

Agriculture, Fisheries and Conservation Department

Environmental Report 2017

Profile

The Agriculture, Fisheries and Conservation Department (AFCD) provides services to the public in the following three programme areas with their respective aims:

- (a) Agriculture, Fisheries and Fresh Food Wholesale Markets
 - ◆ to facilitate agricultural and fisheries production; and to promote its sustainable development
- (b) Country & Marine Parks and Nature Conservation
 - ◆ to conserve flora, fauna and natural habitats; to designate and manage country parks, special areas, geopark, marine parks and marine reserves; and to control international trade in endangered species of animals and plants in Hong Kong
- (c) Animal, Plant & Fisheries Regulation and Technical Services
 - ◆ to monitor the welfare of, and control the diseases in, animals and plants through enforcement of relevant legislation; to protect public health; to protect and regulate fisheries; and to provide technical services.

2. We are responsible for management and operations of the Hong Kong UNESCO Global Geopark, the Hong Kong Wetland Park, the Endangered Species Resource Centre, the Fisheries Education Centre, the Tai Lung Experimental Station, the Tai Lung Veterinary Laboratory, 24 Country Parks, 22 Special Areas, eight Country Park Visitor Centres/Education Centres, five Marine Parks, one Marine Reserve, four Animal Management Centres, one Plant Quarantine Station and four Wholesale Food Markets.

3. As at 31 March 2017, there were 2 129 civil servants working in our headquarters in the Cheung Sha Wan Government Offices and over 50 outstations throughout the territory. The departmental expenditure for 2017-18 amounted to \$1 356.30 million.

Environmental Policy

4. Our environmental policy is:
 - (a) to promote local production of fresh food in a sustainable and environmentally responsible way; and
 - (b) to conserve and enhance our natural environment.

Environmental Objectives

5. In implementing this environmental policy, we will:
 - (a) develop and promote environmentally responsible technology in agricultural and fisheries production;
 - (b) conserve and manage natural environment through identification, designation and management of country parks, special areas, geopark, marine parks and marine reserves;
 - (c) conserve local flora, fauna and their natural habitats through law enforcement and provision of conservation advice on development proposals and planning studies;
 - (d) conserve endangered species through controlling international trade;
 - (e) comply with environmental legislation and adopt environmentally responsible practices in daily operations; and
 - (f) review the use of resources regularly and improve to reduce any adverse environmental impacts, for example, by reducing energy consumption and air pollutant emissions in our operations.

Environmental Performance

6. We have launched various programmes to foster environmentally responsible practices and sustainable use of natural resources in agriculture and fisheries. Highlights of 2017 are set out below:

- ◆ The Accredited Vegetable Farm Scheme continued to promote good horticultural practices and proper use of pesticides. In 2017, the total number of accredited farms in Hong Kong was 283, covering some 85 hectares of farming area.

- ◆ To promote local organic agriculture, the Organic Farming Support Service provided technical support to 309 local organic farms covering about 109 hectares of farming area in 2017. Organic farming aims to help achieve a natural balance with the environment by fostering production of crops in an environmentally friendly and sustainable manner.
- ◆ The Department administered a registration system for local fishing vessels to maintain fishing effort in Hong Kong waters at appropriate levels.
- ◆ The Department vigilantly took enforcement actions against destructive fishing practices, such as fishing with explosives, toxic substances, electricity, dredging, suction and trawling devices. Also, the Department flexibly deployed resources to step up patrols and stringently enforced the law. During the year, 1 629 patrols were conducted for combating destructive fishing activities. Communication and co-operation with other departments (including the Marine Department, the Hong Kong Police Force and the Mainland counterparts) were enhanced to combat illegal fishing activities in Hong Kong waters. Joint enforcement actions were carried out as needed.
- ◆ The Department continued to enhance fisheries habitats and resources through deployment of artificial reefs and restocking. The accumulated volume of artificial reefs established in Hong Kong reached over 170 000 m³.
- ◆ The Fisheries Education Centre¹ in the Aberdeen Fisheries Office continued to promote public awareness of the need and importance of fisheries conservation. During the year, the Centre received 841 visitors.
- ◆ The Department continued to implement the Accredited Fish Farm Scheme on a voluntary basis to enhance quality of cultured fish. In 2017, a total of 119 fish farms (47 freshwater fish

¹ The Fisheries Education Centre has been temporarily closed from 1 September 2017 due to construction works in the Aberdeen Fisheries Offices building.

farms and 72 marine fish farms) covering some 22% of total area of local fish farms were registered under the Scheme.

