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Maintaining an environmentally friendly surrounding is crucial to the development of our future generations. As a standing policy, we are committed to conserving our environment through various means and delivering our services in an environmentally responsible manner. To take this forward, we undertake to promote environmental education in schools, fully comply with environmental legislation, and initiate housekeeping measures to preserve common resources and nurture civic responsibility as well as environmentally responsible attitude among our young generation. In supporting Government policies on environmental protection and sustainable development in Hong Kong, we will keep on pursuing our environmental goals and striving for the continual improvement of our environmental performance.

The objective of this report is to outline our policies and management measures with respect to environmental issues, our performance in 2015 and our direction for the coming year.
Controlling Officer's Profile of Key Responsibilities

We in the Education Bureau are responsible for formulating and reviewing education policy, and overseeing the effective implementation of education programmes. The Permanent Secretary for Education is responsible for the Policy Area 16: Education.

Our Bureau seeks to provide quality education for our students, to develop their potential to the full and to prepare them for the challenges in life. One of our missions is to deliver professional services and ensure effective use of resources.

The Bureau had an establishment of 5,524 permanent posts as at 31 December 2015. Apart from 65 Government primary/secondary schools and education centre, our offices are located in 21 venues throughout Hong Kong.
Our environmental policy is to promote environmental education in schools, to enhance our staff’s environmental awareness by encouraging them to participate in environmental protection activities, to maintain a management system to improve the environmental quality of our activities, to fully commit to implementing the Clean Air Charter, to adopt responsible environmental housekeeping practices and to comply with relevant legislation and codes of practice.

We devote our green efforts in two main areas: to promote environmental education in schools and to implement in-house green measures in offices and schools.
The Chief Executive kicked off the Action Blue Sky in July 2006 as a massive publicity campaign to raise the community’s awareness of improving air quality in Hong Kong. In tandem with a public appeal for energy conservation, he also directed that the Government of the Hong Kong Special Administrative Region should take the lead in reducing energy consumption.

To show our strong commitment to environmental protection and concern about the well-being of our future generations, the Chief Executive, on behalf of the Government of the Hong Kong Special Administrative Region, signed the Clean Air Charter in November 2006. All government bureaux and departments are required to follow the principles and spirit of the Charter when designing and implementing measures having regard to the specific nature and need of their operation and activities.
(A) INSTITUTIONAL CHANGE: BUREAU GREEN MANAGEMENT

To put in place an effective management framework, Principal Assistant Secretary (Administration) has been appointed the Green Manager of the Bureau to oversee environmental protection issues. Under her chairmanship, a cross-divisional Bureau Green Management Working Group with representatives from all divisions set up since 1999 has been developing the Bureau’s environmental objectives and overseeing the implementation of green housekeeping programmes. Apart from serving as the focal point for directing and addressing energy and environmental management issues and strengthening green efforts in the Bureau, the Working Group also initiates and monitors the progress of green measures and reviews the overall strategy for green management in the Bureau.

To respond to the Clean Air Charter, we have further strengthened the function of the Green Management Working Group with particular emphasis on energy conservation and air quality improvement.

A two-tier Energy Manager Scheme has been introduced to promote and monitor green measures in the Bureau:

1. **Green Managers at Divisional Level**

   14 Energy Managers have been appointed at divisional level to oversee the implementation of energy-saving and green measures.

2. **Assistant Energy Managers and Green Executives at Sectional Level**

   Environmental audit and inspection teams with 43 Assistant Energy Managers and 48 Green Executives have been set up at sectional level to perform energy conservation duties and implement green measures, such as conducting regular checks, tendering advice to staff concerned and monitoring energy consumption. They function as Energy and Emission Management Teams to co-ordinate measures to reduce energy and paper consumption.

Furthermore, electricity consumption of all offices is critically reviewed and closely monitored at the Green Management Working Group meetings conducted on a bi-monthly basis.
(B) FOLLOW-UP ACTIONS TO THE CLEAN AIR CHARTER

1. **Energy and Carbon Audit**

We worked closely with Electrical and Mechanical Services Department (EMSD) to identify new energy saving opportunities. EMSD completed an energy audit in the Bureau offices in Wu Chung House and Kowloon Tong Education Services Centre in 2007 and 2008 respectively. Another energy audit for Kowloon Tong Education Services Centre has also been conducted in 2015. 31 government secondary schools also joined the 3-year Energy-cum-Carbon Audit Programme organised by Environmental Protection Department in collaboration with EMSD and the relevant energy-cum-carbon audits were completed in 2012. Carbon audits were completed for one government primary school in 2011 and for one government secondary school in 2013. The ongoing carbon audit for offices in Central Government Offices in Tamar has been conducted since 2013. We have also taken various measures, including removing part of the fluorescent lamps in over-lit areas, switching off some of the passenger lifts during non-peak hours and adding occupancy sensor control in toilets, to implement the recommended energy saving proposals.

