



Environmental Protection

The Secretary for the Environment, who has overall policy responsibility for environmental protection, receives assistance on the formulation of new policies as well as management of environmental issues from the Permanent Secretary for the Environment, who is also the Director of Environmental Protection. The Advisory Council on the Environment advises the Government on measures for the prevention and abatement of pollution.

The Environment and Conservation Fund (ECF) provides grants to local non-profit making organisations for the implementation of educational, community waste recovery, research, technology demonstration and other projects in relation to environmental and conservation matters. The Environmental Campaign Committee, with funding from the ECF, organises events to promote public environmental awareness. The environmental resource and education centres set up by the EPD provide the public with easy access to environmental information.

Planning Against Pollution: Considerable emphasis is placed on preventing environmental problems by applying environmental impact assessment (EIA) procedures to ensure that environmental factors are considered at all stages of project planning and development.

At strategic level, key environmental information relating to major proposals has to be provided in submissions to the Executive Council and Policy Committee to facilitate decision-making. For some major proposals or plans, strategic environmental assessment might be conducted.

At local level, the environment is safeguarded through the application of the guidance provided in the Hong Kong Planning Standards and Guidelines.

The Environmental Impact Assessment Ordinance provides the legal framework for applying the EIA process to designated projects and implementation of agreed environmental measures through Environmental Permits.

To lead by example, all government bureaux and departments are required to publish annual environmental reports starting 2000. Private and government owned public corporations are encouraged to do likewise.

The EPD has been actively promoting environmental audit, environmental management system and environmental reporting to improve corporate environmental performance in both private and public sectors. To assist organisations in pursuing environmental management, useful guidelines are available at the EPD's website at <http://www.epd.gov.hk>.

Legislation and Pollution Control: The EPD is responsible for the enforcement of most of the measures contained in the seven main pollution control legislation.

Air: The control on air pollution is effected under the Air Pollution Control Ordinance. Major emitters, such as power plants and cement plants, are categorised as Specified Processes and subject to stringent licensing

control. Emission caps have been imposed on all power stations through licence conditions since 2005. Legislative amendments have also been made to facilitate the stipulation of emission caps for the power sector from 2010 onwards by a Technical Memorandum (TM) made under the Ordinance. Subsequent to the issue of the first TM in 2008, a new TM was promulgated in December 2010 to further tighten the emission caps of 2015 and after by 34 to 50 per cent with respect to the 2010 levels. For other processes, the installation and alteration of fuel burning equipment need prior approval from the EPD. To reduce air pollutants, limits are imposed on the sulphur content of fuels sold in Hong Kong. All commercial and industrial processes are required to use ultra low sulphur diesel under an amendment regulation that became effective on October 1, 2008. Subsidiary regulations control smoke from furnaces, open burning, construction dust, volatile vapour from petrol filling stations and dry-cleaning machines. Regulations controlling volatile organic compounds emitted from certain consumer goods, architectural paints and printing industry came into effect on April 1, 2007. The control has also been extended to vehicle refinishing paints, vessel and pleasure craft paints, adhesives and sealants in phases starting from January 1, 2010.

Specific control on asbestos work requires registration of asbestos consultants, laboratories, contractors and supervisors. Import and sale of blue and brown asbestos are banned. To promote good indoor air quality (IAQ), an IAQ Management Programme has been introduced. An important part of the programme is the IAQ Certification Scheme for Offices and Public Places. To enhance the quality of IAQ assessment and credibility of the IAQ Certification Scheme, only IAQ Certificate Issuing Bodies accredited by Hong Kong Accreditation Service can issue IAQ certificates and reports starting from February, 2008.

