陽能熱水系統

響應政府呼籲在政府建築物採用節能設施及可再生能源技術，並且得到消防局局長的鼎力支持下，我們在九龍灣消防局安裝了一套先進的太陽能熱水系統。

該系統主要用作把沐浴用水預先加熱。系統運用真空熱管型太陽能集熱器來收集熱能，並借助兩塊太陽能光伏板發電，推動水泵。

該系統集熱器備有約40條玻璃管，預計容量可達3.2千瓦。我們正收集有關系統的操作數據，為期12個月，用作分析這類太陽能熱水系統的表現。

### 風力資源評估研究

我們於2006年完成了風力測量計劃，並已經蒐集5個監測站全年的風力數據，它們分別位於政府物料營運中心、伙頭墳洲、砵甸乍山、東龍洲及廟仔墩。我們正利用這些數據就香港東面地區的風力發電潛力進行評估，以及編製一套香港的風力資源圖。

由香港電燈有限公司籌建的全港首個具商業規模的風力發電站於2006年2月正式落成啟用。該風力發電站預計一年可產生100萬度電，足以滿足250個家庭的電力需求。風力發電站內設立展覽場地，介紹風能和其他可再生能源及其優點，以及在世界各地的應用情況等。到訪風站亦可了解風力發電機組的即時運作情況，現場的顯示屏會展示多項數據，包括風速、即時

我們在九龍灣消防局安裝一套先進的3.2千瓦太陽能熱水系統。  
An advanced solar thermal heating system with a total capacity of 3.2 kW is installed at the Kowloon Bay Fire Station.



### Lighting Retrofits

The lighting systems of most modern buildings incorporate the energy efficient T5 fluorescent tube – which is indeed among the most popular energy-saving equipment introduced by EMSD. However, while we recommend replacing less energy efficient tubes with T5, some building owners and managers might be deterred by installation costs. Indeed, the majority of buildings in Hong Kong are still using the T8 or even the “fat” T12 tube.

As an alternative, we recommend three types of emerging retrofit technologies, namely, Plug and Enhance (PnE), Light Level Abatement (LLA) and Re-direction (RD). All are simple and effective.

- Plug and Enhance: Suitable where existing lighting is equipped with old-fashioned electromagnetic ballasts, PnE technology reduces energy input through the simple installation of quasi-electronic ballasts (QEBs) and T5 tubes. Normally no wiring modification is required.
- Light Level Abatement: Suitable for over-illuminated premises, LLA does not require total lighting fitting replacement. The old tube need only be replaced by a shorter one fitted with a QEB and an extension unit.
- Re-direction: RD makes use of reflectors to direct light output towards a working plane to increase the illumination level. This reduces the number of tubes required.

### SOLAR HEATING AT FIRE STATION

Echoing the government’s call for the adoption of energy efficiency features and renewable energy technologies in government buildings, we recently installed an advanced solar thermal heating system at the Kowloon Bay Fire Station with the support of the Director of Fire Services.

Preheating water for the showers at the fire station, the system employs evacuated heat-pipe solar collectors to collect thermal energy. Two photovoltaic panels power the water circulation pumps to form a zero-energy system.

The evacuated heat-pipe solar collectors at the Kowloon Bay Fire Station use around 40 glass tubes and have a total expected capacity of 3.2 kW. Year-round data is being collected to evaluate the performance of this type of solar water-heating system.

### WIND ENERGY RESOURCE MAPPED OUT

Our field-based wind measurement programme was completed in 2006. Year-round data was collected from the five wind monitoring stations at Government Logistics Centre, Town Island, Pottinger Peak, Tung Lung Chau and Miu Tsai Tun. The data is being analysed to assess wind energy potential, particularly in the eastern part of the territory and a wind resource map for Hong Kong is also being prepared.

The first commercial-scale wind power station was put into service in February 2006. Built and operated by Hongkong



兩家公用事業公司將從深圳經海底管道輸入天然氣作生產煤氣及發電用途。  
Two utilities companies will import natural gas from Shenzhen - via submarine pipelines - for gas manufacturing and power generation.