- ◆ Environmentally friendly aquaculture practices were promoted among fish farmers, such as proper disposal of fish carcasses, maintenance of appropriate stocking density and use of pellet feed to replace trash fish. Some 276 fish farms (176 mariculture farms and 100 pond fish farms) were visited in 2017 for promotion of good aquaculture practices.
- ◆ To promote organic fish farming, the Department provided technical support to fish farmers in converting their fish farms into organic fish farms. Three organic fish farms received the accreditation from the Hong Kong Organic Resources Centre.

7. We have introduced measures to conserve biodiversity and protect natural habitats. We have also been designating and managing country parks, special areas, geopark, marine parks and marine reserve so as to conserve and enhance our natural environment. The following projects and activities were carried out in 2017:

- ◆ Over 395 600 seedlings were planted in country parks to enhance their landscape and rehabilitate areas damaged by hill fires and soil erosion. Over 80% of the seedlings planted were native species providing more suitable habitats for local wildlife.
- ◆ As one of our on-going efforts to enhance the diversity of flora and fauna in country parks, the Country Park Plantation Enrichment Project was introduced in 2009. Under the Project, exotic plantation species, in particular aged and weak ones, are removed for the growth of local plants. Native species, where appropriate, are planted to speed up the enrichment process. In 2017, over 130 000 m² plantations in country parks were identified for the Project.
- ◆ Apart from the “Nature In Touch” education and publicity programmes organised for schools and the general public, a variety of festivities were held in 2017 to celebrate the 40th

Anniversary of the Country Parks under the theme of “Country Parks Our Legacy”. School visits, excursion tours, talks, exhibitions, trail maintenance workshops, family camping activities, tree-planting days, recreational tree-climbing days, hiking events and a carnival were held. They attracted some 579 400 participants.

- ◆ The “Take Your Litter Home” public education programme was launched to nurture a sense of responsibility to the environment among the members of the public. Under the programme, they were encouraged to reduce waste at source as well as take their rubbish away after visiting country parks. To tie in with the publicity effort, all litter containers and recycle bins along hiking trails in country parks were removed at the end of 2017.
- ◆ The Country Parks Volunteer Scheme, launched in March 2010, continued to foster public participation in nature conservation in country parks and special areas. In 2017, more than 180 new volunteers were trained to provide services and support in conservation programmes. In 2017, Country Parks volunteers served over 28 332 hours.
- ◆ Various kinds of information and themed exhibitions were held at Country Park Visitor Centres/Education Centres to marshal public support and action for nature conservation. Some of these Centres also offered different education programmes for schools and the public to enhance their park experience. In 2017, these Centres received around 829 900 visitors.
- ◆ A total of 156 environmental impact assessment applications and studies on development projects were processed.
- ◆ Conservation and management projects were undertaken in the Mai Po Inner Deep Bay Ramsar Site. A two-year Management Agreement Project under the New Nature Conservation Policy was completed in February 2017 and supported by the Environment and Conservation Fund for another two years from March 2017 to February 2019. The project provided financial incentive to fishpond operators to conduct conservation

measures to enhance ecological value of fishponds and promoted public awareness of aquaculture in Deep Bay.