2. **Reduction of Air Pollution**

(a) **Use of Fuel Efficient Types of Vehicles**

Vehicular emissions are the major local source of air pollution and reducing emissions from vehicles is an effective way to improve air quality. We have been using unleaded petrol for our vehicle fleet since 1991.
We have gradually replaced all of our six vehicles by environment-friendly petrol saloon cars with lower emissions and more fuel-efficient engines over the past years. Among those, five are equipped with a ‘hybrid system’ which combines a gasoline engine and electric motor power to improve fuel economy and minimise emission of polluting particles.

(b) Promotion of Green Driving

To reduce idling emissions and achieve fuel saving, our drivers are regularly reminded to strictly comply with the requirements set out in the Motor Vehicle Idling (Fixed Penalty) Ordinance against idling of motor vehicle engines. Frequent surprise inspections have been conducted to ensure compliance.

(c) Economical Pool Car Resources

Furthermore, we have been practising car pooling and task combination, i.e. to achieve multiple objectives in one journey instead of arranging separate trips. Whenever circumstances permit, “car pool” arrangement would be made to reduce the use of vehicles and at the same time to meet transport demands of different users.
3. **Issue of Circulars to Schools**

To help alleviate the problem of global warming, we issued circulars to remind all schools to maintain air conditioning temperature at 25.5°C with a view to reducing the emission of carbon dioxide in Hong Kong. We required all schools through circulars to formulate a school-based environmental policy and implement effective measures for energy saving to help improve air quality. An environmentally friendly lifestyle among students has also been promoted via a circular on green lunch in school issued in September 2009. Under the ‘Greening for the Chest’ Campaign collaborated by our Community Youth Club, we encouraged schools to support the green campaign of 2015-16 through EDB Circular Memorandum No. 139/2015.

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**SUMMARY**

The circular reminds schools to formulate an environmental policy and implement measures for energy saving.

**DETAILS**

1. **Environmental Policy for Schools**

   To improve our environment and ensure sustainable development for our future generation, schools are urged to formulate school-based environmental policies. The aims of the policy are to enhance environmental awareness, promote green practices, and environmental education in schools. The environmental policy should, where feasible, be shown at the entrance of the school and in classrooms relating to environmental protection. A Student Environment Management Group should be established, which works towards the goal of using green family, green classroom, and green school for the overall improvement of school environmental management. Policies should be incorporated in their Annual Reports. For details on the formulation of the policy, schools may refer to Chapter 2 of "Planning Towards a Green School Policy". A Guide to Environmental Management in Schools is available at the website of the Environmental Campaign Committee (link: [www.epd.gov.hk/eng/about_ecc.html](http://www.epd.gov.hk/eng/about_ecc.html)).

   - **Energy Saving**

     1. Energy conservation and efficiency not only contribute to a better environment for the community but also help reduce unnecessarily operating on energy bills. In fact,
(A) ENVIRONMENTAL EDUCATION

Our mission is to enhance students’ environmental awareness through education and enlist their participation in conserving the environment. To take this forward, we adopt a cross-curricular approach in the promotion of environmental education and promote school-based and action-oriented activities.

To fulfill the goal of promoting environmental education, various initiatives have been undertaken. They include:

- issuing curriculum guides and other reference materials to promote environmental education in schools;
- producing multimedia packages and education television programmes on environmental education;
- organising school events on environmental education together with various government departments and green groups;
- incorporating appropriate environmental education elements in school syllabuses at all levels and updating curriculum guides and exemplars to assist schools in planning environmental education programmes; and
- supporting the “Greening for the Chest” Campaign organised by the Community Chest of Hong Kong.
1. **Interaction with Schools**

(a) **School Inspections and Visits**

We conducted 9 school visits on General Studies for Primary Curriculum in 2015 giving advice to teachers on the implementation of environmental education. Schools were also encouraged to formulate an environmental school policy and implement measures on energy conservation.

(b) **Provision of Resources to Schools**

6 Professional Development Programmes related to environmental education were provided for Liberal Studies teachers. The programmes cover environmental issues in Hong Kong, China and the world, such as energy and sustainable development in China and overseas experience in achieving sustainable communities, etc.

20 teaching packages and resources materials were provided for Liberal Studies teachers on social issues related to the environment and sustainable development, such as air pollution and solid waste management.

