

July 2004

*Towards Triple Bottom Line Reporting*

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# **Environmental Report 2003**





*Ferns are a diverse, highly-evolved group of plants, yet they retain many of the characteristics that were present when plants first ventured out of the sea and onto land millions years ago.*

## Director's Message

Welcome to the Electrical & Mechanical Services Department's Environmental Report 2003.

This is the first report of its kind for EMSD adopting the Triple Bottom Line (TBL) reporting approach. For all those wondering what a TBL reporting is, it is a philosophy that tries to assess organisations' performance not just on environmental performance, but also on economic and social performance in an integrated approach.

We call our report "Towards Triple Bottom Line Reporting" because we have just started to evaluate and report our performance using the TBL approach. There is still a lot of work to defining key indicators, developing measurements and reporting systems, and integrating the TBL into our everyday business. However, we are committed to report our performance in these three dimensions in line with the Global Reporting Initiatives (GRI) requirements in the near future.



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

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## About this Report

This is EMSD's fifth annual Environmental Report. Over the past four years, we focused on reporting our environmental performance. This year, we extend the coverage of our report to include information of our social and economic activities. This enrichment in the scope of the report is a natural step forward, as our ongoing quest for continuous improvement.

*"Towards Triple Bottom Line Reporting"* reflects our initiatives towards evaluating and reporting our contribution and performance in Environmental, Social and Economic outcomes in an integrated approach. We endeavour to report our performance in these three dimensions with reference to the Global Reporting Initiatives (GRI)\* approach in the near future.

The report is based on the operations of EMSD for the calendar year 2003 (unless otherwise specified). The report covers all geographic locations of EMSD including both the Trading Services and the Regulatory Services. For further information regarding our services, you may wish to browse through our EMSTF Annual Report<sup>#</sup> at [http://www.emsd.gov.hk/emsd/eng/about/gp\\_ar.shtml](http://www.emsd.gov.hk/emsd/eng/about/gp_ar.shtml) and Regulatory Services Report at [http://www.emsd.gov.hk/emsd/eng/about/gp\\_ao.shtml](http://www.emsd.gov.hk/emsd/eng/about/gp_ao.shtml).

We would like to take this opportunity to extend our appreciation for your comments regarding the quality and relevance of our previous reports and look forward to your continuous support.

<sup>#</sup>EMSTF - Electrical and Mechanical Services Trading Fund

\* The GRI is an independent institution whose mission is to develop and disseminate globally applicable Sustainability Reporting Guidelines for voluntary use by organisations.

## INTRODUCTION

### **Triple Bottom Line (TBL) Reporting**

The term Triple Bottom Line was first used by the management consultant, John Elkington, in 1997. The philosophy focuses on not just economic benefits but also the environmental and social value an organisation adds and sometimes destroys. At its narrowest, the term "Triple Bottom Line" is used as a framework for measuring and reporting corporate performance against economic, social and environmental parameters. At the broadest, the term is used to capture the whole set of issues and processes that organisation must address to create positive social, environmental and economic values, whilst minimising any harm or damage caused by their activities. Achieving this involves clarity of reporting purpose and taking into consideration of stakeholders' needs - the needs of shareholders, customers, employees, business partners, governments, and the public.

### **EMSD Towards Triple Bottom Line Reporting**

EMSD provides E&M services to a vast range of public facilities and amenities to keep Hong Kong running efficiently and effectively. We recognise that our contribution is not only driven by consistent policies, but also our aspiration towards continuous improvement. This is reflected in how we strived for attainment of ISO 9001 Corporate Certificate to the successful integration of the three management systems (ISO 9001, ISO 14001 and OHSAS 18001) into an "Integrated Management System" at all levels. As a

progressive organisation, it is our value to contribute to sustainable development by taking responsibility for our social, environmental and economic outcomes. This is EMSD's first report adopting TBL approach. We believe there is still a lot of work to be done in defining key issues, developing measurement and reporting systems, and integrating the TBL into our everyday business. We see this report as a proactive step towards GRI reporting.



## About EMSD

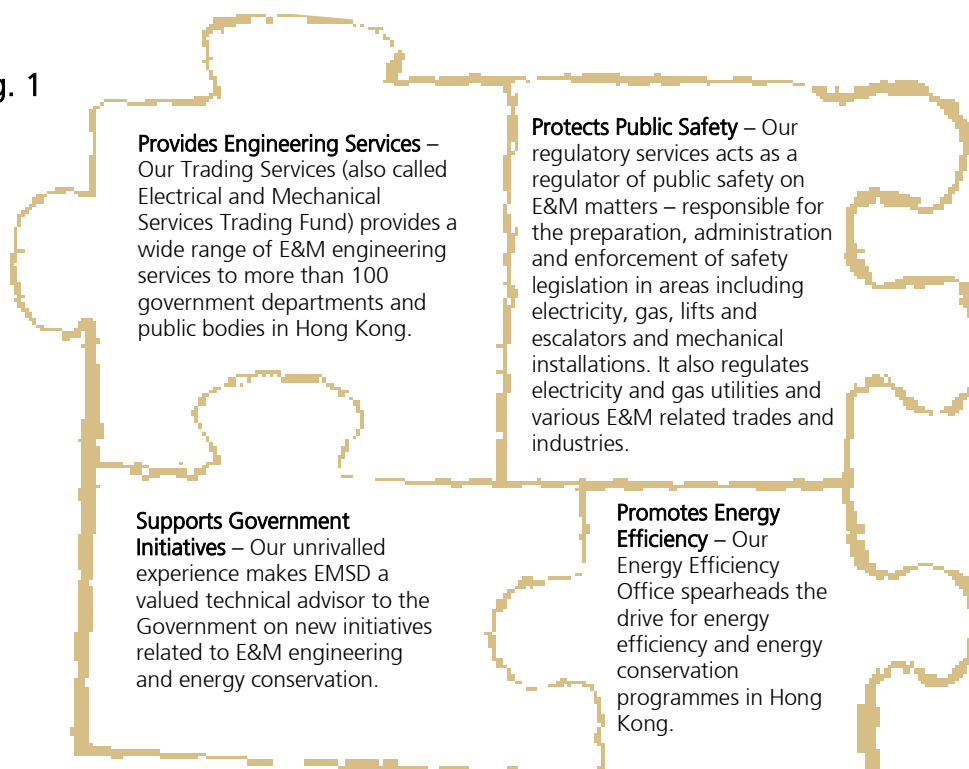
### Our Role

At the end of 2003, EMSD has around 5,000 employees within an operating structure along two lines of services: Regulatory Services and Trading Services, to meet the needs of Hong Kong in four major areas (figure 1).