To tackle air pollution caused by vehicle emissions, the Government is implementing a number of programmes. These include introducing stringent vehicle fuel and emission standards that are practical and commercially viable, exploring clean alternatives to diesel vehicles, strengthening vehicle emissions inspection and tightening the control on smoky vehicles. The Government will tighten the emission standards for newly registered vehicles; from June 2012 onwards, they must meet Euro V standards. To reduce emission from diesel vehicles, all newly registered taxis must use liquefied petroleum gas (LPG) or unleaded petrol. Almost all taxis are now fuelled by LPG. The incentive scheme to encourage diesel public light buses to switch to LPG or electric light buses was completed in end 2005; around 65 per cent of the public light buses now run on LPG. Apart from using advanced smoke test by chassis dynamometer to test all smoky vehicles spotted under the Smoky Vehicle Control Programme, the Government is also making preparation for enhanced tests of emissions from petrol and LPG

vehicles. Ultra low sulphur diesel has become a statutory standard. It is a mandatory requirement to install particulate reduction devices for all pre-Euro diesel vehicles. Two schemes to incentivise early replacement of pre-Euro and Euro I diesel commercial vehicles with new vehicles meeting the prevailing Euro IV emission standard and to encourage the use of environment-friendly petrol private cars ended on March 31, 2010, about 16 000 eligible vehicles were replaced by new vehicles with the aid of the grant. From April 1, 2008, buyers of commercial vehicles meeting the qualifying standard for environment-friendly commercial vehicles, which is now set at Euro V level, will enjoy concessions for their first registration taxes. To further improve roadside air quality, the Government launched another one-off grant scheme on July 1, 2010 to incentivise early replacement of Euro II diesel commercial vehicles for a period of 36 months. On December 1, 2007, the Government offered a concessionary duty rate of \$0.56 per litre for Euro V diesel which has a sulphur content of 0.001 per cent. The Government subsequently waived entirely the fuel tax for Euro V diesel on July 14, 2008. On July 1, 2010, the Government tightened the statutory specifications of motor vehicle diesel and unleaded petrol to Euro V standards and implemented a statutory control on the quality of motor vehicle biodiesel. Euro V motor vehicle fuels are now supplied at all petrol filling stations in Hong Kong. On March 30, 2011, the Government set up a \$300 million Pilot Green Transport Fund to incentivise trials of green and innovative technologies applicable to the public transport sector and goods vehicles. Moreover, The Motor Vehicle Idling (Fixed Penalty) Ordinance which introduced a statutory prohibition against idling vehicles with running engines came into operation on December 15, 2011.

Joining the global effort to protect the ozone layer, Hong Kong has honoured the full obligations of the Montreal Protocol and its subsequent amendments through the enforcement of the Ozone Layer Protection Ordinance. To comply with the latest requirement under the Protocol, Hong Kong has banned the import of products containing HCFCs into Hong Kong by phases starting from January 1, 2010.

To further improve the air quality for better protection of public health, the Government has drawn up a final proposal for updating the Air Quality Objectives and a host of air quality improvement measures to achieve the new Objectives. The proposal will be deliberated by the Legislative Council. In parallel, the Government is introducing further air quality improvement measures that are already supported or likely supported by the community to bring early improvement to the air quality.

Waste: The Waste Disposal Ordinance (WDO) provides a framework for control on the collection, treatment and disposal of all waste types. The disposal of livestock waste is under the regulation of the Ordinance. The Government has also introduced cradle-to-grave control on chemical waste and clinical waste under the Ordinance. Moreover, the ordinance enables permit control on import and export of waste in line with the requirements under the Basel Convention. Furthermore, with effect from April 2006, import of hazardous waste from developed countries is banned.

Under the principle of "polluter pays", waste producers are required to contribute to waste treatment cost. Charging schemes have been introduced under the respective Ordinances to charge for the treatment of chemical, clinical and MARPOL waste at the Chemical Waste Treatment Centre. Private sector users of refuse transfer stations are required to pay for the service. The same principle is also applied to the disposal of construction waste at the various facilities.

The Dumping At Sea Ordinance controls marine dumping activities in line with the requirements under the London Convention.

Water: The Water Pollution Control Ordinance provides for declaration of 10 Water Control Zones and four supplementary Water Control Zones to cover the whole area of Hong Kong. All discharges into these zones have been subject to licensing control. A Technical Memorandum of Effluent Standards provides transparency in setting licence limits. They are designed to enable achievement of the Water Quality Objectives.

