

ENVIRONMENTAL REPORT 2022



Education Bureau

The Government of the Hong Kong Special Administrative Region
of the People's Republic of China

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Inside Cover Photo: Garden Plot at Bonham Road Government Primary School

Scope of the Report

This Environmental Report covers the period from 1 January 2022 to 31 December 2022 unless otherwise specified. It provides an overview of the efforts of the Education Bureau (EDB) to maintain an environmentally friendly surrounding and create a sustainable environment.

This report is published in English and Chinese on our website to reduce paper consumption. Internet version can be accessed by scanning the following QR Codes.

English



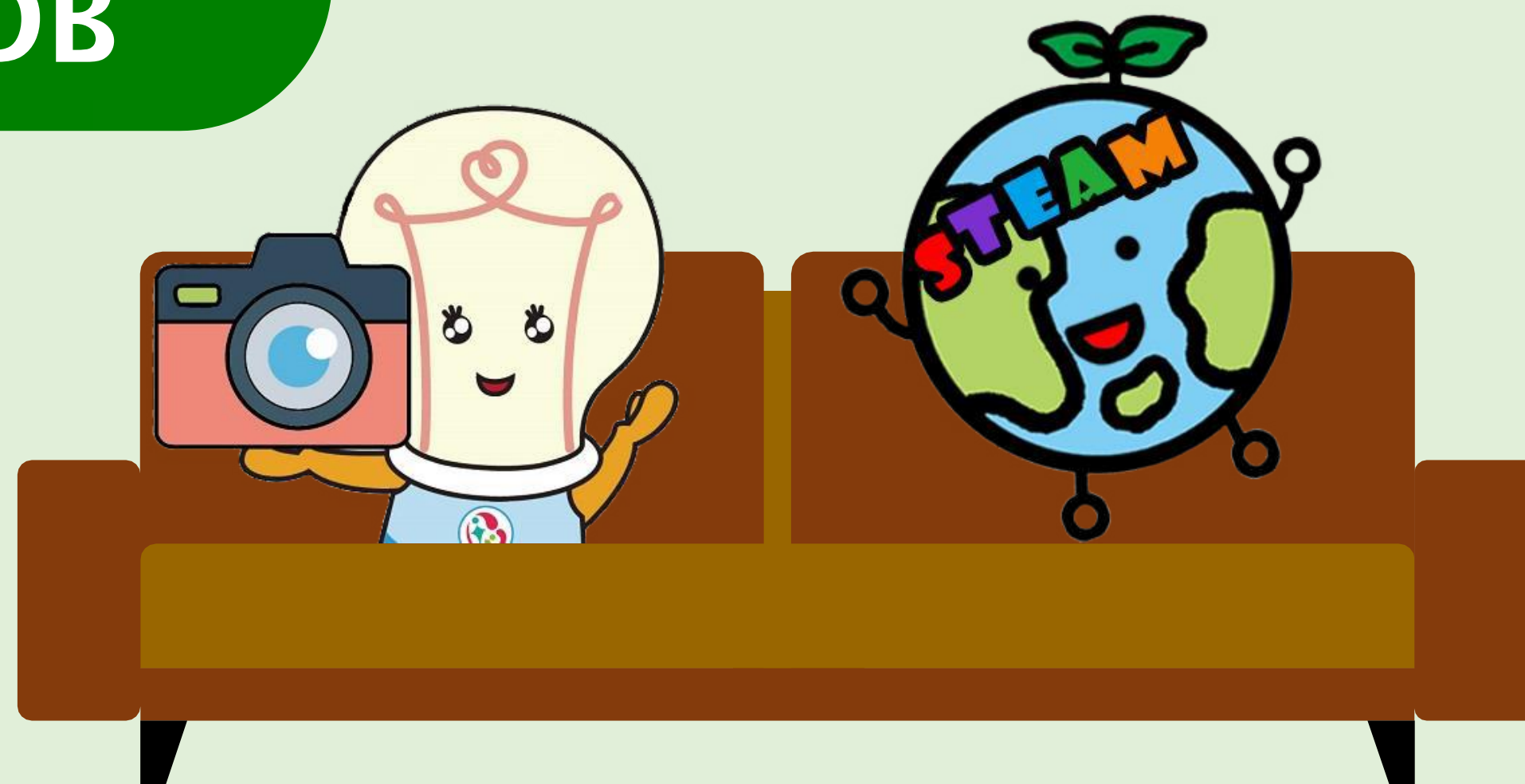
繁體中文版



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I. Profile and Environmental Policy of EDB



Vision and Mission

- 1.1 Our vision is to provide quality school education for our students, develop their potential to the full, and prepare them for the challenges in life.
- 1.2 Our mission is to –
- deliver professional services and ensure effective use of resources; and
 - forge partnerships to promote excellence in school education.