The **Regulatory Services** arm operates a number of divisions specialising in electrical safety, mechanical safety, gas safety, energy efficiency, energy conservation and utilities monitoring. Its mission is to enhance the safety and 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.

The **Trading Services** arm operates a number of Strategy Business Units, each catering for the needs of a specific group of government departments and public sector bodies. Its mission is to give our community a better quality of life by providing our customers and the public with total engineering solutions and service excellence.

Fig. 1



**INTRODUCTION****Vision, Mission and Values****Regulatory Services****Vision**

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

**Mission**

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.

**Values**

Expertise  
Integrity  
Reliability  
Commitment

**Trading Services****Vision**

To be the most preferred E&M engineering service provider in Hong Kong.

**Mission**

To give our community a better quality of life by providing our customers and the public with total engineering solutions and service excellence.

**Values**

Customer focus  
Caring  
Integrity  
Service excellence  
Commitment



## Governance

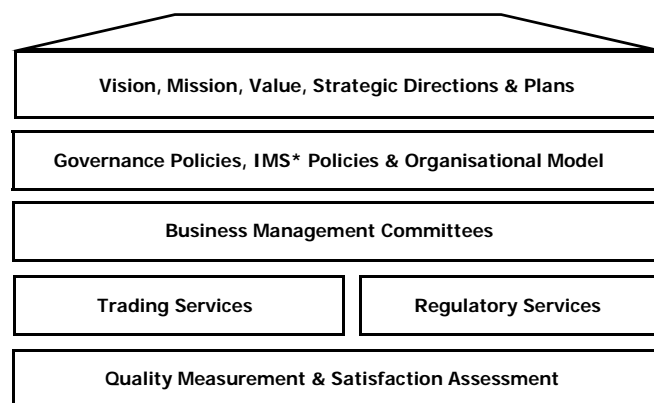
EMSD is a government agency with clearly defined organizational structure. Various legislations, policies, circulars and instructions are in place to govern the organizational behaviour. The following statutes and agreement are of major importance to the operation of our businesses:

- Public Finance Ordinance
- Trading Fund Ordinance
- EMSTF Framework Agreement

In addition to the relevant policy bureaux to which EMSD is accountable, the Trading Services operation is also subject to independent monitoring by the LegCo, the Ombudsman and the Director of Audit.

## Management Framework

In the diagram below, we have assembled the key elements that define and guide the management of EMSD.



*\* IMS - Integrated Management System*

## Policies and Systems

As we seek to meet and exceed the expectations of our customers, our staff, and the community at large, we are committed to the following policies:

**Quality** – achieving service excellence and total customer satisfaction through the implementation of Total Quality Management;

## INTRODUCTION

**Human Resources** – enhancing corporate core competencies and business performance through continuous development of human resources;

**Safety and Health** – achieving and maintaining a high standard of safety and health at work;

**Environment**– building a better environment through an ongoing environmental conservation, protection and improvement programme.

## Our Stakeholders

We believe that a government agency like EMSD exists to serve four key stakeholder groups: our client customers, policy bureaux, employees and the community. Other stakeholders are:

- suppliers and contractors
- industry and business organisations
- professional and trade associations, and etc.

## Communication with Stakeholders

EMSD recognises the importance of consistent two-way communication with our stakeholders. For this reason we are keen to maintain constant dialogue as a means to promulgate, listen and learn from our client customers and the community who have a direct and indirect interest in the way we operate. Our aim is to promote a genuine understanding of how we operate and of what we contribute through our services. By the same token, we also want to understand how we are perceived and expected. We have already established communication channels with a wide range of groups and individuals, so that we can solicit their inputs on social, environmental, energy, regulation and safety issues. Such communication mechanism includes customer liaison group, customer satisfaction survey, staff satisfaction survey, staff consultative committee, consultation with the profession and the trades, and E&M safety and Energy Efficiency publicity campaign. In the future, we shall include more information of their perceptions and expectations of our sustainable performance in this report.

# Environmental Performance



## ENVIRONMENTAL PERFORMANCE

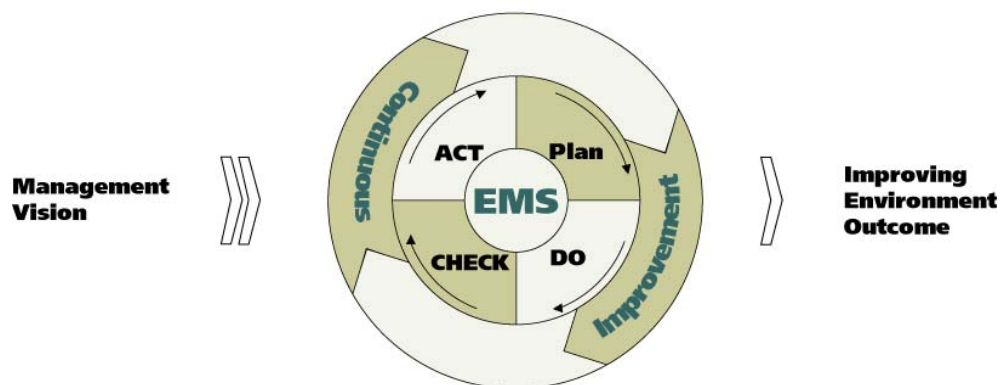
### Environmental Responsibility

To conserve the environment, our first priority is to avoid creating environmental pollution to reduce its impacts. We are aware that our operation can impact the environment whilst rendering services to some extent. We will work to reduce impacts where they are created, enhance the environment where we operate and conserve resources over the long term.

### Environmental Management System

To live up to our aims of protecting, conserving and improving the environment, we need an efficient and effective Environmental Management System (EMS) that can take care of a broad range of activities throughout the department. We have a decentralized management framework – each division is responsible for ensuring that its operations comply with the ISO 14001 standard, and are conforming with the local legislation in Hong Kong.