- 海底管道往大埔煤氣廠  
Submarine Pipeline to Tai Po Gas Production Plant
- 海底管道往港燈南丫發電廠  
Submarine Pipeline to HEC Lamma Power Station



產電量、累計發電量，以及可減少的二氧化碳排放量等。

電力公司可透過這個風力發電試點項目，汲取應用風能發電的寶貴經驗，並鼓勵各界更多使用可再生能源，可說是香港可持續發展路上的一個里程碑。中華電力有限公司現亦籌建一座風力發電機，藉以向公眾示範及評估這種技術。

此外，中華電力有限公司和香港電燈有限公司亦正研究在香港的東南和西南水域興建離岸風場的可行性。

## 天然氣

2006年，本港朝著更廣泛使用天然氣的路上邁步。

兩組分別長93公里及34公里，由深圳新近落成的液化天然氣庫連接至南丫島的發電廠及大埔的煤氣廠的海底輸氣管道已經投入服務。

天然氣是一種清潔、環保及低排放物的燃料，氣體排放量低，廣泛使用天然氣作燃料發電及作原料生產煤氣，

有助減少燃燒燃料時產生的廢氣，令環境更清新潔淨。輸入天然氣，更可減低本港過於倚賴傳統化石燃料的情況。

作為本港的氣體規管機構，我們一直監察有關的天然氣設施及輸氣管道。由設計、建造、測試至正式啟用，我們確保工程項目的每部份都完全符合安全規定。

## 加強與內地合作

我們與國家質檢總局於2006年3月初在香港舉行《合作安排》第三次年度會議，並進行分組會議。三個分別負責電氣產品安全、燃氣用具安全和升降機及自動梯安全的工作小組，繼續努力合作，在技術交流和核證等方面都取得良好進展。此外，在原有的《合作安排》下成立第四個工作小組，專責推廣能源效益。

新的工作小組將兩地的合作範疇擴展至能源效益這個新領域，落實本港與內地共同推動節約能源的目標。

於南丫發電廠的天然氣接收站已經投入服務。  
The natural gas receiving station at the Lamma Power Station has come into operation.



Electric, it is expected to generate 1 million kWh of electricity a year, sufficient for the power needs of 250 families.

The wind power station also features an exhibition area to promote renewable energy and its environmental benefits and applications worldwide. Real-time data is collected and displayed on an energy meter on site, allowing visitors to appreciate the wind turbine at work. Information on wind velocity, power output, amount of electricity generated and carbon dioxide reduced is also shown.

The pilot wind power project enables the power company to gain valuable experience in utilising wind energy for power generation. It also promotes the wider application of renewable energy in the territory, representing a milestone in Hong Kong's pursuit of sustainable development. CLP Power is also planning for the construction of another wind turbine for public demonstration and evaluation purposes.

Furthermore, Hongkong Electric and CLP Power are studying the feasibility for the construction of offshore wind farms in south-eastern and south-western waters of Hong Kong.

## NATURAL GAS

The year 2006 saw encouraging progress in the wider use of natural gas in Hong Kong.

The two sets of submarine pipelines connecting the newly built Liquefied Natural Gas (LNG) Terminal in Shenzhen to the Lamma Power Station and the Tai Po Gas Production Plant in Hong Kong – measuring 93 km and 34 km respectively – have come into operation.

Natural gas is clean and environment-friendly with low emissions. Its wider use as an alternative fuel source for power generation and as a new feedstock for town gas production is expected to significantly reduce emissions, contributing to a better, cleaner environment. Moreover, the importation of natural gas also alleviates Hong Kong's dependence on conventional fossil fuels.

As the territory's gas safety regulator, we keep a close eye on the natural gas facilities and pipelines. From design and construction through to testing and commissioning, we ensure every component of the project complies with the safety requirements.

## STRENGTHENING COOPERATION WITH THE MAINLAND

The third annual general meeting on the Cooperation Arrangement between Mainland's General Administration of Quality Supervision, Inspection and Quarantine and EMSD took place in Hong Kong in March 2006. While the three working groups – which take charge of safety issues related to electrical appliances, gas appliances, and lifts and escalators, respectively – continued their exchange of technologies and the sharing of views on cross-border certification, a new working group was set up to promote energy efficiency.

It represents a closer cooperation between Hong Kong and the Mainland on a new front, and also signifies our joint commitment to conserving the environment.



# 提高公眾安全及節能意識

## Raising Public Awareness



“ 公眾教育對機電工程署的工作有何重要？  
Why is public education important to  
EMSD's work? ”

“ 我們相信預防勝於治療，游說更勝執法。  
我們希望透過形形色色的社區宣傳活動，  
提高公眾對機電安全的知識和意識。

Because we believe persuasion and prevention are  
far more effective than policing, we work to foster  
public awareness and promote safety practices  
through a range of community activities. ”