The Education Television (ETV) Unit produced two ETV programmes on environmental protection in 2015, namely “源頭減廢 升級再造” and “水質污染和污水處理”.
A total of 4 training programmes in the form of seminars / visits on Education for Sustainable Development were organised. Waste management was one of the topics discussed.

A Web-based Environmental Education Learning Package on “Education for Sustainable Development in Schools in Hong Kong” was developed. Clean Air was one of the topics in the package.

We supported schools in organising Outdoor Education Camp Scheme (OECS) in which enhancing students’ awareness of environmental protection was one of the elements. Related themes or activities include “Nature and I”, “Science and Ecology Trips”, “Climatology, Geography and Ecology Study Camps”, etc. Some schools also adopted environmental protection as the main theme of OECS such as “Green Living” and “Saving Energy”.

A total of 79,566 students, including 28,288 secondary and 51,278 primary students from 871 schools (341 secondary and 530 primary schools), participated in the OECS in the 2014/15 school year.

(c) School Activities to Promote Environmental Awareness

Funding was provided for 400 school visits to the Mai Po Nature Reserve.

Student Environmental Protection Ambassador Scheme (SEPAS) 2015/16

SEPAS was organised in collaboration with the Environmental Protection Department (EPD) and the Environmental Campaign Committee to promote environmental protection in schools. The main theme in 2015/16 was “Nature and Biodiversity”.

A total of 423 primary and secondary schools participated in the
Scheme and 11 682 Student Environmental Protection Ambassadors (SEPA) were appointed. The SEPA, schools and families were encouraged to adopt a greener lifestyle through waste reduction and recycling.

All SEPA have been appointed as the Blue Sky Ambassadors to assist teachers in organising environmental education activities related to air quality improvement.

Fourteenth Hong Kong Green School Award Scheme (14th HKGSAS)

This award was organised in collaboration with the EPD and the Environmental Campaign Committee to promote environmental protection in schools.

A total of 280 pre-schools, primary and secondary schools participated in the Scheme.

The following government schools were awarded the title of “Hong Kong Green School”:

| Hong Kong Green School - Farm Road Government Primary School |
| Tseung Kwan O Government Primary School |
Waste Separation and Recycling Scheme in Schools

Under the Scheme, we worked together with the Environmental Campaign Committee to promote the concept of “4Rs”, i.e. reusing, reducing, recycling and replacing disposable products. As at the end of 2015, the participating schools collected about 294,322 kilograms of waste paper and 126,772 kilograms of plastic materials.

In addition, about 3,308 kilograms of metal was collected.
2. **Building Partnerships**

We collaborated with various government departments and relevant green groups to promote environmental protection. We participated in the following working groups and committees in 2015 to provide advice on the organisation of school activities and production of resource materials to schools:

- Community Involvement Committee on Greening
- Environmental and Conservation Fund Committee
- Environmental Campaign Committee
- Environmental Campaign Committee Environmental Education & Community Action Projects Vetting Subcommittee
- Environmental Campaign Committee Education Working Group
- Hong Kong Green Building Council (HKGBC) - Public Education Committee
- Hong Kong Green Building Council (HKGBC) - Task Force on the Green Building Learning Kit for Schools
- World Wild Fund for Nature Hong Kong Education Committee
- Management Committee for Lung Fu Shan Environmental Education Centre
(B) IN-HOUSE HOUSEKEEPING MEASURES

1. **Design and Construction Works for New Schools**

We introduced various environmentally friendly initiatives in design and construction works of new school buildings, including:

- reduction in noise and air pollution during construction through implementation of mitigation measures;

- use of renewable energy (e.g. photovoltaic system) and alternative source of water (e.g. treated rain water) as far as practicable;

- reduction in construction waste by using more precast and prefabricated building elements;

- increased application of re-usable materials, in particular metal framework, site hoarding and recycled products;

- improvement to indoor air quality by installing fresh air pre-conditioners in classrooms and using low volatile organic compound-emitting building materials;

- use of environmentally friendly refrigerant for air-conditioners;

- use of energy-saving devices such as sun shading on external elevations, occupancy sensors, photo-sensor controlled lighting, T5 fluorescent tubes with electronic ballasts, LED exit signs, and variable refrigerant volume air-conditioning system;
• use of water-saving devices such as dual-flush cisterns and sensor-taps for wash basins;

• increased landscaping in school playgrounds and upper levels and roof floor of school (including vertical greening) for a greener environment in schools and campuses;

• provision of varied plant species and designated green areas in schools to foster students’ interest in natural science and enable students to develop horticultural skills;
• provision of adequate space and waste separation bins to facilitate separation, collection and storage of recyclable materials for recycling;

• use of shared facilities among schools which has enabled a greener and more spacious environment in these schools;

• introduction of hygiene improvement measures to schools, including toilet provision without main entrance doors and hand-washing facilities in playgrounds; and

• provision of Central Food Portioning Area to facilitate the use of re-usable cutlery and food containers and to reduce food wastage.