Fig. 2 - The EMS in EMSD is based on P-D-C-A management cycle



### *Benchmarking our performance*

EMSD has adopted the International Standards Organisation (ISO 14001) standard as the basis of our Environmental Management System (EMS). Implementation of EMS commenced in mid-90's. In 2000, we became the first government agency to attain the ISO 14001 Corporate Certificate. In 2002, following the implementation of Integrated Management System (IMS), the EMS was rationalized to encompass 10 distinct but coherent systems at divisional level.

## Audit Mechanism

We have a pool of over 100 trained ISO 14001 internal auditors to verify the effectiveness of the EMS in each Division. Our EMS is also subject to independent external certification body's surveillance audits once every six months to ensure its full compliance to ISO 14001 standard requirements. In year 2003, a total of 12 environmental internal audits were conducted within EMSD in conjunction with the IMS internal audit.

## Environmental Impacts from Cradle to Grave

The following figure highlights our key material, energy and resource flow and impacts.

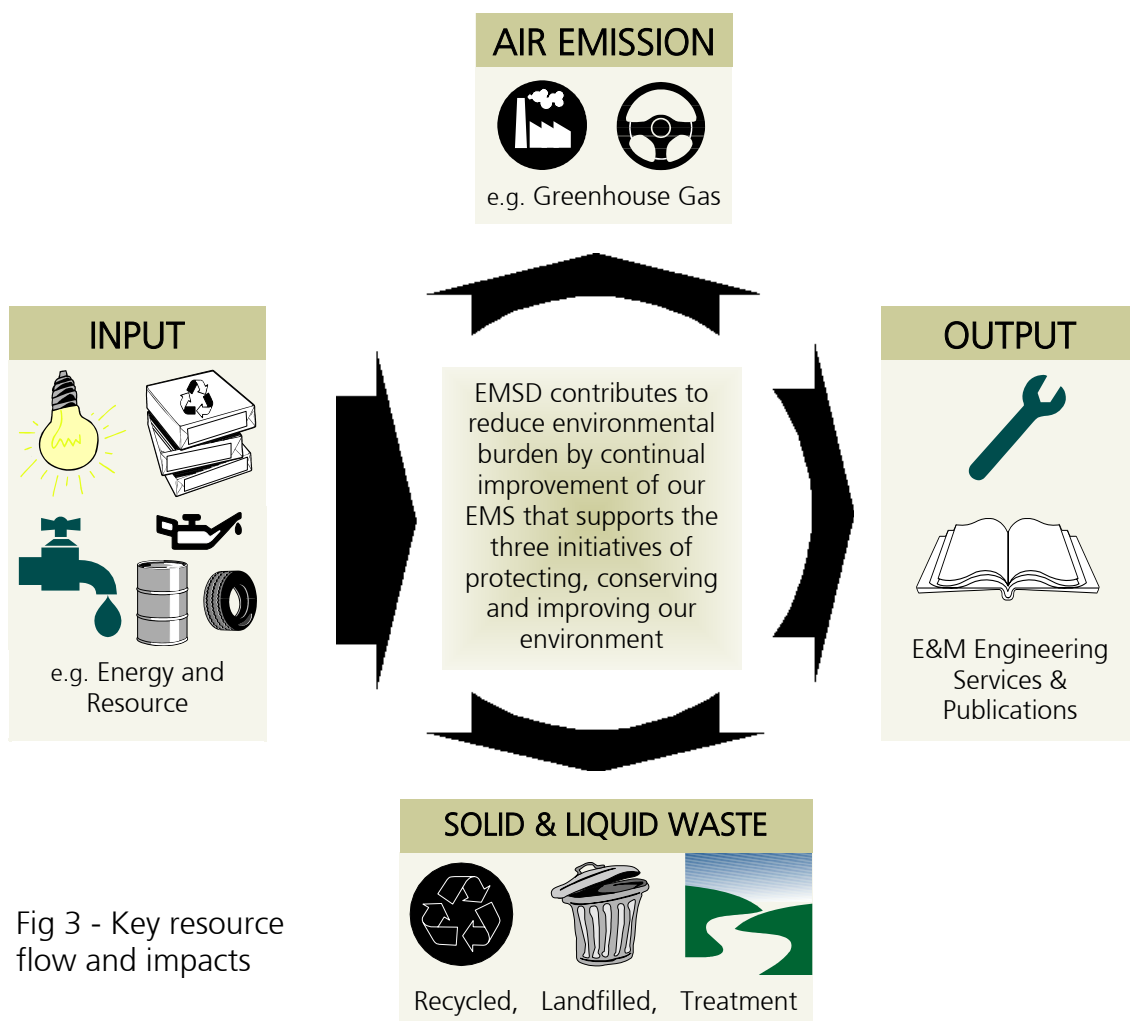
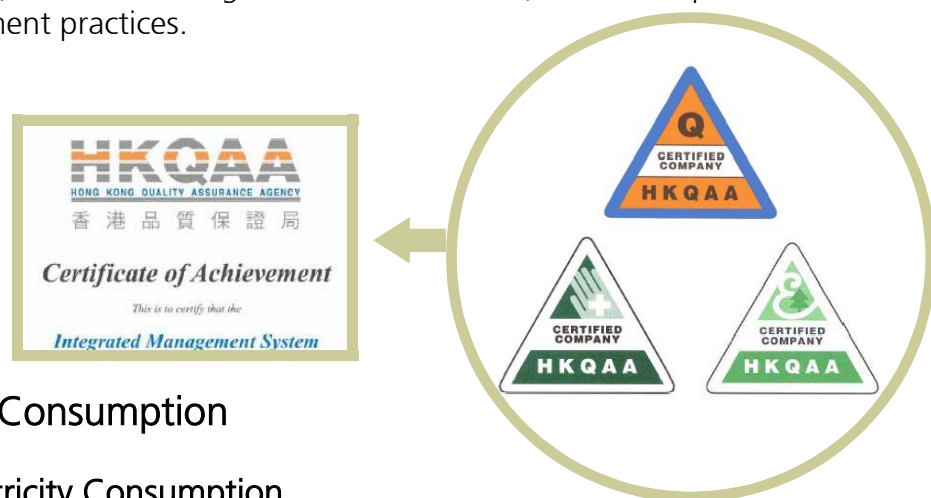


Fig 3 - Key resource flow and impacts

## ENVIRONMENTAL PERFORMANCE

### Integrating Environmental Management System with other Management Systems

We bring together the quality, environment, and health & safety systems into a single Integrated Management System (IMS), which gives synergy among these systems, while allowing rationalization, reduction of duplicated processes, better management of activities, and adoption of better management practices.



