

Environmental Responsibilities

Aiming for a better quality of life for the community represents an underlying principle of the day-to-day operation of EMSD. We are aware that our operations can impact the environment in the course of rendering services to customers and the public. To conserve the environment, our first priority is to avoid creating environmental pollution, or reduce the impact if pollution is inevitable. We reduce impact where it is created, enhance the environment where we operate and conserve resources over the long term. Our efforts include reducing the energy, water and other resources and materials consumed in the course of rendering our services, while minimising pollutants such as emissions, effluents and wastes.

To support the Government's commitment to the Clean Air Charter and improve air quality, we have also implemented various measures, details of which are found on p.25

Environmental Management System






Our performance in environmental aspect is mainly governed by the Environmental Management System (EMS) which has evolved over the years. First implemented in the mid-1990s, EMS featured a decentralised management framework with each division ensuring that its operations comply with internationally recognised standards and the legislative requirements in Hong Kong. In 2000, we took a step forward and became the first government agency to attain the ISO14001 Corporate Certificate. In 2002, we streamlined our various management systems in quality, environment and occupational health and safety, and combined them into an Integrated Management System (IMS) which is the system in current use.

Environmental Policy

Our Goal

The management and staff of the Electrical and Mechanical Services Department are committed to building a better environment through an ongoing environment conservation, protection and improvement programme.

Our Policy

-  To take pride in ourselves as a responsible organisation that is helping to build a better environment.
-  To take every reasonable and practicable measure to conserve resources, minimise the generation of waste and prevent pollution in each and every one of our business operation processes.
-  To comply with green legislation as the baseline of our operations and to ensure that all staff behave accordingly.
-  To encourage our contractors and their staff to be equally friendly to the environment.
-  To ensure that our environment management system conforms to internationally recognised ISO 14001 standards.



A Leading Role in Energy Conservation Initiatives

We welcome the APEC Leaders' Declaration on Climate Change, Energy Security and Clean Development adopted in Sydney in 2007. As an APEC member, Hong Kong will honour its pledge to support the Declaration and seek to achieve a reduction in energy intensity of at least 25% by 2030 (with 2005 as the base year).

In fact, ever since the 1990s, EMSD has launched many pioneering energy conservation schemes. Our energy conservation work has two aspects: promoting energy efficiency and encouraging the wider use of renewable energy. Highlighted below are the latest developments in our efforts to support Government's policy to step up energy conservation.

Proposed Mandatory Energy Efficiency Labelling Scheme

The Government has proposed a mandatory Energy Efficiency Labelling Scheme covering room air conditioners, refrigerating appliances and compact fluorescent lamps in the initial phase. The Energy Efficiency (Labelling of Products) Bill was introduced to the Legislative Council in 2007 and was passed in April 2008. It was estimated that the Scheme could help reducing 150 GWh of electricity consumption annually.

Proposed Mandatory Building Energy Codes

To promote energy efficiency in buildings, the Government conducted a 3-month consultation on the mandatory implementation of the Building Energy Codes from December 2007 to March 2008. Various stakeholders and the community were consulted on the proposal through a variety of channels such as the media, professional conferences, technical talks and public forums. The views and comments collected will be considered in drafting of the legislative proposal, which is planned to be introduced to the Legislative Council in 2009.

Scheme to Promote Fresh Water Cooling Towers

The Scheme aims to promote the wider use of fresh water evaporative cooling towers in air-conditioning systems which are more energy efficient than air-cooled systems. As of 31 March 2008, a total of 82 areas has been designated for the Scheme, including the newly designated areas of Mid-levels West and Pak Shek Kok.



Public Consultation on Proposed Mandatory Building Energy Codes



Water Cooling Towers at Young Men's Christian Association, Tsim Sha Tsui

Since the commencement of the Pilot Scheme and up till 31 March 2008, we have received over 340 applications, and 116 installations with a total cooling capacity of 647,000 kW have been completed and put into operation. We estimate that this would save electricity by 93 million kWh per annum and reduce green house gases by 65,000 tonnes per annum.

The 2nd Hong Kong Energy Efficiency Awards

The competition aims to encourage the public to save energy, promote best practices, as well as to commend those who have made efforts, innovations and achievements in energy efficiency and conservation. This year's Awards competition attracted more than 1,400 entries between January and August 2007, and the winners achieved outstanding results. In the "Common Areas" category, energy savings of around 34% was registered when compared with the same period in the preceding year. For the "Households" and "Tenants" categories, some winners achieved energy saving of more than 40% and 20% respectively.



Award Presentation Ceremony of the 2nd Hong Kong Energy Efficiency Awards

Promotion of Renewable Energy

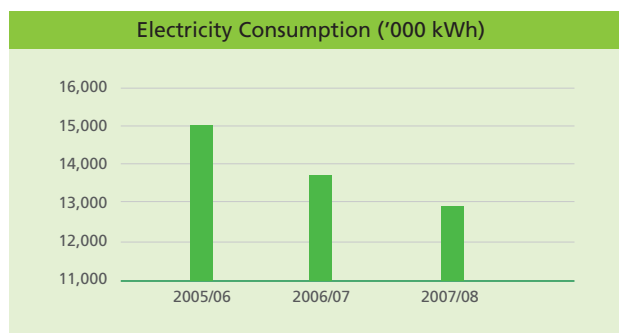
Grid Connection of Renewable Energy Power Systems

To keep pace with changes in international standards and technological advancements in trade and industry, EMSD published the Technical Guidelines on Grid Connection of Renewable Energy Power Systems (2007 Edition). Compared with the first edition issued in 2005, the application range in the new edition has been increased from 200kW to 1000 kW in respect of the Aggregated Power Rating of the system.