Our Work

- 1.3 Our major responsibilities are –
- formulating, developing and reviewing policies, programmes and legislation in respect of education from pre-primary to tertiary levels; and
 - overseeing the effective implementation of educational programmes.
- 1.4 We are also the School Sponsoring Body for 34 government primary schools and 31 government secondary schools.

Environmental Goal and Policy

- 1.5 Our environmental goal is to maintain an environmentally friendly surrounding and create a sustainable environment for our ensuing generations.
- 1.6 In meeting our goal, we are committed to –
- promoting environmental education;
 - adopting green designs and construction works for schools;
 - implementing environmental housekeeping measures; and
 - enhancing environmental awareness and compliance with relevant legislation and codes of practices amongst colleagues.



Figure 1: Central Government Offices where EDB's main offices are located

II. Key Environmental Performance in 2022



(A) ENVIRONMENTAL EDUCATION

2.1 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. We also collaborate with renowned green groups, such as the Environmental Campaign Committee and the World Wide Fund for Nature Hong Kong Education Committee to provide advice on organisation of school activities and production of resources materials to schools.

2.2 To fulfil the goal of promoting environmental education, various initiatives were undertaken in 2022.

Figure 2: Visit to the Green Education and Resources Centre by Tsuen Wan Government Secondary School in August 2022

Green Activities Organised by Schools

2.3 Despite the COVID-19 epidemic situation, government schools continued to promote environmental education by organising green activities for their students in 2022.



Figure 3: Environmentally-friendly Decoration Workshop held by Yuen Long Public Secondary School in July 2022



Figure 4: Participation in 21st Eco-Model Creative Tournament by Tseung Kwan O Government Secondary School in August 2022



Figure 5: Interactive booth games on "Carbon Neutrality" organised by Kowloon Technical School in August 2022

Learning Resources for Schools

Professional Development Programmes

- (i) **Eight professional development programmes** (PDP) related to education on **sustainable development**, covering green living, green consumption, green building, climate change mitigation, energy saving and biodiversity conservation, etc., were organised for all school teachers in 2022. Among them, four PDPs were held in collaboration with the **Environmental Protection Department** (EPD).



Figures 6 and 7: Winning School Visits cum Environmental Training Workshops for 2022 Hong Kong Awards for Environmental Excellence (Schools Sector) held in collaboration with EPD in November 2022

Seminars

- (ii) Five **seminars** related to sustainable development, climate change and biodiversity were held in 2022.

Visits to Educational Facilities

- (iii) A visit to **CLP Power Low Carbon Energy Education Centre** was organised for Science teachers in June 2022 to enrich their understanding of the importance of low carbon energy and solar energy as a renewable energy source.



Figure 8: Visit to CLP Power Low Carbon Energy Education Centre in June 2022

Learning and Teaching Resources

- (iv) Four “life event” exemplars on topics of **green living, low-carbon diet, green consumption, and global warming** were developed for reference of teachers in primary and secondary schools in 2022.

Educational Multimedia Resources

- (v) An educational multimedia resource (EMM) series namely **“Life Discovery”** consisting of 14 videos, seven animations and seven songs including tips on environmentally friendly lifestyles was developed and made available on the EMM Website (click [here](#) to visit EMM Website).



Figure 9: One of the seven animations on “Life Discovery” available on the EMM Website to cultivate students’ awareness of nature conservation



Promoting Students' Environmental Awareness

(i) Visits to Mai Po Nature Reserve

Funding was provided for 109 school visits to Mai Po Nature Reserve in 2022.