Water cooled VRV system

Hybrid type lamp pole

Hybrid type solar energy collector

Sunlight collector
Mono-crystalline PV panels

Mono-crystalline PV panels with sun tracking

Small scale wind turbine

Semi-transparent amorphous PV panels

Solar powered LED bollard light

LED accent lighting
2. Consumption of Resources

(a) Saving Paper and Electricity

We are making continuous efforts in economising the use of paper and reducing electricity consumption. Compared with last year, the paper consumption was decreased by 3.4%.

Electricity consumption of our government buildings in financial year (FY) 2013-14 and FY 2014-15 is tabulated below:

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<th>Electricity consumption (million kWh)</th>
<th>Electricity consumption under comparable operating conditions (million kWh)</th>
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<td>FY 2013-14 (base line)</td>
<td>33.4</td>
<td>Not applicable</td>
</tr>
<tr>
<td>FY 2014-15</td>
<td>34.1 (+2.2%)</td>
<td>33.2 (-0.6%)</td>
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As set out above, the electricity consumption of our government buildings was increased by 2.2% from FY 2013-14 to FY 2014-15, taking into consideration the major factors such as the change in premises, additional number of staff, additional plants and equipment and increased departmental activities.
Under comparable operating conditions of FY 2013-14, the saving in electricity consumption in FY 2014-15 was 0.6%, after implementing housekeeping measures, including shortening of operating time of the central air-conditioning system and switching off of air-conditioning in the facility/meeting room right after use, etc.

![Normalized Electricity Consumption Graph]

We shall continue to maintain our efforts to achieve savings in electricity and paper consumption.

(b) **Conserving Energy**

We shall continue to adopt energy-efficient measures and sustain our efforts in reducing energy consumption.

- Energy saving fluorescent tubes with electronic ballasts and light bulbs are used in our offices as far as possible.
• We have been strictly following the Government’s policy to maintain the ambient office temperature at 25.5 °C.

• Electricity consumption reports were compiled on a quarterly basis. Internal energy audits were conducted periodically.

• Moreover, our ITM Division has deployed server virtualisation technology and cloud services to reduce energy consumption. This also reduces the need to procure new IT equipment.

• At present, there are over 400 virtual servers in the Education Bureau. There are also 4 systems running in the cloud environment of the service providers. We shall continue to deploy technologies to reduce energy consumption where applicable.
3. **Highlights of Other Green Measures in 2015**

We have all along adhered to the 4Rs principles of “Reduce, Re-use, Re-cycle and Replace disposable products” and focused on minimising waste and implementing various green measures on an on-going basis.

(a) **Minimising and Reducing Wastes**

*Using Electronic Means of Communication*

- With a view to promoting paperless operation in our daily work and reducing the use of paper, staff in the Bureau are provided with email accounts and use of electronic mails has become the most popular means of communication in the Bureau.

- Staff in the Bureau are provided with Intranet accounts. The Intranet platform has been widely used to disseminate Bureau information including telephone directory, updates on grade management statistics, training activities, newsletters, etc. and process administrative and personnel matters, e.g. booking conference rooms, processing leave applications and processing applications for training courses. We encourage staff to exchange documents through electronic means.
(b) Re-use and Waste Recycling

As an integral part of our green strategy, we have put in place the following recycling program:

**Green Purchasing**

- In procurement of products, we took into account environmental factors such as recyclability and energy efficiency as far as applicable. We also purchased green products like re-cycled ink and toner cartridges.

- We supported procurement of green products for use in the Bureau. In arranging tenders, we included common environmentally friendly terms such as trade-in clauses, recycling arrangements, etc. as far as practicable. Trade-in arrangements for the supply of ink and toner printer cartridges were arranged. In this connection, a total of 1,834 used cartridges were returned to the suppliers concerned for recycling or public auction in 2015. Furthermore, we collected a total of 2,371 pieces of computer waste for recycling either by contractors under the disposal contracts or through public auction.

- When inviting tenders for new cleansing contracts for our offices and schools, we required tenderers to include use of recycled plastic bags and approved cleansing chemical and materials in the service schedule.

**Collecting Waste**

- We joined the EPD’s “Programme on Source Separation of Commercial and Industrial Waste” and provided green boxes in offices and schools for collection of papers, plastic and aluminium wastes for recycling.