## 香港能源效益獎

第一屆香港能源效益獎圓滿結束。逾400位嘉賓出席在2006年5月舉行的頒獎典禮，席上表揚230多間參賽機構的努力及得獎機構的成就。

這個為期一年的比賽，主要對象為商業和住宅大廈及學校，目的是提倡採用最佳節能方法，並且表揚節能成就。此外，比賽讓私營機構制定節約能源的基準，找出需要改善的地方。

頒獎典禮後我們舉辦了三場經驗分享座談會，讓得獎機構分享節能心得。另外，我們把部份獲獎者的節能措施及方法收錄於光碟上，免費派發予有興趣人士及機構，分享有關經驗。

## 不斷推動節能意識

有見首屆香港能源效益獎的成功，機電工程署在來年將節能比賽擴展至由香港房屋委員會、香港房屋協會、領匯管理有限公司和市區重建局所發展

或管理的物業。逾三百多萬人居住在這些樓宇，相當於覆蓋全港45%的人口。

第二屆香港能源效益獎比賽已於2006年11月公佈，比賽將由2007年1月開始，為期八個月，比賽將分為住宅樓宇及商業樓宇兩個類別。比賽希望鼓勵創新良好節能方法及嘉許成功個案，藉以進一步在社區推動節能意識。



### 節能專家

第一屆香港能源效益獎得獎機構平均節省了能源8.1%，大獎得主更節省了25%的能源。

### TOP SAVERS

The average year-on-year energy saving of the winners of the first Hong Kong Energy Efficiency Awards is 8.1 per cent. The top saver achieved a saving of 25 per cent a year!

## ENERGY EFFICIENCY AWARDS

The first Hong Kong Energy Efficiency Awards ended on a resounding note, with more than 400 guests attending the awards presentation ceremony in May 2006. Winners were honoured and the efforts of all the more than 230 entrants were recognised.

Targeted at commercial and residential buildings and schools, the award scheme aimed to promote best practices and recognise achievements in energy efficiency and conservation. The one-year competition also provided an opportunity for the private sector to benchmark its efforts and to identify areas for improvement. It was with this thinking in mind that three experience-sharing sessions were organised after the awards presentation ceremony. Energy-saving methodologies of some of the award winners were recorded onto a CD-ROM for distribution to interested parties and the general public.

## SECOND AWARD SCHEME TO FURTHER AWARENESS

Following on from the success of the first Energy Efficiency Awards, EMSD has extended the award scheme to include buildings under the Housing Authority, Housing Society, The Link Management Limited and the Urban Renewal Authority, which together house more than three million people, that is, 45 per cent of the Hong Kong population.

The second Energy Efficiency Awards competition was announced in November 2006. It will run for eight months from January 2007 and include two categories, namely residential and commercial properties. With a view to furthering community awareness of energy saving, the competition honours good practices, successes and innovations in energy conservation.



第二屆香港能源效益獎將擴展至由香港房屋委員會、香港房屋協會、領匯管理有限公司和市區重建局所發展或管理的物業，相當於覆蓋全港45%的人口。  
The second Energy Efficiency Awards include buildings under the Housing Authority, Hong Kong Housing Society, The Link Management Limited and the Urban Renewal Authority, representing 45% of the Hong Kong population.

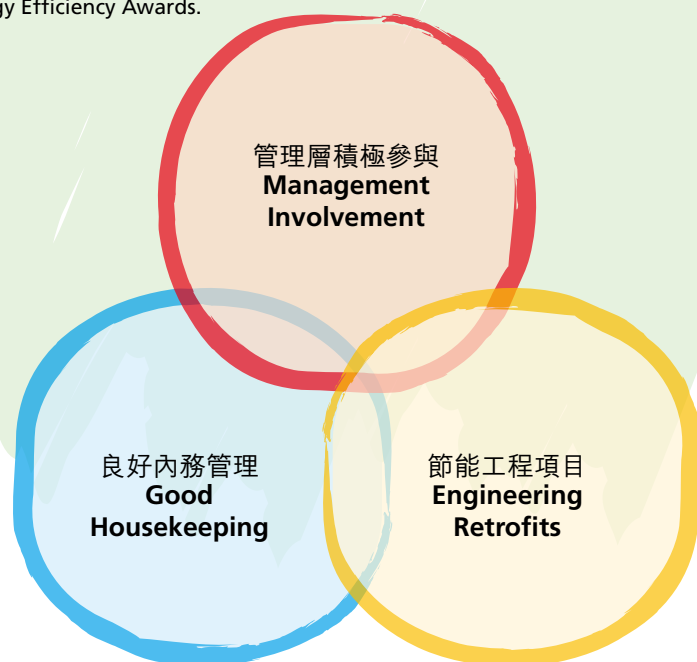


### 節能三部曲

得獎機構分享成功節約能源的三個主要環節：管理層積極參與、良好內務管理、節能工程項目。

### Three in Play on Energy Saving

Three factors are critical to energy saving, say the winners of the Energy Efficiency Awards.