(ii) Student Environmental Protection Ambassador (SEPA) Scheme 2022/23

SEPA Scheme was organised in collaboration with the EPD and the Environmental Campaign Committee to promote environmental protection in schools. The main theme in 2022/23 was “**Waste Blueprint for Hong Kong 2035**” to promote waste reduction at source and to enable students to better understand waste management in Hong Kong and the current policy initiatives.

A total of **227 primary and secondary schools** participated in the SEPA Scheme 2022/23. As at December 2022, **6 452 student ambassadors** were appointed to assist teachers in organising environmental education activities. Schools, families and student ambassadors were encouraged to adopt a greener lifestyle and improve the

environment. Knowledge on proper waste recycling practices and the sustainable use of biological resources were also introduced through a series of environmental training and activities.



Figures 10 and 11: SEPA Scheme Activity held in 2022

(iii) Outdoor Education Camp Scheme

We support schools in organising Outdoor Education Camp Scheme (OECS), in which enhancing students' awareness of environmental protection is one of the learning elements. Related themes or activities include

“**Nature and I**”, “**Science and Ecology Trips**”, “**Climatology, Geography and Ecology Study Camps**”, “**Green Living**”, “**Saving Energy**”, etc. Due to COVID-19, most of the school outdoor education camps scheduled for the 2021/22 school year were cancelled. With the relaxation of anti-epidemic measures for schools in 2022, **15 schools** resumed outdoor education camps under the OECS for over **1 600 students** in November and December 2022.

(iv) Student Educational Activities

In 2022, slogan cum poster design competitions on “**Practising Low Carbon Living**” and “**Climate Change Mitigation**” were organised for primary and secondary schools with a view to enhancing students' environmental awareness, cultivating their sense of responsibility in environmental protection, and inspiring them to take part in achieving carbon neutrality. A total of **340 and 217 entries** were received from primary and secondary schools respectively.

(v) 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. reducing, re-using, recycling and replacing disposable products.

Performance in 2022:

As at the end of 2022, participating schools recycled about -

- **207 847 kg** of waste paper;
- **95 687 kg** of plastic materials; and
- **10 686 kg** of metal containers.



Figure 12: Uniform Recycling Programme in Tai Po Government Primary School in 2022

(B) BUILDING GREENER SCHOOLS

2.4 We introduced various environmentally friendly initiatives, technologies, materials and devices in the design and construction of new school buildings.

Green Designs and Construction

- (i) increased **landscaping** in school playgrounds, and upper levels and roof floor (including **vertical greening**);
- (ii) 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;
- (iii) provision of adequate space and **waste separation bins** to facilitate separation, collection and storage of recyclable materials for recycling;

- (iv) use of shared facilities among schools to enable a **greener and more spacious environment therein**;



Figure 13: Greener and Spacious Environment for new school buildings



Figure 14: Modular Integrated Construction

- (v) provision of **Central Food Portioning Area** to facilitate the use of re-usable cutlery and food containers and to reduce food wastage;
- (vi) reduction in noise, air and water pollution during construction through implementing mitigation measures, such as **provision of noise barrier to noise sensitive area, spraying water on the surface of dusty materials and provision of traps and sediment basins to remove sand/silt particles**;
- (vii) reduction in construction waste by using **Modular Integrated Construction, Modular Integrated Mechanical, Electrical and Plumbing**, and more precast and prefabricated building elements; and
- (viii) use of **Building Information Modelling** to enhance the design, construction, and project management as well as reducing construction wastes.



Green Technologies, Materials and Devices

- (i) use of **renewable energy** (e.g. photovoltaic system, solar hot water system, light tubes) and alternative source of water (e.g. rainwater harvesting system);
- (ii) increased application of **re-usable materials**, in particular metal framework, site hoarding and recycled products;
- (iii) improvement to indoor air quality by installing central primary air handling units with **high efficiency filter** and ultra-violet lamp and using low volatile organic compound-emitting building materials;
- (iv) use of **environmentally friendly refrigerant** for air-conditioners and chlorofluorocarbon free thermal insulating materials;
- (v) use of **energy saving devices** (e.g. sun shading on external elevations, occupancy sensors, photo-sensor controlled lighting, LED general light fittings, LED exit signs, variable refrigerant volume air-conditioning system, direct current motor ceiling fans, demand control system for fresh air system, smart lighting control and variable speed drive system for lifts / pumps / air handling units); and
- (vi) use of **water saving devices** such as dual-flush cisterns and sensor-taps for wash basins.