Conservation of Operational Resources

Electricity

The total purchased electricity was 12.82 GWh in 2007/08, covering Kowloon Bay headquarters, Caroline Hill workshop, Fan Garden vehicle depot, Siu Ho Wan vehicle depot, and EMSD workshop at Chek Lap Kok Air Mail Centre. From 2005/06 to 2007/08, there has been a general decline in electricity consumption.



EMSD relocated its headquarters from Caroline Hill Road to Kowloon Bay in 2005/06. As a result of phased relocation, there was parallel operation of both the old and new headquarters buildings for a brief period leading to a higher consumption level in that year. The increase in consumption was also attributed to the provision of many new facilities in the new headquarters building such as the Corporate Data Centre, Education Path on Energy Efficiency and Safety and training centre for electrical workers. The structural features of the new headquarters building such as the high ceiling and wide circulation area also led to more electricity consumption. The total electricity consumption would have been lower if the additional electricity consumption arising from new facilities and structural features is discounted for a like-to-like comparison.

EMSD strives to continuously look for opportunities for energy saving. The electricity saving in 2007/08 was attributable to a number of factors which included installing occupancy sensors in toilets, fine-tuning the occupancy sensors in office areas and common areas to reduce the idle time, carrying out de-lamping in over illuminated area (a total of 832 lighting fixtures were removed in the period between August 2007 and September 2007), and tightening up of house-keeping measures.

A departmental wide energy conservation campaign was launched in June 2007 to raise the energy efficiency awareness of our management and staff. Several simple and effective housekeeping measures were promoted throughout this campaign:

- (i) Adjust the room temperature setting (where there is separate air-conditioning control) to 25.5°C in summer months
- (ii) Switch off all electrical appliances after office hours and avoid leaving the office equipment, computers and printers in stand-by mode
- (iii) Appoint energy wardens to remind colleagues to comply with all housekeeping measures
- (iv) Use 7-day timer switch to automatically switch off equipment after office hours

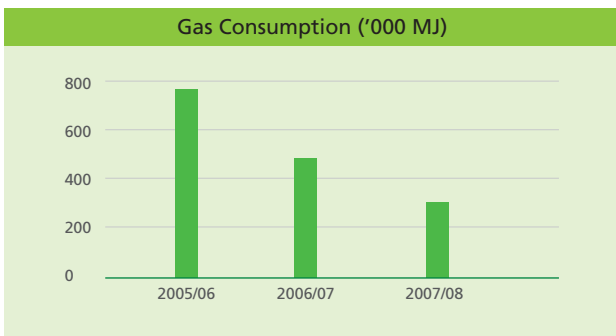


Departmental Wide Energy Conservation Campaign



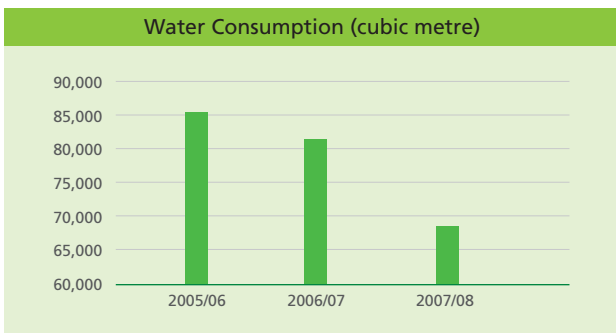
Gas

Towngas used to be the major fuel for hot water supply in the former Caroline Hill headquarters and the Kowloon workshop. There was a drop in the towngas consumption in 2006/07 after relocation of the headquarters to Kowloon Bay as the new headquarters use a mix of heat pumps, electric boilers and solar water heating system for water heating. The Caroline Hill workshop is the remaining major venue using towngas for water heating. The consumption has continued to decline to around 317,000 MJ in 2007/08 with the stepping up of housekeeping measures.



Water

Water is mainly consumed for air-conditioning, gardening, drinking and cleaning. The overall consumption was around 69,000 m³ in 2007/08 covering major venues including Caroline Hill workshop and headquarters at Kowloon Bay, representing a decrease of about 18% compared with that of the previous year. The reduction was attributable to a number of factors, including the cessation of short term usage of the former Caroline Hill headquarters by a few other departments, use of recycled grey water for gardening at Kowloon Bay headquarters, and so on.