- ◆ Removal of invasive exotic mangrove species was continued in the Inner Deep Bay area. In 2017, over 11 000 *Sonneratia* trees were removed from the intertidal mudflat.
- ◆ A long-term territory-wide biodiversity survey was continued to update the ecological database for Hong Kong.
- ◆ Pamphlets were produced and distributed to enhance public awareness of conservation of wildlife in Hong Kong.
- ◆ The Department coordinated the implementation of the first Hong Kong Biodiversity Strategy and Action Plan 2016-2021 in collaboration with other government bureaux and departments, as well as external organisations.
- ◆ The Department organised the “Hong Kong Biodiversity Festival 2017” from October to December 2017 in partnership with 40 organisations (including non-governmental organisations, universities, private sectors and government departments) to promote biodiversity to the general public.
- ◆ The online database, the Hong Kong Biodiversity Online (www.hkbiodiversity.net), continued to provide the public with handy biological and ecological information. A Facebook page (www.facebook.com/hkbf.hk) was maintained to raise public interest and awareness on local biodiversity and to promote biodiversity-related events to the general public.
- ◆ The Department continued to promote public awareness of endangered species protection through the Endangered Species Resource Centre. In 2017, the Centre received over 17 600 visitors.
- ◆ A series of education and publicity activities on licensing control of endangered species were organised in 2017, including seminars, talks, exhibitions and publicity campaign through TV

and radio announcements in the public interest; and advertising materials in the Hong Kong International Airport and boundary control points.

- ◆ To raise public awareness of regulatory framework for genetically modified organisms (GMOs), the Department continued to distribute pamphlets to the general public and local farmers, as well as update the GMOs Register.
- ◆ Enforcement momentum to curb illegal trade in endangered species was maintained. In 2017, there were 189 cases of prosecution in respect of illegal imports, exports or possession of endangered species.
- ◆ Opened on 20 May 2006, the Hong Kong Wetland Park attracted over 480 000 visitors in 2017.
- ◆ An extensive school and public education programme on wetland conservation was carried out. In 2017, over 8 500 educational activities were organised at the Hong Kong Wetland Park for some 219 000 students and members of the public.
- ◆ Through the Wetland Park Volunteer Scheme, the Department continued to promote direct public involvement in wetland conservation. More than 700 volunteers were registered under the scheme in 2017 to provide guided interpretation service and support conservation work in wetlands. In 2017, volunteers served over 32 000 hours in the Hong Kong Wetland Park.
- ◆ The Hong Kong Wetland Park continued to implement energy saving measures. Exhibit items were replaced, by phases, by LED panels or other electrical devices with higher energy efficiency. During broad daylight, exhibition lights at the Atrium and the Viewing Gallery were switched off to fully utilise the natural sunlight. Moreover, operating hours of air conditioning systems in the office and the exhibition galleries were shortened. In winter, windows of the Viewing Gallery were opened for natural ventilation. Furthermore, office equipment, e.g. photocopier and water dispensers, were installed

with timer switches.

8. To comply with environmental legislation and reduce environmental impacts of our operations, we have adopted the following environmentally responsible measures:

- ◆ We have been using manual sectional switches to turn off parts of the lighting and mechanical ventilation systems in areas with sunlight and natural flow of air, as practicable.
- ◆ T8 luminaires lighting panels have been replaced with T5 model at our Headquarters in the Cheung Sha Wan Government Offices.
- ◆ We have kept in view possibilities to optimise condensing water temperature of cooling systems and to reduce the number of air conditioning pumps/machines and operating hours of air conditioning facilities for minimising energy consumption without affecting our normal operations.
- ◆ We have been exploring possible energy saving opportunities in the Department with the Electrical and Mechanical Services Department through established standing working mechanism.
- ◆ We have been deactivating/removing non-essential lighting, replacing light bulbs with lower wattage/energy efficient models and adjusting lighting hours of specific zones to suit our operational needs. Outstations have ceased procuring tungsten filament lamps for general lighting purposes since 2011.
- ◆ Since mid-2010, we have installed humidity & temperature sensors and photosensors for more effective control on market ventilation fans system and lighting system at the Cheung Sha Wan Wholesale Food Market and the Western Wholesale Food Market. The replacement work of lighting installation for both markets, started in mid-2010, was completed in August 2011. An electricity saving of 6% in 2017 as compared to the base year of 2009 was achieved.