## 機電安全香港通

15間主要機構與機電工程署聯手舉辦「機電安全香港通2006」運動，合力提升市民對電力、氣體、電梯及機動遊戲的安全意識，以及推廣節約能源的訊息。

該運動為本港最大規模的公眾教育活動之一，機電工程署在過去六年都得到公共及私營機構的支持。運動包括多項社區及宣傳活動，戶外嘉年華會為其中重點活動，一直深受市民尤其是小朋友及家庭的歡迎。

與機電工程署合辦「機電安全香港通2006」的15個主要機構來自公用事業、公共交通、房屋、遊樂設施及行業商會等，包括中國檢驗有限公司、中華電力有限公司、埃克森美孚香港有限公司、香港中華煤氣有限公司、香港迪士尼樂園、香港電燈有限公司、香港房屋委員會、香港國際機場、港九電器商聯會、香港液體氣(集團)有限公司、香港安全認證中心、九廣鐵路公司、電梯業協會、地鐵有限公司和香港蜆殼有限公司。

「機電安全嘉年華」吸引數千名來自不同階層的市民參加。  
The E&M Safety Carnival has attracted thousands of people from all walk of life.



## E&M SAFETY CAMPAIGN

Fifteen leading organisations joined EMSD in the E&M Safety Campaign 2006, a concerted effort to promote energy efficiency and the safe use of electricity, gas appliances, lifts and escalators, and amusement rides.

One of Hong Kong's largest public education programmes, the E&M Safety Campaign has garnered growing support from the public and private sector over the past six years. In addition to a line-up of community and publicity activities, the campaign again featured an outdoor carnival, which remained very popular with the public, especially children and families.

The 15 collaborating organisations in the 2006 campaign came from such varied sectors as utilities, public transport, housing and recreation, and included related trade associations. They were: China Inspection Company Limited, CLP Power Hong Kong Limited, ExxonMobil Hong Kong Limited, Hong Kong and China Gas Company Limited, Hong Kong Disneyland, The Hongkong Electric Company, Limited, Hong Kong Housing Authority, Hong Kong International Airport, Hong Kong and Kowloon Electrical Appliances Merchants Association, Hong Kong L.P. Gas (Holdings) Limited, Hong Kong Safety Institute, Kowloon and Canton Railway Corporation, the Lift and Escalator Contractors Association, MTR Corporation, and Shell Hong Kong Limited.



我們的學校外展宣傳活動非常成功。  
Our school outreach programmes have proved increasingly popular.



### 支持藍天行動

為配合政府推出的「藍天行動」，我們推出「節約能源約章2006 - 適當室內溫度」。該約章旨在鼓勵參與機構、團體或個人攜手合作，在日常工作和生活節約能源，以符合「須用則用，可慳則慳」的原則。我們的焦點在於推廣在夏季月份調高空調室內溫度至攝氏25.5度，我們相信這個簡單的內務管理可有效減少能源消耗。

至2006年12月，超過350間機構和學校已經參與了約章。

### 安安全全地球之旅

特別為幼兒園、幼稚園和小學學生而設的機電安全教材套「安安全全地球之旅」第一、二輯已經出版，並派發予全港2,000間學校。該兩輯故事教材集中灌輸使用機動遊戲機、升降機和自動梯的安全知識。

教材套採用輕鬆活潑的現代童話故事形式，主角是居住在「安斯迪」的星球人。他們非常聰明，發明了很多有用的機器，但他們的安全知識却相當貧乏。於是派遣安安公主和全全王子探訪地球，學習機電安全的知識。

故事環繞他們在地球的經歷，教材套資料豐富，包括講故事環節、角色扮演等，從而提高小朋友對機電安全的意識。

我們製作電視宣傳短片，呼籲業主定期檢查及維修大廈的電力裝置。

New TV commercials enhance awareness of the importance of regular inspection and maintenance of electrical installations in buildings.





「安安全全地球之旅」教材套以輕鬆活潑的現代童話故事，帶出機電安全的訊息。

*Odyssey Wanderers is a modern-day fairytale designed to deliver E&M safety messages in a light-hearted fashion.*

## EMBRACING ACTION BLUE SKY

In connection with Action Blue Sky, EMSD has developed a new campaign: “Energy Conservation Charter 2006 – Suitable Room Temperature”. The campaign calls on organisations, groups and individuals to pledge their support to saving energy and adhering to the principle of “use if required, save if possible”. Our focus is again on the setting of the air-conditioned room temperature to 25.5°C in the summer months, a simple housekeeping measure that we believe could considerably reduce energy consumption.