Figure 15: Use of Light Tubes and Solar Panels



Figure 16: Smart Classroom and Smart Lighting Control in new school buildings



Figure 17: Design of New School Premises for Canton Road Government Primary School using Building Information Modelling

(C) ENVIRONMENTAL HOUSEKEEPING MEASURES

Green Management Framework

2.5 A cross-divisional Bureau Green Management Working Group chaired by our Bureau Green Manager at directorate level (i.e. Principal Assistant Secretary (Administration)) with representatives from all divisions has been set up since 1999. It has been overseeing the implementation of green housekeeping programmes; initiating and monitoring the progress of green measures; reviewing the overall strategy for green management in the Bureau; and monitoring energy and paper consumption.

Energy and Carbon Audit

2.6 EDB works with the Electrical and Mechanical Services Department to identify new energy saving opportunities. Since 2017, we have been carrying out carbon audits for our offices and government schools each year. In 2022, carbon audits were carried out for six government schools and EDB Kowloon Tong Education Services Centre. The total carbon emission for these seven premises (with total floor area of 82,684 m² and 1,285 employees) was **2,750 tonnes of carbon dioxide equivalent (CO₂-e)**. We have carried out energy saving projects (such as improvement of efficiency of chiller plants, replacement of split-type air-conditioning systems, set up of registration and control of paper request, installation of water flow controllers, etc.) and taken various measures to take forward the recommendations of the audits.

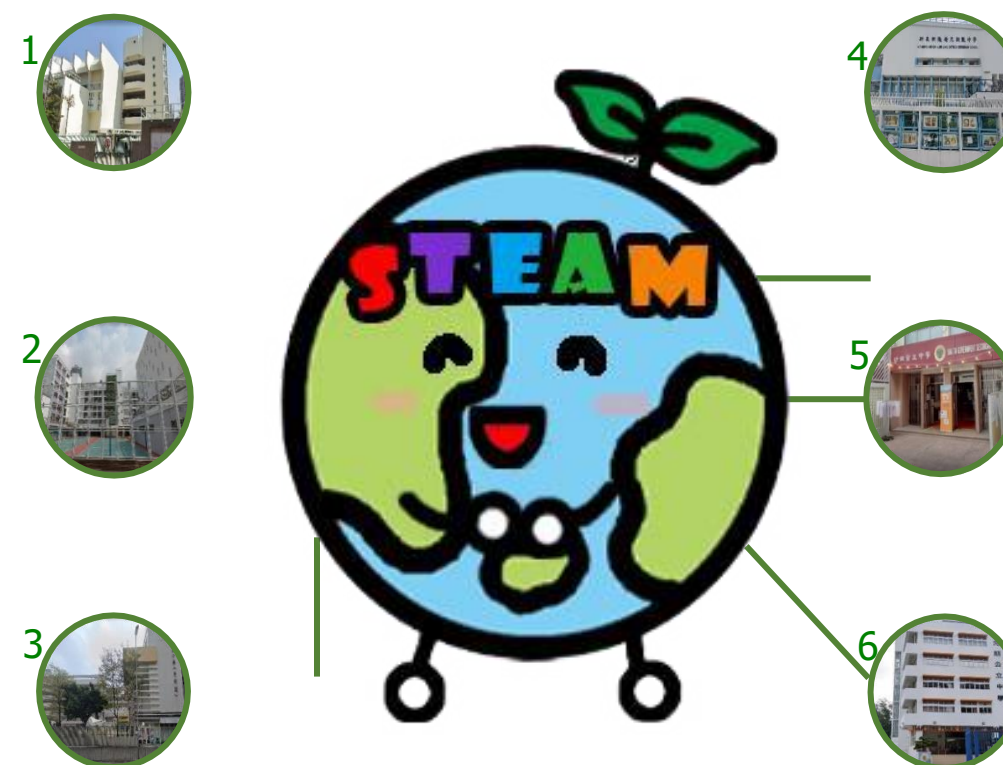


Figure 20: Six Government Schools selected for Carbon Audit in 2022
 1. Chiu Lut Sau Memorial Secondary School
 2. Kowloon Technical School
 3. Kwun Tong Government Primary School (Sau Ming Road)
 4. New Territories Heung Yee Kuk Yuen Long District Secondary School
 5. Shatin Government Secondary School
 6. Yuen Long Public Secondary School