- ◆ A 3-year energy-cum-carbon audit for office areas of the Cheung Sha Wan Wholesale Food Market was conducted in 2014. This audit reported, verified and analysed the greenhouse gas performance, as well as identified new energy saving opportunities. Energy audit results pointed out that energy consumption of an air-conditioning system took up the majority (about 80%) of the total energy consumption. Energy saving measures recommended by the audit consultant included replacing existing air-cooled chillers by high efficient type ones, replacing grade 5 refrigerators by grade 1 refrigerators, adding variable speed controls on chilled water pumps and air handling units, as well as de-lamping over-illuminated areas. Of these energy saving measures, two were implemented in 2015: T8 exit signs were replaced with LED exit signs on a corridor on 2/F of the Administration Block, resulting in electricity saving of 981 kWh per annum; the over-illuminated area (i.e. offices on 2/F of the Administration Block) was de-lamped, resulting in an electricity saving of 4,760 kWh per annum. Implementation of the remaining measures is in progress.

- ◆ An energy audit for the Western Wholesale Food Market was conducted in 2017. The energy audit results pointed out that energy consumption of an air-conditioning system took up the majority (about 80%) of the total energy consumption. Energy saving measures recommended by the audit consultant included replacing 506 high bay lights with induction lamps, replacing 138 metal halide lamps with LED floodlights, de-lamping in certain over-illuminated areas, switching off lightings during lunch time and switching off non-essential lightings in unoccupied rooms/areas. Of these energy saving measures, de-lamping and switching off lightings were put in effect, leading to an electricity saving of 2,852 kWh per annum. Implementation of the remaining measures is in progress.

- ◆ A series of green and energy saving initiatives (such as installing Photovoltaic (PV) system over covered walkways, solar hot water system, PV panel integrated lamp poles and motion detection sensors for lighting system) have been launched in the New Territories South Animal Management Centre and the

Shatin Plant Quarantine Station.

- ◆ We have been identifying premises (such as the Tai Lung Veterinary Laboratory) for energy saving opportunities by partitioning centralised air conditioning areas and shortening air conditioning hours in non-essential zones.
- ◆ Air conditioning and central lighting in our Headquarters have been programmed to shut down at 6:30 p.m. and 8:00 p.m. respectively to sustain energy saving.
- ◆ We have been replacing dilapidated electric appliances with new models with energy saving label.
- ◆ In 2017, “Good” Class Certificates under the Indoor Air Quality Certification Scheme have been obtained at our Headquarters, the Ticket Office and the Visitor Centre of the Hong Kong Wetland Park, the office on 1/F of the Cheung Sha Wan Wholesale Food Market, the office on 2/F of the Western Wholesale Food Market, the whole building (excluding 1/F) of the New Territories South Animal Management Centre and the office on G/F of the Kowloon Animal Management Centre.
- ◆ We have been encouraging our colleagues to adopt green specifications promulgated by the Environmental Protection Department for procurement of items. Particularly, we have incorporated environmental protection guidelines into all of the cleansing contracts for our premises.