Noise: The Noise Control Ordinance provides for the control on noise from construction sites, domestic premises and public places, industrial and commercial premises, motor vehicles, intruder alarm systems as well as specified noisy equipment. Noise from general construction works at night and on public holidays is controlled through a permit system which has essentially banned non-essential noisy construction works in built-up areas. All percussive piling works require a permit and are prohibited at night and on public holidays. Noisy diesel, steam and pneumatic piling hammers have been phased out in built-up areas. Hand-held breakers and air compressors must comply with stringent noise emission standards and be fitted with noise emission labels. The management of bodies corporate is held personally liable for repeated noise offences.

Noise from domestic premises and public places is controlled by the police on a reasonableness approach, whereas noise from industrial or commercial premises is controlled by the EPD through noise abatement notices. To minimise traffic noise, newly registered vehicles including motor cycles are required to comply with stringent noise emission standards.

Enforcement of the above pollution control ordinances is undertaken by four Regional Offices and the Territorial Control Office of the EPD through investigation of pollution complaints, inspection and licensing of pollution sources, issuing pollution abatement notices and prosecution of offenders. The offices have proved to be very effective in tackling local pollution concerns and strengthening communication with the local communities on the government's environmental protection work. In parallel, the Business Facilitation Office also operates a Compliance Assistance Centre and develops partnership with the trade and industry to assist in law compliance and pollution prevention, promote corporate environmental management as well as raising environmental awareness of the general public.

Sewage and Waste Collection, Treatment and Disposal: A sewage disposal strategy has been adopted by the Government and 16 sewerage master plans (SMPs) devised to cover the whole territory. Most of these SMPs have been reviewed in the light of the changing population projections and associated project developments proposed for the HKSAR.

A major deep tunnel collector system and treatment works handle sewage generated from all districts around Victoria Harbour Area. So far, 24 kilometres of large tunnels under the central urban area and a sewage treatment works at Stonecutters Island with a capacity to provide chemically enhanced primary treatment to an average dry weather flow of up to 1.7 million cubic metres of sewage per day, were brought fully into operation in late 2001. This system has resulted in significant water quality improvements in many parts of the harbour. The construction of the next phase of the system was started in 2009. This will comprise a further 21 kilometres of tunnel up to 160 metres below sea-level to collect the remaining sewage generated around Victoria Harbour for delivery to an expanded Stonecutters Island Sewage Treatment Works, which will be capable upon completion in 2014 of providing treatment and disinfection to an average dry weather flow of about 2.45 million cubic metres per day. In order to provide early improvements to the water quality in the western waters and the beaches along the Tsuen Wan

coast, part of the disinfection facilities has been advanced and started operation in early 2010.

The sewerage system is also being extended to serve more rural village areas. As of September 2011, a population of about 94 700 in the rural areas has been connected to public sewers.

The EPD is the waste disposal authority responsible for planning and development of waste treatment and disposal facilities.

In 2010, the three large modern landfills in the New Territories received and disposed of a daily total of about 9 110 tonnes of municipal solid waste including domestic, commercial, and industrial waste, in which 5 700 tonnes were containerized waste transported to the landfills in bulk from six refuse transfer stations in urban areas and seven refuse transfer facilities at outlying islands. Construction waste disposed of at landfills amounted to a further 3 580 tonnes per day in 2010.

The Chemical Waste Treatment Centre on Tsing Yi Island has treated more than 881 000 tonnes of chemical waste since the plant commissioned in 1993. Moreover, it also incinerated more than 840 tonnes of clinical waste since its first reception of the waste in August 2011. A storage facility for low level radioactive waste on Siu A Chau was commissioned in 2005. Livestock waste collected from local farms and horse stable waste are treated at the Ngau Tam Mei Animal Waste Composting Plant. A sewage sludge incineration facility is being constructed at Tsang Tsui, Tuen Mun and targeted for commissioning in 2013. There are 13 closed landfills in Hong Kong; their restoration works have been completed and the sites are safe for beneficial use by the public. A soccer-cum-baseball pitch at Sai Tso Wan Landfill was opened in 2004. A BMX Park, built on Gin Drinkers Bay Landfill, was opened in 2009 and used as the venue for the BMX event of the 2009 East Asian Games. Two recreation parks developed on Jordan Valley Landfill and Ngau Chi Wan Landfill were opened to public in 2010. Part of the Ma Yau Tong Central and Ma Yau Tong West Landfills were developed into two sitting-out-areas and opened to public in 2011. Recreational facilities will be progressively developed at other restored landfills.