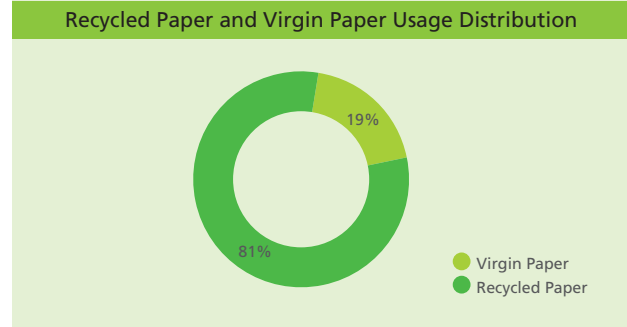
Materials

Materials Used in Offices

Paper

Paper is mainly used for photocopying and printing. We make every effort to reduce our paper consumption,

such as the use of an electronic Document Management System. In 2007/08, paper consumption dropped by 4% on the consumption in 2006/07. Since 2001, we have adopted the extensive use of environment-friendly recycled paper made from recycled fibre. In 2007/08, 81% of our total paper consumption was recycled paper. Use of virgin paper was limited to external documents only and is avoided as much as practicable.



Toner Cartridges

We purchased some 2,800 toner cartridges in 2007/08 and we have followed government initiatives to recycle all used toner cartridges since 2005/06.

Materials Used in Workshops

We recognise that the materials, parts and products used in our everyday operations impact the environment in different ways through their production, use and ultimate disposal. EMSD will work to reduce the use of materials, recondition and re-use them whenever possible in order to sustain resources over the long term. For details of our performance in industrial materials consumption, please refer to the section "Summary of Statistics".

Emissions, Effluents and Wastes

We are aware that our operations produce waste and impact the environment. Our waste management strategy is to maximise material recycling and minimise unavoidable waste generation. Waste is primarily generated from two sources – offices and workshops. The following sections detail our progress in the past 12 months.

Emission factors used in this report
(unless specified otherwise):-

- ☘ CO₂ emission factor for electricity = 0.7 kg/kWh
- ☘ CO₂ emission factor for gasoline = 2.4 kg/litre
- ☘ CO₂ emission factor for diesel = 2.7 kg/litre
- ☘ SO_x emission factor for electricity = 2.1 g/kWh
- ☘ NO_x emission factor for electricity = 1.3 g/kWh

Waste Generated

Waste from Offices

Waste Paper

Waste paper is one of our major items for recycling. Paper is used everyday in our offices, and therefore an effective and efficient channel for collecting and handling waste paper is needed for proper waste management. Waste paper is collected through various collection points and picked up by paper recyclers. In 2007/08, we collected some 17,000 kg of waste paper for recycling.

Toner Cartridges

Used toner cartridges are collected by recycling collectors, refilled and reused. We collected about 3,000 toner cartridges for recycling in 2007/08.

Waste from Workshops

Waste Oil

Waste oil is generated from our workshops while rendering service to our customers, in particular our vehicle maintenance services. Waste oil is collected regularly by registered chemical waste collectors and treated in registered chemical waste treatment facilities. In 2007/08, about 129,000 litres of waste oil were collected for recycling or disposal in accordance with the relevant ordinance.

Spent Mercury Lamps

Spent mercury lamps are collected from offices and workshops by registered chemical waste collectors and

delivered to the Chemical Waste Treatment Centre in Tsing Yi for recycling. In 2007/08, over 107,000 spent mercury lamps were collected and recycled.

Used Rechargeable Batteries

Used rechargeable batteries contain rare metals that can be recovered and reused. We have adopted and implemented a programme launched by the Environmental Protection Department (EPD) to recycle domestic type rechargeable batteries, and, in addition, collect industrial type batteries generated from our operations for recycling. More information can be found in the Summary of Statistics.

Metal Scraps

Metal scraps are valuable natural resources which can be completely recycled and reused without deterioration in their composition during the recycling processes. Most metal scraps generated from our operations such as vehicle maintenance have been collected and recycled. In 2007/08, about 48,000 kg of metal scraps were collected.

Used Vehicle Tyres

Used vehicle tyres arise from our vehicle maintenance services for government vehicles. They are collected and recycled by local waste tyre collectors listed on the EPD's directory. More than 12,000 tyres were collected and another 541 tyres were retreaded for further use on vehicles in 2007/08.

Emissions

Greenhouse Gas Emissions

Greenhouse gas (GHG) emissions are widely acknowledged as a cause of global warming and climate change, and reducing emissions such as CO₂ is one of our biggest challenges. EMSD's greenhouse gas emissions are mainly attributed to the consumption of electricity in our offices and workshops, and transport. In 2007/08, direct emissions from our transport activities amounted to some 1,300 tonnes of CO₂ whereas our electricity consumption gave rise to about 9,000 tonnes of CO₂.

Transport

The use of transport in EMSD operations consumes non-renewable fossil fuels and generates GHG emissions. We have a fleet of around 250 vehicles including lorries, vans, saloon cars and motorcycles to carry out our services, and at the same time maintain over 5,800 government vehicles for our client departments. We have to ensure that the emissions from such activities are reduced to a minimum by good housekeeping, proper vehicle maintenance, reduced use of transport or switching to hybrid vehicles. We now have two hybrid vehicles, which consume 40% less fuel than conventional cars of similar size.