Electricity, Petroleum, Paper and Envelope Consumption

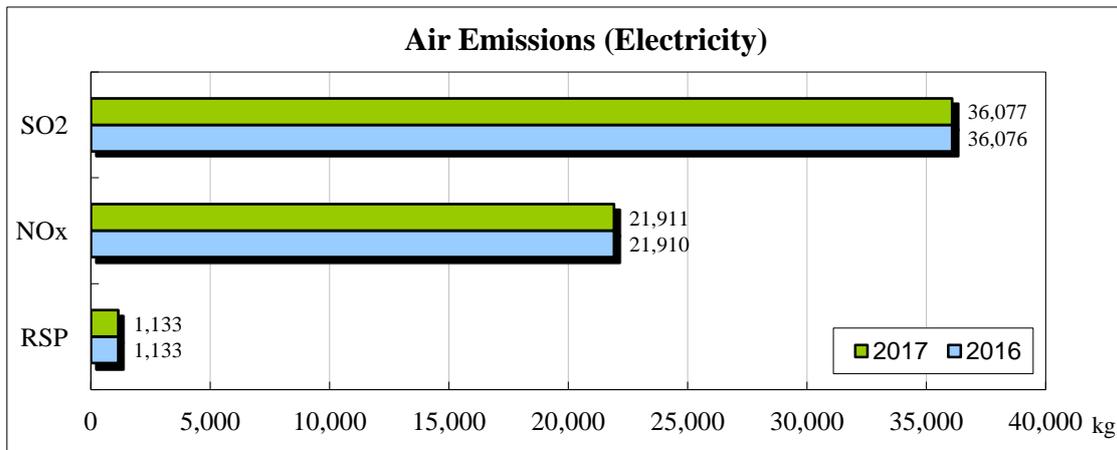
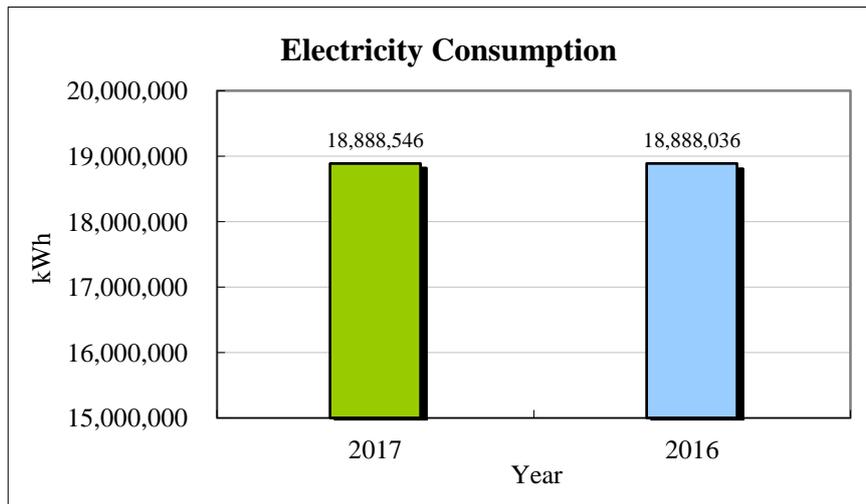
9. Major sources of our air emissions are electricity consumption and vehicles. The air emissions mainly include Sulphur Dioxide (SO₂), Nitrogen Oxides (NO_x) and Respirable Suspended Particulates (RSP).

(a) Electricity²

Our electricity consumption in 2017 was 18 888 546 kilowatt

² It excludes electricity consumption of offices accommodated within joint-user buildings under the management of the Government Property Agency.

hour (kWh), leading to emissions of 36 077 kilograms (kg) SO₂, 21 911 kg NO_x and 1 133 kg RSP. When compared with 2016, there was an increase of 510 kWh in electricity consumption in 2017, accompanied by a rise in emissions of SO₂ by 1 kg and NO_x by 1 kg. The emission of RSP remained unchanged.



(b) Electricity Consumption of our Government Buildings³

The following table tabulates electricity consumption of our government buildings in financial year (FY) 2013-14 and FY 2016-17:

³ Infrastructure and open space, for example, pump houses, toilets, barbeque sites, campsites, etc., are excluded.

	Electricity consumption (million kWh)	Electricity consumption under comparable operating conditions (million kWh)
FY 2013-14 (baseline)	17.09	Not applicable
FY 2016-17	17.24 (+0.9%)	16.62 (-2.8%)

(i) *Change in Electricity Consumption*

As set out above, the change in electricity consumption of our government buildings from FY 2013-14 to FY 2016-17 was +0.9%, mainly attributable to:

- ◆ additional freezers for storing increased number of perishable exhibits and items confiscated during law enforcement operations;
- ◆ increased fish culture research activities and newly set-up filtration systems;
- ◆ additional freezers for increased number of clinical samples; and
- ◆ newly set-up animal management office as well as new facility for training quarantine detector dogs.