### Energy Consumption

#### Electricity Consumption

During 2003 we used a total of 8.49 GWh of electricity, while consumption per staff in our major offices (Caroline Hill Headquarters and Kowloon Workshop) continues to decline from 3,358 to 3,244 kWh/staff. Discounting the factor of new regional venues, the total electricity consumption was 8.35 GWh. This represents roughly 1% reduction on our 2002 consumption despite a substantial increase of fresh air in-take by the air-conditioning system following the outbreak of SARS. Most of this reduction occurred in our Caroline Hill Headquarters and Kowloon Workshop. These savings were attributed to an increase in awareness of energy conservation among our employees. Measures to reduce electricity consumption include:

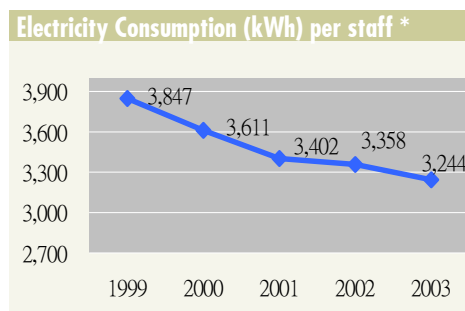
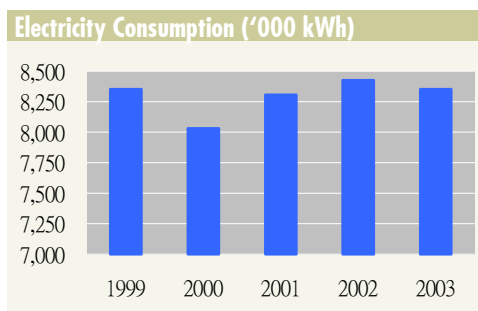
- Remove and/or turn-off unnecessary lighting
- Turn-off unnecessary lighting during lunch time
- Use natural ventilation or fans instead of air-conditioning during the cool seasons.
- Turn-off computers and office equipment during lunch time and after office hours.

#### Commitments

A 6% reduction of electricity consumption by fiscal year 2006-07 (on accumulative basis with FY 2002-03 as the baseline).

## New Venues

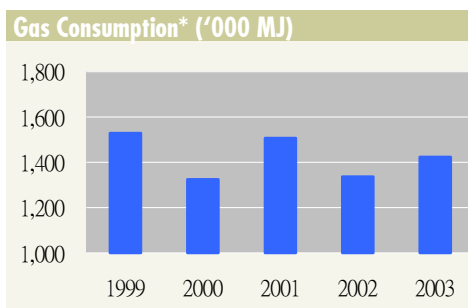
A few new divisional offices were established at the end of 2003. The electricity consumption of these new venues has been captured since their opening and a new baseline would be formulated for future monitoring. In 2003, the total electricity consumption of these offices was approximately 130,000 KWh.



\* in Caroline Hill Headquarters and Kowloon Workshop.

## Gas Consumption

Apart from electricity, we also use town gas for water heating. In 2003 the performance was out of our original expectation. It was attributed to the need of extra hot water for cleansing of workshops, equipment and facilities, and showers taken by staff after working in high-risk environment during the outbreak of SARS.



\* in Caroline Hill Headquarters and Kowloon Workshop.

## Promoting Energy Efficiency

Following the encouraging response to the T5 lighting system, EMSD launched another pilot project in Kowloon Bay Indoor Games Hall using induction lighting technology. Four sets of luminaires each equipped with two 150W induction lamps and electronics ballasts were used to replace the original metal halide luminaires inside a squash court. Results of the pilot project revealed that the new induction lighting achieved a saving of about 25% in power consumption and a 50% increase in average illumination. Consideration is being given to convert more metal halide lamps to induction lamps.

## ENVIRONMENTAL PERFORMANCE

### Other Highlights:

- A new Performance-based Building Energy Code was introduced in April 2003. It takes a total-energy-budget approach and allows more flexibility and innovative designs that are not credited under the existing four codes of air-conditioning, lighting, electrical, and lift and escalator systems.
- In tandem with government initiative, EMSD launched a one-year award scheme aimed at encouraging government bureaux and departments to practise energy conservation and efficiency, and to recognise those who demonstrate quantifiable energy savings and best practices.
- The Energy Efficiency Labelling Scheme was extended to laser printers and dehumidifiers in 2003, bringing the total number of product categories under the scheme to 11. *(for details of the scheme please visit our website at <http://www.emsd.gov.hk/emsd/eng/pee/eels.shtml>)*
- Since the expansion of the Cooling Tower Scheme in 2003 to cover 54 designated areas in Hong Kong, a total of 70 applications were received involving a total floor area of approximately 2.2 millions square meters. If all these cases materialise, the electricity consumption and green house gas emissions would be reduced by about 2.5 million kWh and 18,000 tonnes of carbon dioxide respectively.
- LPG Vehicle Scheme – By the end of 2003, there were about 18,000 LPG taxis and 700 LPG light buses on the road, 46 filling stations in service and more than 900 trained mechanics registered with EMSD. Resulting from the implementation of the LPG Vehicle Scheme, the particulate and nitrogen oxides levels on the street have dropped by 13% and 23%\* respectively since 1999.

\* Chapter 5 - Air, "Environment Hong Kong 2004" by Environmental Protection Department

## CASE STUDY

### Trial of Hybrid Vehicle - less fuel and less emission

As part of our goal to reduce energy use and greenhouse gas emissions, our Vehicle Engineering sub-division tested an electric/petrol hybrid vehicle last year. The trial aimed to assess whether the hybrid vehicle was suitable for day-to-day use in Hong Kong.