Figure 18: Installation of Solar Panels on the Rooftop of New Territories Heung Yee Kuk Yuen Long District Secondary School in 2022



Figure 19: Installation of Solar Panels on the Rooftop of Shatin Government Secondary School in 2022



Figure 20: Conversion of Air-cooled Chiller to Water-cooled Chiller at EDB Kowloon Tong Education Services Centre in 2022

Economical Consumption of Resources

2.7 We have been striving for economy in the use of resources for environmental protection.

Saving Paper

EDB **consumed about 130,000 reams of paper in 2022**. The paper consumption has reduced by 9.1% compared with 2021, partly due to the suspension of classes and cancellation of some operational activities during the epidemic. We continued to adopt various paper-saving measures such as dissemination of documents / publications / reports through electronic means (e.g. website, hyperlink and QR codes), promotion of paperless meetings, implementation of electronic classroom arrangements, and digitising existing forms/returns through IT-enabled solutions, etc.

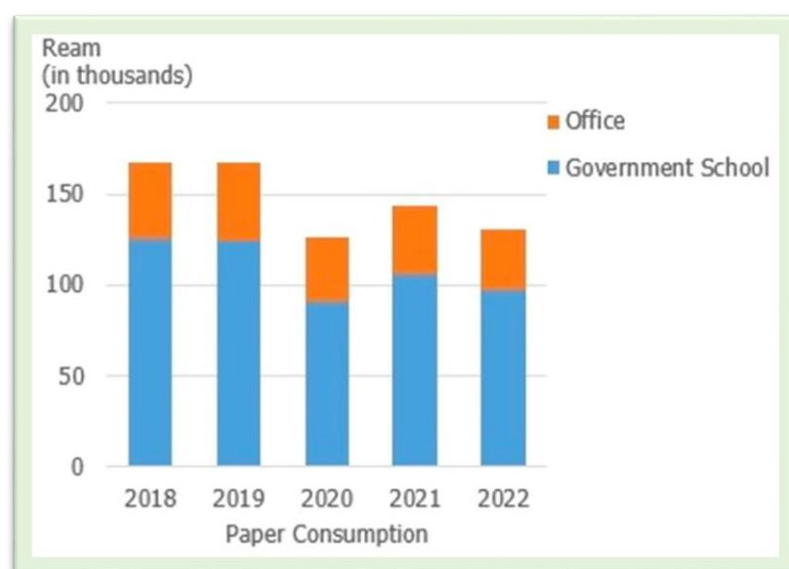


Figure 21: Paper Consumption of EDB

Energy Conservation

EDB constantly monitors energy consumption and seeks to achieve savings in electricity consumption. As set out in [Table 1](#) below, **energy consumption** of office premises and government schools in financial year (FY) ^{Note 1} 2021-22 **reduced by 7.3%** compared to the baseline year FY 2018-19. Under comparable operating conditions in FY 2018-19, **EDB achieved the Green Energy Target of 6% in FY 2021-22, discounting factors relating to class suspension and work-from-home arrangements**.

Table 1: Energy Performance of EDB in FY 2021-22			
(in million kWh)	Energy consumption		Renewable Energy generation
	Before normalisation	After normalisation ^{Note 2}	
FY 2021-22	29.918	30.301	0.054
Net change from FY 2018-19 ^{Note 3}	-2.351 (7.3% saving)	-1.880 (5.8% saving)	0.054 (0.2% contribution)