(ii) *Saving in Electricity Consumption*

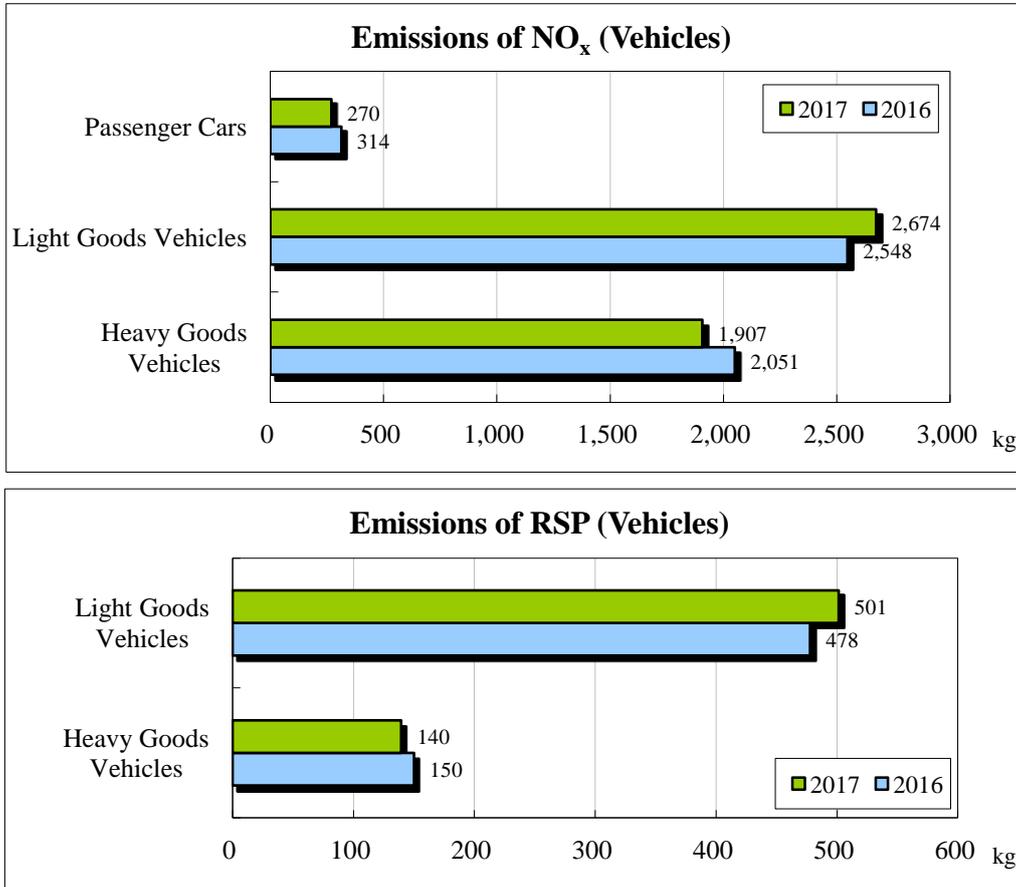
Under comparable operating conditions of FY 2013-14, our saving in electricity consumption in FY 2016-17 was 2.8%. Electricity saving measures taken include:

- ◆ suspending services of malfunctioning water pump within the country park area; and
- ◆ replacing air-conditioning systems in the Wetland Park Visitor Centre, one of the Country Park Management Centres and several visitor facilities in country parks.