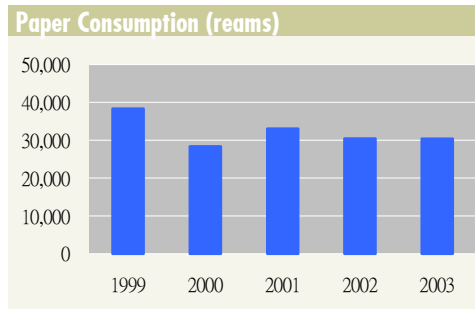
The hybrid vehicle is rated ultra low emission vehicle in USA. EMSD used the car in a variety of traffic and road conditions, and evaluate its condition upon the end of the trial. Consideration is being given to acquire a small fleet of hybrid vehicle, given its environmental contribution.



## Materials Consumption

### Paper Consumption

In the reporting period we used 30,349 reams of paper, which is equivalent to approximately 6 reams per staff member. This represents a 0.1% reduction from 2002. We believe more can be done to reduce the usage of paper such as the introduction of electronic document management system and staff awareness promotion. We have adopted widespread use of environmental-friendly recycled printing paper made from recycled fibre since late 2001.



## CASE STUDY

### Vehicle Refurbishment - Cars now stay on road better and longer

While every vehicle has a planned service life, some may have to stay running longer on the road before they reach their end-of-life expectancy due to budgetary or administrative constraints. Since last year, we have launched a quality vehicle refurbishment programme to help customers keep their vehicles running on the road. Under this refurbishment programme, our expert engineers and technicians in EMSD would perform a thorough inspection and recommend the most appropriate refurbishment required for the vehicles. They would also guarantee the refurbished vehicles' safety, reliability and roadworthiness for another two years. This does not only help defer the vehicle replacement programme by retaining those vehicles which have not yet reached their end-of-life expectancy, but also minimizing the environmental impacts brought about by aging vehicles such as air emission, noise pollution and poor fuel consumption efficiency.



## ENVIRONMENTAL PERFORMANCE

### Electronic Document Management System

EMSD has started a trial run of its electronic document management system in 2003 in one of the Strategic Business Units. The result was satisfactory and consideration to extend the system to other divisions has been approved by management. This means staff no longer have to print and file hard copies on a variety of documents. As our staff gain confidence in dealing with electronic information, we expect paper consumption to fall.

### Other Industrial Resources

We recognise that materials and products used in our everyday operation impact the environment in different ways through their production, use and ultimate disposal. We have promoted material re-use and re-conditioning in our vehicle service. We shall promulgate to other service sectors to adopt similar philosophy in their own activities. In this report we shall focus on the following key materials or resources. For details, please refer to the section of "Summary of Statistics".

- Refrigerant
- Paint & solvent
- Lubrication oil
- Grease
- Industrial gas
- Tyre
- Battery electrolyte

### Water Consumption

Our water consumption mainly relates to air conditioning, shower, sink, pantry and workshop cleansing. Consumption data was available from two sites only, Caroline Hill Headquarter and Kowloon Workshop. The overall water consumption in 2003 was more than expected. This is possibly attributed to an increased frequency of cleansing in workshop and office, showers taken by staff after working in high-risk environment during the outbreak of SARS in 2003.

### Waste, Emission and Recycling

Over the years, EMSD has handled and disposed considerable amounts of industrial and chemical wastes in an environmentally responsible manner. Collected items are carefully stored and transported before being disposed of in accordance with statutory requirements.

### Other Highlights:

- Recycling of spent mercury lamps – we have taken the initiatives to set up over 10 collection points in 2003 for temporary storage of spent mercury lamps and subsequent delivery to the mercury recycling plant in Tsing Yi. From available data, we estimated that over 50,000 spent mercury lamps were handled under such manner in 2003.
- We provide maintenance service for a fleet of over 5,000 government vehicles. We play a significant role in ensuring their emissions are reduced to a minimum. The number of diesel vehicles in the Government vehicle fleet has decreased from 2,218 in 1999 to 1,174 in 2003.

## CASE STUDY

### New Headquarters in Kowloon Bay

EMSD will be relocated to the Kai Tak area in early 2005. A task force has been established to oversee the project from the design stage to ensure full compliance with regulatory requirements as well as



making the new headquarters a showcase of the latest E&M technologies and best practices in energy efficiency. Various new and renewable energy technologies including photovoltaic panels, wind turbine, binary ice storage air-conditioning system and daylight pipe are incorporated in the design.

## ENVIRONMENTAL PERFORMANCE

### Key Results in 2003

Main Objectives	Targets	Results in 2003
<b>Protecting the Environment</b>	<ul style="list-style-type: none"> <li>• Reduce vehicle emissions.</li> <li>• Sustain an effective collection and recycling system.</li> <li>• Reduce paper consumption.</li> <li>• Expand the pilot spent fluorescent lamps collection system into other Strategic Business Units of EMSD.</li> </ul>	<ul style="list-style-type: none"> <li>• The number of diesel vehicles in Government vehicle fleet continued to decline .</li> <li>• Collection and recycling system was well maintained and sustained throughout the year.</li> <li>• Paper consumption showed a slight downward trend.</li> <li>• Estimated over 50,000 spent mercury lamps were collected.</li> </ul>
<b>Conserving the Environment</b>	<ul style="list-style-type: none"> <li>• Reduce energy consumption</li> <li>• Promote and implement energy efficiency labelling schemes (EELS) for household appliances and office equipment.</li> <li>• Promote and implement energy management opportunities (EMO).</li> <li>• Promote and implement the Hong Kong Energy Efficiency Registration Scheme for Buildings (HKEERSB).</li> </ul>	<ul style="list-style-type: none"> <li>• Electricity consumption reduced by approximately 1%. Town gas consumption was higher than expected due to the outbreak of SARS.</li> <li>• The Energy Efficiency Labelling Scheme was extended to laser printers and dehumidifiers bringing the total number of product categories under the scheme to 11.</li> <li>• New energy efficiency technologies were applied for EMO such as binary ice, variable speed drive, heat pump, T5 lighting and induction lighting.</li> <li>• More than 100 certificates issued.</li> </ul>
<b>Improving the Environment</b>	<ul style="list-style-type: none"> <li>• Establish proper measures to reduce air, soil and water pollution in our housekeeping.</li> <li>• Support cleaner fuel options for vehicles.</li> <li>• Promote energy efficiency of air-conditioning systems such as the wider-use of water-cooled systems.</li> <li>• Support renewable energy applications</li> </ul>	<ul style="list-style-type: none"> <li>• No abnormality reported in 2003.</li> <li>• There were about 18,000 LPG taxis and 700 LPG light bus on the road, 46 filling stations in service and more than 900 trained mechanics registered with EMSD.</li> <li>• The Cooling Tower Scheme was expanded to cover 54 designated areas, a total of 70 applications were received involving a total floor area of approximately 2.2 millions square meters.</li> <li>• Apart from solar PV technologies, EMSD embarked on a field-based wind measurement programme to explore the feasibility of utilising wind energy at specific sites.</li> </ul>