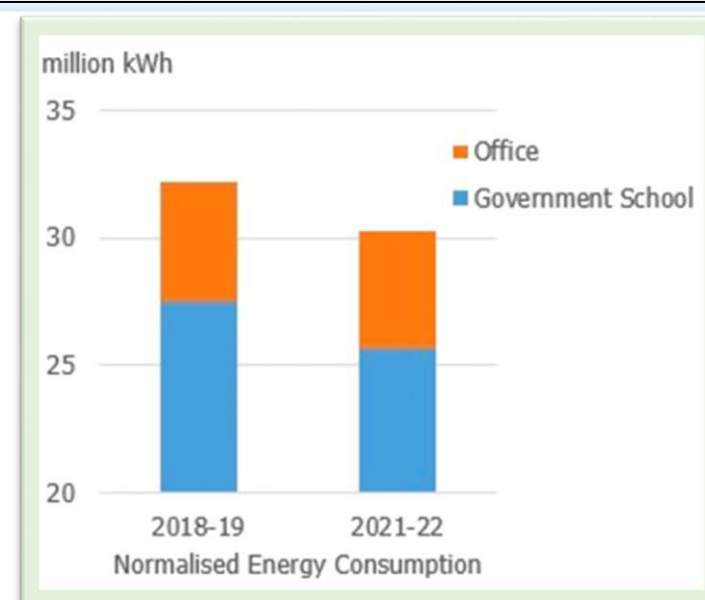


Figure 22: Energy Consumption of EDB

Note 1: A financial year starts from 1 April of a year and ends on 31 March of the following year.

Note 2: Normalisation processes are conducted to adjust the energy consumption by using the operating conditions in FY 2018-19 to facilitate comparison under comparable operating conditions.

Note 3: The net change in energy consumption is computed by comparing with the energy consumption in FY2018-19 (baseline year) (i.e. 32.269 million kWh before and 32.181 million kWh after normalisation). The renewable energy generation of 54,000 kWh in FY2021-22 accounted for 0.2% of the energy consumption in FY2018-19 (baseline year).

Energy Saving Measures

In 2022, we continued to reduce energy consumption by implementing the following housekeeping measures –

- ✓ shortening operating time of the central air-conditioning systems;
- ✓ shortening operation hours of lifts and escalators;
- ✓ switching off air-conditioning and providing only fresh air supply in corridors and common areas;
- ✓ switching off air-conditioning in facilities/meeting rooms right after use;
- ✓ using more LED energy-saving tubes in our premises as far as possible;
- ✓ strictly following the Government's policy to maintain the ambient office temperature at 25.5°C;
- ✓ monitoring energy consumption by regular checking and compiling electricity consumption reports; and
- ✓ deploying server virtualisation technology and cloud services to replace traditional servers for further reductions in energy consumption and heat emissions.

Waste Reduction

2.8 EDB has all along adhered to the concept of 4Rs, i.e. reducing, re-using, recycling and replacing, to minimise waste and implement various green measures.

Waste Collection and Recycling

To encourage waste recycling, we continued to provide green boxes to offices and schools for collection of papers, plastic and aluminum wastes for recycling in 2022. EDB's Offices in Wu Chung House (WCH) also participated in EPD's "Competition on Source Separation of Commercial and Industrial Waste 2021/2022" and a Certificate of Merit was awarded to the government offices in WCH including EDB.

Performance in 2022:

- We collected **119 457 kilogrammes of waste paper** for recycling.
- We consumed **105 801 reams of recycled papers**.
- A total of **620 used cartridges were returned to the suppliers** concerned for recycling.
- We collected a total of **844 pieces of computer waste for recycling** by contractors.

Electronic Communication

We encourage staff to communicate through electronic means, and use the intranet and internet and QR codes to disseminate the Bureau's information (statistics, training activities, newsletters, etc.), and process administrative and personnel matters (e.g. leave applications, bookings of conference rooms and applications for training courses electronically).

Green Purchasing

- In products procurement, we continue to take into account environmental factors such as recyclability and energy efficiency. We also continue to purchase recycled products such as recycled ink.
- Trade-in arrangement for supply of toner printer cartridges was arranged.
- Measures have been put in place to require the cleansing contractors for our offices and schools to use recycled / degradable plastic bags and approved cleansing chemical and materials.

Improvement in Air Quality

2.9 On improving air quality, we have deployed different strategies –

Improvement in Indoor Air Quality

Under the EPD's Indoor Air Quality (IAQ) Certification Scheme, offices in Central Government Offices in Tamar have obtained the "Excellent Class" IAQ Certificate while offices in WCH and EDB Kowloon Tong Education Services Centre have obtained the "Good Class" IAQ Certificate in 2022.