(c) **Petroleum**

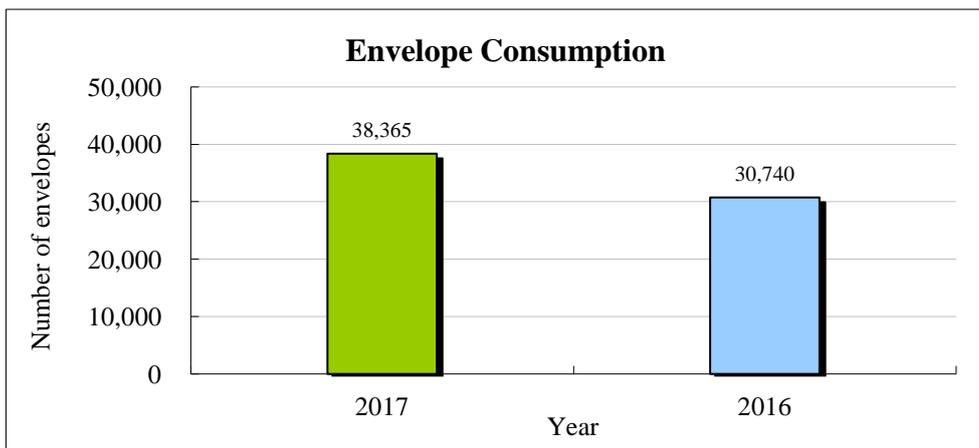
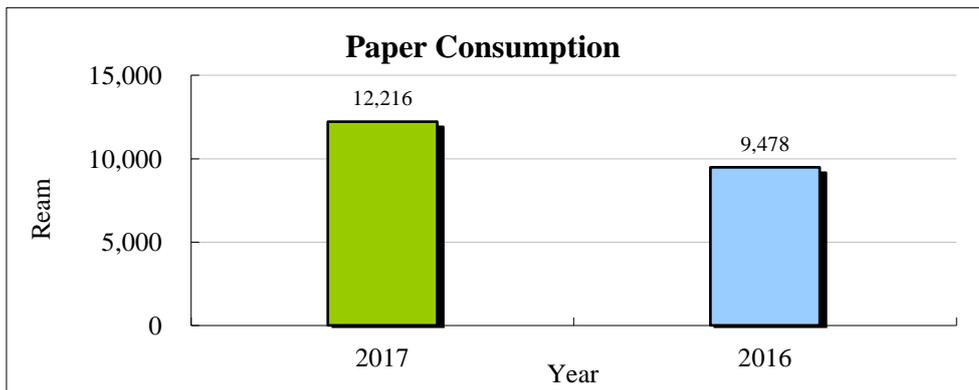
Total kilometers (km) travelled by our departmental vehicles in 2017 was 2 203 610 km (2 190 889 km in 2016). Average emissions of NO_x of our passenger cars, light goods vehicles and heavy goods vehicles were 270 kg (314 kg in 2016), 2 674 kg (2 548 kg in 2016) and 1 907 kg (2 051 kg in 2016) respectively. For RSP, 501 kg (478 kg in 2016) and 140 kg

(150 kg in 2016) were emitted by our light goods vehicles and heavy goods vehicles respectively, while emissions of RSP by our passenger cars were negligible.



(d) Paper and Envelopes

In 2017, we consumed 12 216 reams of paper and 38 365 envelopes in our daily operations. Compared with 9 478 reams and 30 740 envelopes in 2016, consumption of paper increased by 2 738 reams and consumption of envelopes rose by 7 625 in 2017.



10. We will continue our best endeavours to ensure the most efficient use of resources in the years ahead.

Green Housekeeping System

11. We have set up a departmental green management system since 1994. A Green Manager has been appointed to coordinate the green housekeeping effort in the Department. In addition, the Green Management Committee (with a Directorate Officer as the chairperson and representatives from our five operation Branches as members) has been established to steer in developing, implementing and monitoring green office practices, as well as to promote environmental awareness among our staff.

12. To assist the Green Manager in monitoring and implementing green policy and practices, a group of Assistant Green Managers (who are usually officers in charge of outstations) have also been appointed. They are responsible for monitoring green housekeeping performance of premises under their purview and reporting on a monthly basis.

13. To further strengthen the system and explore areas for improvement to ensure the green targets are achieved, the Environmental Audit Teams have been formed since 2000. Led by the Green Management Committee members, the Audit Teams are tasked to carry out green audits in our office premises. Committee members, as the Leaders of the Audit Teams, are required to report their audit results at regular Committee meetings.

Nurturing a Green Culture

14. We are committed to nurturing a green culture in our workplace. Green tips and relevant information are uploaded to the departmental intranet for access by our staff. To increase awareness and participation of staff in green management issues, colleagues are also encouraged to attend training and workshops on green management and energy conservation. Staff participation in the annual Staff Suggestion Scheme was encouraging in 2017. There were ten effective entries on green saving initiatives.