# Social Footprint



## SOCIAL FOOTPRINT

### Social Responsibility

In EMSD we trust our long-term success depends on how well we work with our people, including employees and the community. Treating them with respect and adhering to the basic principles of honesty and fairness creates a positive social environment in EMSD.

### With Employees

EMSD, in particular its Trading Services, must continuously enhance its capabilities and competitive strengths. Our employees are essential to building a strong and capable organisation. We support employees in pursuing learning and development opportunities that would eventually enhance their future contribution to the organisation. For example, we encourage our staff to set up specialist groups to nurture a self-learning culture and create value and business potential through knowledge-synthesis activities. As at the end of 2003, we have around 5,000 employees, and 287 of them have minor disability.

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#### *Benchmarking our performance*

In gauging the performance of our management we consider feedback from our staff. We have appointed an independent research specialist to conduct staff satisfaction survey in alternative year since 1997. In the last survey, a total of 4,985 questionnaires were sent to staff in the Trading Fund and Regulatory Services at senior engineer rank and below,

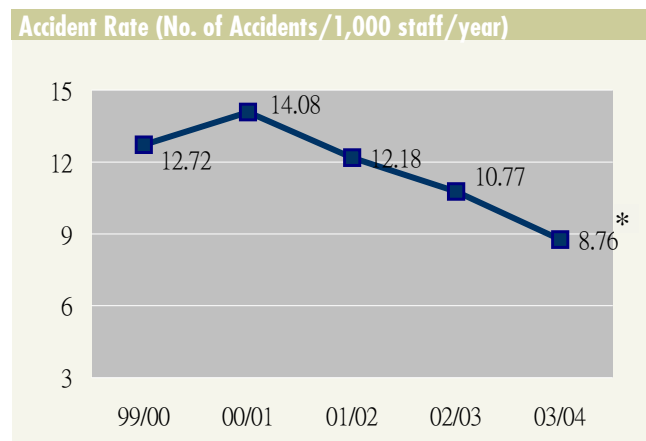
In the survey, the overall satisfaction of staff working at EMSD is measured using a 10-point rating scale. The average overall staff satisfaction rating in 2003 year was 6.5. The rating improves significantly by 0.5 when compared with that obtained in the survey in 2001.

## Maintaining a Healthy and Safe Work Environment

At EMSD we take a proactive approach to Occupational Health and Safety (OHS) . Our policies and infrastructure help ensure that a high standard of OHS in the workplace can be achieved and maintained throughout the department.

Significant aspects of our approach are reflected in our OHS policy which include:

1. To provide and maintain a safe and healthy working environment and work systems for all our staff, and appropriate protection to other people who may be affected by our works.
2. To observe all statutory and contractual requirements for safety and health, relevant standards and codes of practice, and relevant recommendations issued by safety and health authorities.
3. To provide adequate resources for implementing the safety and health policy and the safety plan, including the provision of necessary information, staff training and supervision.
4. To apply the safety and health policy to all our staff and contractors.
5. To keep the policy under constant review, to ensure that it is effective and up-to-date.

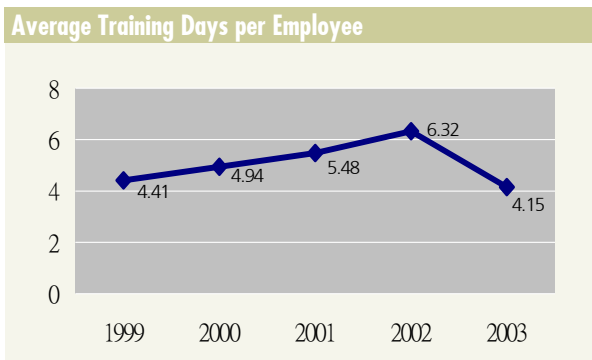


\* *provisional*

## SOCIAL FOOTPRINT

### Providing Training and Development

Staff training and development has always been recognized as one of the important vehicles of change to help EMSD sail through the challenges posed by the Trading Fund operation and ever-rising public expectation at the regulatory fronts. Over the years, we have been taking a business approach to Human Resource Development (HRD), training needs are analysed based on projection of business trends and customer/community needs, and we tailor our training programmes accordingly. Our objective is to ensure that our customers and the public at large are the ultimate beneficiaries of our Training and Development investments.



The chart on the left shows the average training-days per staff in EMSD from 1999/2000 to 2003/04. (a decline in 2003 was largely due to the outbreak of SARS)

### Youth Employment

To support government's social initiative, EMSD participates in the Government Youth Work Experience and Training Scheme providing short-term employment for a period of 6-12 months for youth aged 15-24 with below-degree education attainments. The scheme enables EMSD to help enhance their work skills, experience and credentials to brighten up their employment prospects. Since the scheme was first launched in July 2002, a total of 39 young people were recruited, 22 of them completed the scheme in 2003. Over 235 man-months on-the-job engineering training were provided for them.

#### Commitments

The management and staff of the Electrical and Mechanical Services Department are committed to enhancing corporate core competencies and business performance through the continuous development of human resources.



## Graduate Trainee Recruitment

To help ensure that Hong Kong has adequate trained engineers to meet the future engineering development needs, the department has operated an Engineering Graduate Training Scheme for over 30 years. In year 2002-03 we recruited 27 graduates in the areas of electrical, mechanical, electronic, building services and information technology.

## Participating in the Community

We are proud of our staff's community involvement, believing that this is what our employees want and expect of us.