Municipal Solid Waste Management: In order to handle the imminent waste management issue, the Government announced in 2011 a comprehensive strategy and action plan. The strategy focuses on waste avoidance and minimization; reuse, recovery and recycling; and bulk waste treatment and disposal. In respect of waste recycling, the Government has introduced a series of measures including the promotion of the Source Separation of Waste Programme, on-site composting of food waste. With these measures, the Government is committed to revise upward the waste recovery target to 55 per cent by 2015.

Enshrining the principle of “polluter pays”, Producer Responsibility Scheme (PRS) will create economic incentive for waste reduction, recovery and recycling. The Product Eco-responsibility Ordinance (Cap. 603) was enacted in July 2008 to provide the legal basis for introducing PRS in Hong Kong. An environmental levy on plastic shopping bags was implemented in July 2009 as the first PRS introduced under the Ordinance. Given its success in reducing the indiscriminate use of plastic shopping bags, the EPD is expediting its extension to cover all retailers. The EPD is also preparing the introduction of another PRS to mandate the proper management of waste electrical and electronic equipment.

For unavoidable and non-recyclable waste, the department proposes to develop a number of waste treatment facilities. It includes state-of-the-art multi-technology integrated waste management facilities with advanced incineration technology as the core treatment technology to substantially reduce the volume of such

waste before final disposal and to recover energy from the waste. The EPD has completed the environmental impact assessment study in 2011 for the integrated waste management facilities (IWMF) for Hong Kong and is pursuing the development of the first phase of IWMF. In parallel the department is planning the organic waste treatment facilities for the recycling of food waste, which is a main constituent of the municipal solid waste in Hong Kong. The first phase of the organic waste treatment facilities would be located at Siu Ho Wan, North Lantau and it is anticipated to be commissioned in 2014 for recycling source separated food waste to useful compost and biogas products. The second phase of the organic waste treatment facilities is planned to be developed at Sha Ling of the North District, and the engineering feasibility and environmental impact assessment studies for this development has already commenced in late 2011.

Notwithstanding EPD’s efforts on waste reduction, recovery and recycling, the fact remains that the three existing landfills will be filled up in mid to late 2010s.

The EPD is proceeding with work on the three landfill extension schemes for the final repository of waste that cannot be recycled or treated such as mixed construction waste and residues after treatment.

Apart from the Government’s efforts in waste management, local recycling operations are playing an important role. In 2010, 3.60 million tonnes of recyclable waste were recovered with an export value of \$8.6 billion. The EPD will continue to provide long-term land at affordable cost at the EcoPark in Tuen Mun for the recycling industry with a view to encouraging investment in more advanced technologies and value-added processes in Hong Kong. All six lots in Phase 1 of the EcoPark have been leased and tenants have commenced their operations progressively. The first batch of the Phase 2 lots was also awarded in August 2011. Together with the two recycling centres run by non-profit organisations in Phase 2, there are altogether 14 tenants in the EcoPark for recycling of waste cooking oil, waste wood, waste metals, waste electrical and electronic equipment, waste plastics, waste batteries, waste rubber tyres and waste construction materials.

Environmental Monitoring and Investigations: The EPD has introduced environmental monitoring schemes and specific investigations to establish an objective basis for local action.

Water quality monitoring includes 82 routinely-sampled stations for inland waters, 94 for marine waters and 60 for bottom sediments. EPD monitors the water quality of 41 gazetted beaches closely during the bathing season and reports on the latest beach water quality weekly.

Air pollutant levels are measured continuously at 11 general and three roadside monitoring stations. An Air Pollution Index (API) was introduced in June 1995 to provide a simple and concise indication of air quality. From July 1999, information on API has been released every hour via the Internet and telephone hotline.

Surveys of waste generation throughout Hong Kong have been conducted since 1981 to collect information needed for planning future waste disposal facilities.

Most major development projects are subject to environmental monitoring and audit. In 2007, the EPD oversaw about 120 such programmes to ensure that recommendations in the EIA were strictly implemented and appropriate mitigation actions were promptly taken.