As of December 2006, more than 350 organisations and schools had signed the charter.

## ODYSSEY WANDERERS

The first two modules of Odyssey Wanderers – focusing on the safe use of amusement rides and lifts and escalators – have been prepared and distributed to all 2,000 kindergartens, nurseries and primary schools in Hong Kong.

Odyssey Wanderers is a modern-day fairytale designed to deliver E&M safety messages in a light-hearted fashion. Odyssey is a planet populated by intelligent creatures that have a talent for invention but no understanding of safety. Princess On and Prince Chuen are sent to Earth to learn about E&M safety.

Developed around their adventures on Earth, the education kit provides lots of teaching materials for story telling, role playing and discussion to cultivate safety awareness among the young.

## 25.5度的效果如何？

我們就評估將空調室溫維持在攝氏25.5度這措施的成效，在五個分別位於香港不同地區的政府建築物進行了一項詳細的研究，結果令人鼓舞。

我們比較這五個地點在2004年和2005年夏季的能源消耗量，比較過程中考慮到各種對能源消耗有一定影響的因素，包括天氣，總樓面面積、員工人數、工作日數和各種辦公室設備等。

研究結果顯示，所有五個地點在上列等影響因數轉變作調整後的能源消耗都減少了，平均減幅為4.2%。

## How Effective is the 25.5°C Initiative?

We have conducted a study to evaluate the effectiveness of the 25.5°C initiative. The study covered five government venues located in different districts throughout Hong Kong, and the findings were most encouraging.

Energy consumption figures from the five venues were collected for analysis during the summer months of 2004 and 2005. We took into account a number of factors that have a considerable bearing on energy consumption, including weather, floor area, number of staff and working days, and office equipment.

Having adjusted for these factors, all five venues recorded a reduction in power consumption – with an average saving of 4.2 per cent!



教材套上載於互聯網，為學生及教師提供有關能源效益課題的教學資源。

The education kit on energy efficiency – readily available on the internet – provides plentiful learning and teaching resources.



## 給中學生的教材套

一套專為香港中一至中三的綜合科學科和中四至中五的物理科而設的「能源效益」教材套已經推出，為學生及教師提供有關能源效益課題的教學資源。

教材套上載於互聯網，分為五個學習範圍，包括能量的產生及輸送、家居能源效益、商業及工業能源效益、運輸的能源效益和另類能源。

教材套備有圖片、相片、示意圖、短片及動畫等多媒體資源協助解釋，讓學習時事半功倍。此外，教材套設有線上互動問題，幫助學生了解自己的學習情況。

教師亦可下載教師指引以及圖片集等教學資源，方便在課堂上使用。

教材套計劃由機電工程署發起製作，並獲中華電力有限公司與香港電燈有限公司撥款。教學資源及網站由香港中文大學物理系設計及製作。教育統籌局及香港教育城提供教學及後勤支援，和協助教材套的分發。

## EDUCATION KIT FOR SECONDARY STUDENTS

An education kit on energy efficiency has been developed for secondary school students and teachers in Hong Kong. Complementing the S1-3 Integrated Science Curriculum and the S4-5 Physics Curriculum, the education kit provides plentiful learning and teaching resources.

Readily available on the Internet, the kit covers five main energy-related topics: power production and transmission, domestic energy efficiency, commercial and industrial energy efficiency, energy efficiency in transportation, and alternative sources of energy.

The website features a number of user-friendly tools and incorporates images, photos, illustrations, videos and animations to facilitate ease of learning. It also includes online quizzes to allow students to test their understanding of the science concepts.

Teachers' notes and presentation materials are available for use in class teaching.

Initiated by EMSD, the project was funded by CLP Power Hong Kong Ltd. and the Hongkong Electric Co. Ltd. The kit materials and website were designed by the Department of Physics at the Chinese University of Hong Kong. The project was also supported and facilitated by the Education and Manpower Bureau and Hong Kong Education City.







本年報採用無氯氣漂染紙漿製造的環保紙印刷  
This report is printed on environmentally friendly paper  
manufactured from totally chlorine-free pulp.

政府物流服務署印製  
Printed by the Government Logistics Department



**機電工程署**

香港九龍啟成街3號

**Electrical and Mechanical Services Department**

3 Kai Shing Street, Kowloon, Hong Kong

電話 Tel: (852) 1823 傳真 Fax: (852) 2890 7493

網址 Website: [www.emsd.gov.hk](http://www.emsd.gov.hk)

電郵 Email: [info@emsd.gov.hk](mailto:info@emsd.gov.hk)