Examples of our volunteering activities in 2003 include:

- Tuen Mun Yan Oi Tong Volunteer Work Activities
  - Cleansing Services and Maintenance of Domestic Appliances for Elderly in On Ting Estate, Waldorf Garden, Tai Hing Estate
  - Yan Oi Tong Spring Gathering and Fun Day for Child and Elderly
  - TVB Yan Oi Tong Volunteer Work Activity
- The Solar Cart Race
- St. James' Settlement Volunteer Work Activities
- Volunteer Movement - Knitting Charity
- Civil Service Volunteer Work Programme
- Charity Walk for Po Leung Kuk



- Walk for The Community Chest

## Public Education and Awareness

As a key role of EMSD, we work closely with the community to provide a regulatory framework to ensure public safety in the areas of electrical, mechanical and gas. We are also actively involved in promoting energy efficiency. To foster public awareness and reinforce



**SOCIAL FOOTPRINT**

safety practices within the community, we take public education as an important aspect of our activities. We convey the message to the community through a number of different channels including publications, promotional and advertising campaigns, posters, carnivals, school visits, and talks and seminars.

**CASE STUDY****Outbreak of SARS**

Undaunted by working in high-risk environments, our dedicated staff conducted many challenging tasks for the customers and the public. These included, for example, modification of the ventilation systems at hundreds of wards and operating theatres in hospitals, with reference to recommendations of the World Health Organisation and US Centres for Disease Control and Prevention requirements in terms of negative pressure and fresh air supply, as well as modification of medical equipment for SARS patients. Other tasks included providing support to the Department of Health in the installation of thermal scanning systems at borders and technical support to World Health Organisation during investigation in Amoy Garden. Unfortunately, three frontline staff contracted SARS in the course of work during the early stage of outbreak, but all have recovered. Despite the risks of SARS, staff morale and the commitment to serving the public in times of crisis have never been stronger.



# Economic Footprint



## **ECONOMIC FOOTPRINT**

### **Financial Responsibility**

The service provider arm (Trading Services) of EMSD operates with prudent financial principles. It strives to operate efficiently and effectively to deliver value-for-money service to customers, and provide satisfactory returns to shareholders. The regulatory arm (Regulatory Services) seeks funding support from the Administration Budget to carry out Government's objectives and initiatives.

### **Alignment with Annual Report**

To avoid duplication of information, complete information on Trading Services' financial performance is available in the EMSTF Annual Report 2002/03 . This report provides an overview of our economic development performance.

### **Business Diversity**

EMSTF continually seeks and considers opportunities to diversify into fields that will consolidate and expand the business, providing additional revenues to sustain the organisation into the future. Our new initiatives such as IT service, data center service, energy management opportunities (EMO) service and IAQ monitoring service are developed around customer needs, delivering services that not only support their business but help enhance their productivity and efficiency at the same time.

### **Productivity Improvement**

We launched Integrated Services in year 2002 to merge different engineering disciplines into a single integrated engineering team, thus providing one-stop convenience to customers. The scheme has not only enhanced overall satisfaction and provided cost savings for our customers, but delivered environmental values by eliminating repetitive work and reducing wastage.

### **Specialist Groups**

To enhance our capability to capitalise on business potential from technological development and promote self-learning culture, we have set up Specialist Groups to foster collaboration among staff for knowledge synthesis

and knowledge sharing. Under this programme, staff voluntarily forms interest group with an officer at D1 level or above as sponsor and participate in the group that coordinate knowledge synthesis efforts with one another. In addition to synthesis of new knowledge, these groups will also work as a team to provide expert advice and service to customer, and help EMSD remain competitive within the relevant business environment.

## Process Improvement

The Work Improvement Teams (WITS) and Business Process Improvement Teams (BPI) are an important part of our culture to continuously review and improve work processes throughout EMSD. As at December 2003, we have a total of 91 teams generating over \$2.8 millions of savings in recurrent expenditure for EMSTF.



# Summary of Statistics



## SUMMARY OF STATISTICS

### MATERIALS

<i>Office Resources</i>	2003	2002	2001	2000	1999
Paper (ream)	30,349	30,387	33,041	28,355	38,323
Envelope (no.)	435,664	346,510	327,554	233,522	355,161

*The paper total is obtained by 2 x A3 size + A4 size.*

*A ramp-up of publicity campaigns increased the amount of envelope consumption.*

<i>Industrial Resources</i>	2003	2002	2001	2000	1999
Paint & solvent (ℓ)	9,137	11,526	35,272	31,580	31,044
Kerosene (ℓ)	324	--	5,717	918	--
Lubrication oil (ℓ)	90,682	144,660	153,130	139,384	124,849
Grease (kg)	760	1,579	802	1,732	1,362
Refrigerant (kg) (e.g. R22 & 134a)	19,357	23,849	20,490	30,509	592
Industrial gas (m <sup>3</sup> ) (e.g. Oxygen, Argon & Acetylene)	2,577	2,361	3,721	2,650	1,798
Sulphuric acid*	--	--	435	4,855	5,680
Battery electrolyte (ℓ)	1,882	2,924	6,370	860	--
Tubeless tyre (no.)	9,886 <sup>#</sup>	9,405	23,936	11,488	10,811
Outer cover tyre (no.)	2,026 <sup>#</sup>	1,743	6,182	2,859	4,122
Inner Tube (no.)	733	1,805	322	534	1,160

*\* Increase in use of battery electrolyte instead of sulphuric acid*

*# Fluctuation due to operational needs*

### WATER

	2003	2002	2001	2000	1999
Water (m <sup>3</sup> )	134,603*	93,335	92,525	103,535	84,216

*\* n Caroline Hill Headquarters and Kowloon Workshop; an increase in consumption of water was largely caused by the outbreak of SARS.*



## ENERGY

	2003	2002	2001	2000	1999
Electricity* (kWh)	8,486,456*	8,424,778 (11,634,922)	8,305,677 (11,516,845)	8,030,337 (10,370,343)	8,352,099 (10,681,557)
Towngas# (MJ)	1,528,464	1,324,416	1,506,624	1,336,176	1,422,816

The electricity consumptions were readjusted following a recent review in which a shared venue had been excluded from the calculation. The figures in bracket represent the electricity consumptions reported in the previous reports. Discounting the factor of new venues, the electricity consumption in 2003 is about 1% less than the previous year or 8,352,413 kWh.