- We collected a total of 190,439 kilograms of waste paper for recycling throughout the year.
Use of Recycled Paper

• Following the EPD’s recommendation of wider use of recycled paper, we consumed 93,130 reams of recycled papers in 2015.

• We continue with our efforts in reducing paper consumption and measures such as printing on both sides of paper and reusing envelopes.

Improvement in Indoor Air Quality

• Under the EPD’s Indoor Air Quality (IAQ) Certification Scheme, offices in the Central Government Offices in Tamar have obtained the “Excellent Class” IAQ Certificate while offices in Wu Chung House and the Kowloon Tong Education Services Centre have obtained the “Good Class” IAQ Certificate in 2015. We will continue to monitor the indoor air quality regularly to ensure the IAQ meets the standard promulgated by the EPD.
Promotional Green Activities

- We organised a series of activities to promote green management in the Bureau in 2015, including:

(i) The Sixteenth Paper Saving Competition
- We organised the sixteenth Paper Saving Competition to promote paper saving in daily operation among colleagues working in government schools and offices.

Prize
Best Performance Award in Paper Saving

Winning Teams
- School Development Division
- Li Cheng Uk Government Primary School
- Finance Division
- Hoi Pa Street Government Primary School
(ii) *Green Christmas*

- In the exercise of “Donation of Clothing, Small Electrical Appliances and Toys” launched during Christmas 2015, we collected 6 packs of clothing, small electrical appliances and toys for donation to the Salvation Army.

(iii) *Electronic Christmas Cards*

- As one of our paper-saving measures, we used e-cards to send Christmas and New Year greetings to our working partners. Staff was also encouraged to use the GovHK Internal e-Card Platform to distribute e-cards.
Promotional Messages on Newsletter and Bureau Intranet

- To encourage direct participation by colleagues and appeal for their support and contribution in protecting the environment, we disseminated green messages and notices and green tips on the Bureau’s newsletter “EDB Pulse”, EDB Intranet and internal publications.
We fully recognise the importance of environmental protection and green management. The Bureau will continue to devote efforts and resources to maintaining a high level of green management practice and setting a good example to the community.

In terms of education, we will continue to encourage schools to develop a green culture, and to equip students with the knowledge, skills and attitude to become environmental-friendly citizens. To support schools in environmental education, we will continue to provide a broad range of services including school visits, teacher education programmes, territory-wide green activities, and learning and teaching resources.

Within the Bureau, we will strive to reduce electricity consumption having regard to actual operational requirements. With the completion of energy/carbon audits and review of enhanced green management measures, we shall be in a better position to work out more concrete energy saving targets in the future.
TARGETS FOR 2016

Our targets for promotion of environmental education in the 2015/16 school year are as follows:

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<th>Key Action Area</th>
<th>Targets for 2015/16 School Year</th>
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<tr>
<td>Conducting school inspections and visits to give advice on environmental education</td>
<td>To advise schools on environmental education during school visits and other learning experience activities</td>
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<tr>
<td>Organising school activities to enhance students’ awareness of environmental protection</td>
<td>To fund 400 school visits to the Mai Po Nature Reserve</td>
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<td></td>
<td>To organise activities in collaboration with various government departments and non-government organisations to promote green living</td>
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<td></td>
<td>To subsidise 600 schools through the “Outdoor Education Camp Scheme” to deepen students’ understanding and love of the nature to enhance their awareness of environmental protection</td>
</tr>
<tr>
<td>Providing advice on organisation of school activities and production of resource materials for schools to promote environmental protection</td>
<td>To enrich the web-based learning and teaching resources, such as the life event exemplars relating to environmental education</td>
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In conducting our business, we will continue to economise on the use of resources and minimise waste. In the coming year, we will continue to:

1. initiate and promote environmental-friendly housekeeping practices;

2. conduct indoor air quality check and devise more effective measures to improve air quality;

3. implement housekeeping measures and best practices for energy savings and conduct energy audits where necessary with a view to achieving energy saving;

4. implement improvement measures to achieve further energy conservation according to the recommendations of energy audits or carbon audits;

5. promote and encourage saving of paper among staff through organising activities and publishing encouraging messages in internal publications;

6. promote the use of electronic means of communication within the Bureau; and

7. organise activities and training to promote staff’s awareness and participation in green management.
If you have any comments/suggestions, please send them to the Centre Manager (Address: Room E301, East Block, Kowloon Tong Education Services Centre, 19 Suffolk Road, Kowloon Tong, Hong Kong; Email address: edbinfo@edb.gov.hk; Fax no.: 2117 0081). Thank you.