15. The 3-R principle of “Reduce, Reuse and Recycle” is practised in our offices to make efficient use of resources, as well as to reduce wastage and pollution as far as possible. Examples are as follows:

(a) Economising the use of paper

- ◆ Use both sides of paper
- ◆ Use recycled paper
- ◆ Collect usable single-sided paper
- ◆ Cut down on photocopying
- ◆ Set double-sided printing as default for all network printers in the Headquarters
- ◆ Discard the use of fax leader pages
- ◆ Use electronic mail and soft copies for exchange of documents
- ◆ Reduce the number of copies for distribution or circulation, if hard copy is absolutely needed
- ◆ Reduce the use of envelopes and reuse envelopes

(b) Conserving energy

- ◆ Check vehicles regularly to ensure that they are in good conditions for fuel efficiency
- ◆ Control fuel consumption and reduce emissions of

pollutants by encouraging staff to share pool car for duty visits and site visits

- ◆ Strictly comply with the requirement of switching off idling motor vehicle engines
- ◆ Participate proactively in the Government's electric vehicle trial tests
- ◆ Encourage adoption of more electric cars in the coming years
- ◆ Use public transport whenever possible, especially when the Air Quality Health Index is high
- ◆ Switch off electrical appliances when not in use
- ◆ Control individual light zones by using sectional light switches
- ◆ Lower illumination level of offices where appropriate
- ◆ Shorten central lighting hours
- ◆ Shade sun-exposed windows and keep exterior doors/windows closed as far as possible
- ◆ Maintain room temperature of all air-conditioned office at 25.5°C during summer months
- ◆ Use manual sectional switches to turn off parts of the lighting and mechanical ventilation systems as appropriate in areas of the wholesale food markets with sunlight and natural flow of air
- ◆ Replace dilapidated electric appliances with new electric appliances with energy saving labels

(c) Minimising waste and recycling

- ◆ Use refillable ball pens
- ◆ Separate collection of used and waste paper
- ◆ Encourage staff to use their own cups instead of paper cups
- ◆ Minimise the use of products that are not environmentally friendly, such as correction fluid
- ◆ Reuse loose minute jackets
- ◆ Proactively inform other bureaux/departments of the minimum number of hard copies of reports, newsletters, circulars, publications, etc. required and request soft copies whenever feasible
- ◆ Introduce recycle bins in offices to encourage separation

of wastes (paper, plastic bottles, aluminium cans, CDs, stationery and rechargeable batteries) for recycling

- ◆ Use biodegradable plastic bags where operationally feasible while reduce the use of non-environmentally friendly plastics or plastic bags in packaging souvenirs
- ◆ Collect used laser printer toner and ink-jet cartridges for recycling
- ◆ Circulate guidelines on green practices and waste avoidance to our staff to raise their awareness.

Way Forward

16. We are committed to enhancing our green performance. We will continue to explore green saving initiatives for our offices and encourage our staff to attend experience sharing sessions on the latest trend and technological advances in efficient use of resources and in reduction of air emissions.

17. The four wholesale food markets have accounted for about 50% of our total electricity consumption during the year. Given the significant reduction in electricity consumption in the markets after adopting power saving measures in the past few years, we will continue to explore and adopt further energy saving measures for the markets. We will regularly review and take on board energy saving measures with due regard to the ever-changing environment and new development in technology for further eliminating wastage and enhancing efficiency of the use of resources. Continuous efforts will be made to secure the support of our staff and market traders in taking part in the saving drive on an on-going basis.

18. To enhance staff awareness of resource efficiency, we will regularly remind our staff to observe the guidelines on green measures. We will continue to implement the annual Staff Suggestion Scheme to commend staff's contribution and achievement in resource saving, waste reduction, as well as setting good examples of fostering good habits in the workplace.

Comments and Suggestions

19. We welcome your comments and suggestions, which help us further improve our green performance. You may send us your views to/through:

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