Despite the relocation to the new headquarters in 2005, our objective of reduction of electricity consumption shall be maintained. The new building characteristics would be so much different from our existing offices; therefore we are considering setting up additional objective(s) to monitor our energy performance. The attainment of this objective(s) shall be measured by means of indices calculated in proportional to usable floor areas or full-time employees working in the new Headquarters.

# In Caroline Hill Headquarters and Kowloon Workshop; an increase in consumption of town gas was largely caused by the outbreak of SARS.

## EMISSIONS, EFFLUENTS, AND WASTE

<i>Office Waste Recycling or Disposal</i>	2003	2002	2001	2000	1999
Waste paper (kg)	32,256	27,220	26,898	17,362	5,891
Toner cartridges* (no.)	1,594	1,355	1,276	173	--
Used batteries (kg)	3,812	3,335	3,122	599	--
Room cooler (no.)	1,114	1,316	1,470	1,065	1,105
Unserviceable computer (no.)	607	567	347	213	120
Refrigerator (no.)	806	677	335	296	252

\* Some particular types only

<i>Industrial Waste Recycling or Disposal</i>	2003	2002	2001	2000	1999
Spent vehicle batteries (no.)	4,200	5,200	4,880	3,920	3,696
Metal scrap (kg)	36,040	59,110*	56,097*	45,401	47,805
Waste oil (ℓ)	146,300	169,857	236,750	142,387	155,500
Condemned vehicle (no.)	519	1,141	731	842	846
Used vehicle tyre (kg)	469,440	507,420	440,910	370,485	442,350
CFC refrigerant (kg)	2,041	3,259	2,089	1,955	1,000,000#
Damaged traffic bollard (no.)	5,446	4,350	4,040	4,225	3,920
Other chemical wastes (kg) e.g. Oily wastes	17,672	16,385	30,040	21,448	--

# aggregated amount up to 1999

\* Increase in activities

## SUMMARY OF STATISTICS

### TRANSPORT

<i>Vehicle by Engine Type</i>	2003	2002	2001	2000	1999
Petrol	4,376	4,475	4,667	4,743	5,330
Diesel	1,174	1,238	1,578	1,662	2,218
LPG	13	20	5	2	--
Electric	--	--	--	--	1

*The above figures represent vehicles which are maintained by EMSD*

### EMPLOYMENT

	2003/04	2002/03	2001/02	2000/01	1999/00
Number of incidents per 1000 staff (reportable)	8.76*	10.77	12.18	14.08	12.72
Customer satisfaction (out of a total score of 8)*	-	5.77 <sup>#</sup>	-	5.42	5.19
Training (average training days/staff)	4.15	6.32	5.48	4.94	4.41

*# bi-annual survey*

*\* provisional figures*

## VERIFICATION STATEMENT

### Objectives

Hong Kong Productivity Council (HKPC) was commissioned by the Electrical and Mechanical Services Department (EMSD) to verify the Department's Environmental Report 2003 (hereinafter the "Report"), which covers the environmental performance and information on social and economic aspects during the calendar year 2003. The objectives of HKPC's verification work are to:

- Assess whether the selected statements and data presented in the Report are accurate;
- Assess whether the data management system used to prepare the Report is reliable; and
- Provide recommendations for future reports.

### Approach

Our verification procedures<sup>1</sup> comprised a review of the Report, selection of a representative sample of statements and data and interviews with EMSD's personnel involved in collecting, analysing and presenting information in the Report. During the interviews, the documented supporting materials relating to the selected statements and data were explained to and examined by our consultant.

### Conclusions

Based on our work completed, we consider that the statements and data selected for the purpose of verification are accurate and reflect a fair account of EMSD's management practices and environmental achievements. The data management system used in relation to the selected data is considered to be effective.

### Observations and Recommendations for Future Reports

EMSD is commended for expanding and continually improving its reporting process to include information on its social and economic aspects using the triple bottom line approach, and committing to reporting its environmental, social and economic performance using the Global Reporting Initiatives Sustainability Reporting Guidelines (GRI) as reference in preparing future reports. In addition, we congratulate EMSD on continually improving its environmental performance. It is further encouraged that EMSD considers the following in the preparation of its future reports:

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<sup>1</sup> It is important to note the following limitations of our verification work:

- We have not provided verification over all contents of the Report, nor have we undertaken work to confirm that all relevant issues are included.
- We have not provided verification on previous years' data, nor the economic data contained in EMSTF Annual Report 2002/03.
- We have not performed work on the maintenance and integrity of information in the Report published on the EMSD website.

- To further enhance the report content with respect to readability through inclusion of more specific statements and data and presenting them in appropriate context;
- To further utilise and expand the existing stakeholder engagement mechanisms in order to better understand and respond to the stakeholders' information needs and subsequently further enhance the scope of the report;
- To set and include objectives and targets in future reports that provides framework for measuring the Department's improvement progress from year to year. It is further encouraged that such objectives and targets extend beyond the current environmental improvement programmes and focus on achieving the Department's broader improvement strategy; and
- To formulate and implement a programme on the progressive adoption of GRI in the Department's reporting process in the future.



K L Tsang  
Technology Services Manager  
Environment & Product Innovation  
Hong Kong Productivity Council

30<sup>th</sup> July 2004

## Feedback Form

Thank you for reading our Environmental Report 2003. To help us improve the future editions of our Environmental Report, we would be grateful to have your comments:

1. Which aspect of the report do you find most informative?

	Inadequate		Acceptable		Very Informative
	1	2	3	4	5
a. About this Report	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Introduction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Environmental Performance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Social Footprint	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Economic Footprint	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Summary of Statistics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Does the report enable you to understand more about EMSD's performance on environmental issues?

Yes	No	No Comment
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Overall, how would you rate our report?

Poor	Good		Excellent	
1	2	3	4	5
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. Other comments and suggestions, please specify.

5. How can we convey our feedback to your comments/suggestions? (Please provide email or contact detail for us to follow up.) - Optional

Please return feedback form to:  
 Quality and Research Manager  
 98 Caroline Hill Road, Causeway Bay, Hong Kong  
 Fax: (852) 2882 1574  
 Email: QRSD@emsd.gov.hk



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