Regional and International Co-operation: To tackle regional environmental issues, Hong Kong has been co-operating with its Mainland partners through the Joint Working Group on Sustainable Development and Environmental Protection between the HKSAR and Guangdong Province. The two governments signed an Environmental Co-operation Agreement in August

2009, including key co-operation areas in regional air and water quality; resource recovery and reuse; nature conservation; cleaner production, and green business development etc.

The two governments have drawn up a Regional Air Quality Management Plan with abatement measures which focus on power plants, motor vehicles and the more polluting industrial processes. Since November 2005, a regional air quality monitoring network with 16 monitoring stations covering the entire Pearl River Delta (PRD) has started daily reporting of a Regional Air Quality Index to the public. We are seeing fruitful outcome of efforts taken by both sides. The monitoring results of the network from 2006 to 2010 show a substantial reduction in the average annual concentration of the main pollutants in the region. To strengthen this collaboration further, the two governments are undertaking a joint study on the emission reduction arrangements for the next phase in the PRD region.

The EPD, in collaboration with the Guangdong authorities and the major industry associations in Hong Kong, launched a Cleaner Production Partnership Programme in April 2008. The Government has committed more than \$93 million to take forward this five-year programme, which provides technical support to Hong Kong-owned factories in the PRD region to facilitate adoption of cleaner production technologies and practices. So far more than 1 700 funding applications were approved. To further galvanise the efforts in promoting cleaner production, the two governments jointly launched the Hong Kong - Guangdong Cleaner Production Partners Recognition Scheme in August 2009 to give recognition to the efforts of Hong Kong-owned factories and commercial enterprises in pursuing cleaner production. A total of 234 enterprises have so far received the commendation.

In August 2008, the governments of HKSAR and Guangdong Province reached a consensus to map out a strategy to transform the PRD region into a green and quality living area. Together with Macao, the three governments jointly launched a public consultation on September 1, 2011 on the initial proposals for the Regional Cooperation Plan on Building a Quality Living Area. Initial cooperation directions and proposals in the areas of environment and ecology; low-carbon development; culture and social living; spatial planning; and transportation systems were suggested. The Cooperation Plan will be finalised by taking account of views and feedback received.

Hong Kong and its neighbour Shenzhen, meanwhile, are jointly implementing action programmes to reduce pollution of the adjoining water bodies, including Deep Bay and Mirs Bay. The EPD and the Shenzhen Environmental Protection Bureau also entered into agreements to strengthen co-operation on environmental protection and promotion of cleaner production in December 2007 and November 2008 respectively.

The Stockholm Convention on Persistent Organic Pollutants (POPs) became effective to the HKSAR in November 2004. The HKSAR Implementation Plan is included in China's National Implementation Plan. The Rotterdam Convention on prior informed consent of hazardous chemical trades became effective to the HKSAR in August 2008. The Hazardous Chemicals Control Ordinance, came into operation in April 2008 to regulate non-pesticide hazardous chemicals, including those subject to the Stockholm Convention and the Rotterdam Convention.

To address the climate change challenge, the HKSAR joins international efforts, as part of the People's Republic of China, under the United Nations Framework Convention on Climate Change and its Kyoto Protocol. The HKSAR has also joined the C40 Cities Climate Leadership Group (C40) to enhance cooperation with participating cities to combat climate change. Apart from organising the C40 Hong Kong Workshop in November 2010, Hong Kong became a member of the C40 Steering Committee in May 2011, which is responsible for setting the direction of work of the C40.

Hong Kong is moving along the "low carbon" pathway to become an economy based on low energy consumption and low pollution. A host of actions are being pursued to enhance energy efficiency, use clean fuels, rely less on fossil fuels and to promote a low carbon economy. To chart the way forward as a low carbon city, in September 2010, the Government launched a public consultation on Hong Kong's climate change strategy and action agenda. A carbon intensity reduction target of 50 to 60 per cent by 2020, as compared with 2005 level, was proposed. An action agenda comprising of measures to maximise energy efficiency, green road transport; promote use of clean fuels for motor vehicles; turn waste into energy; and revamp fuel mix for electricity generation was also recommended. By implementation of the proposed mitigation measures, we aspire to be one of the greenest cities in China.