Economical Pool Car Resources

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 pooling arrangement would be made to reduce the use of vehicles and meet transport demands of different users at the same time.

Promotion of Green Driving

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

Use of Fuel-efficient Types of Vehicles

Reducing vehicular emissions is an effective way to improve air quality. In accordance with the relevant guidelines on Green Procurement in the Government, all our six vehicles have been replaced by environmentally friendly petrol saloon cars with lower emissions and more fuel-efficient engines over the past years. Among these, two are equipped with a "hybrid system" combining a gasoline engine and electric motor power to improve fuel economy and minimise emission of polluting particles. We plan to replace our vehicles with electric models upon expiry of their life span.

(D) PROMOTIONAL GREEN ACTIVITIES

2.10 We organised a series of activities in 2022 to raise awareness and compliance with green practices amongst colleagues.

Green Christmas 2022

In “Green Christmas 2022”, we encouraged colleagues to donate second-hand items, including clothing, small electrical appliances and toys. Items collected were donated to Salvation Army for recycling and distribution to people in need (including street sleepers, deprived elderly, etc.). We also encouraged staff to use e-Christmas cards to share their Christmas blessings with a view to promoting paper saving.



Figure 23: Items donated by EDB staff in Green Christmas 2022



Figure 24: 2022 EDB e-Christmas card

The 23rd Paper Saving Competition

We organised the 23rd Paper Saving Competition to promote paper saving in daily operation among colleagues working in government schools and offices.



Figure 25: Prize Presentation for 23rd Paper Saving Competition

Table 2: Result of the 23rd Paper Saving Competition

Group	Prize	Winning Teams
School	Best Performance Award in Paper Saving	Shatin Government Secondary School
	Best Progress Award in Paper Saving	Yuen Long Public Secondary School
Office	Best Performance Award in Paper Saving	Curriculum Development Institute
	Best Progress Award in Paper Saving	Curriculum Development Institute

Promotional Messages on Newsletter and Intranet

We disseminated green messages, notices and tips through the Bureau’s quarterly newsletter “EDB Pulse” and other internal publications on our intranet.



Figure 26: "EDB Pulse" (April 2022 Issue)

Green Events joined by EDB Volunteer Team

In 2022, the EDB Volunteer Team joined the Bread Run activity held by Feeding Hong Kong and the volunteer service organised by Food Angel with a view to promoting food waste reduction at source.



Figure 27: Participation in the Feeding Hong Kong Bread Run activity by the EDB Volunteer Team in September 2022



Figure 28: Participation in the Food Angel volunteer service by the EDB Volunteer Team in October 2022

III. Looking Forward – Espousing a Green Life



Espousing a Green Life

Learn Green, Act Green, Go Green

3.1 We fully recognise the importance of environmental protection and green management. EDB will step up efforts and devote resources to maintaining a high level of green management and setting a good example to the community.



Figure 29: Potted Plant Workshop organised by Yuen Long Public Secondary School in December 2022

Environmental Education



3.2 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.

Planned Activities in 2023

- ✓ EDB will continue to provide subsidies to students and eligible teachers to participate in education camps under the **Outdoor Education Camp Scheme** in the 2022/23 school year;
- ✓ Three **life event exemplars** on waste reduction, environmental protection and climate change are planned to be provided in 2023; and
- ✓ **Field trip design competition** for primary schools is planned to be organised in 2023 to raise students' awareness of biodiversity and promote nature conservation.

Green Projects



3.3 We will strive to reduce electricity consumption as far as possible and implement green designs / proposal / projects based on the recommendations of energy / carbon audits.

Green Projects in the Pipeline

- ✓ Installation of **water flow controllers** in government schools to reduce water consumption; and
- ✓ Replacement of room coolers by **inverter type equipment with higher energy efficiency** in government schools.

Stepping Up Green Promotion



3.4 In conducting our business, we will continue to economise by introducing more effective measures to promote the use of renewable energy, paper saving and staff's awareness and participation in green practices in 2023.

Paper Saving Target

- ✓ EDB has launched a **Paper Saving Target of 6%** for the period **from 1 October 2022 to 30 September 2023**.



Contact Us

If you have any comments / suggestions, please contact our Bureau Green Manager through any of the following means –

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