環境保護署
Environmental Protection Department

ENVIRONMENTAL PERFORMANCE REPORT 2025
環保工作報告 2025

CONTENT

FOREWORD BY THE DIRECTOR OF ENVIRONMENTAL PROTECTION

In 2024, the Environmental Protection Department (EPD) continued its efforts on various fronts, aiming to make Hong Kong a greener and more liveable city.

Municipal Solid Waste (MSW) remains a formidable challenge for this densely populated city. We have been working full steam on developing advanced waste-to-energy facilities and mobilising the entire community to practise waste reduction and recycling, with a view to moving away from the reliance on landfills for direct disposal of MSW by around 2035, as stipulated in the Waste Blueprint for Hong Kong 2035. Integrated Waste Management Facilities Phase 1 (I·PARK1) is under construction and will progressively begin operation by the end of 2025. The facility can treat up to 3,000 tonnes of MSW per day, significantly reducing waste volume by 90% while recovering energy from waste to fulfil its daily operational needs and export surplus electricity to the power grid. To promote waste reduction at source, we launched the regulation on disposable plastic products on Earth Day 2024. With the trades and the public responding positively, it is estimated that this initiative can alleviate the pressure on our landfills by more than 60 million sets of disposable cutlery every year. Moreover, we published the "Practical Guides on Packaging Reduction and Management" for eight trade sectors and launched the Packaging Reduction Charter Scheme to encourage sustainable packaging practices. We also engaged mega event organisers in adopting green measures through the latest edition of "A Waste Reduction Guidebook for Large Scale Event Organisers". In order to facilitate recycling by the public, we continued to deploy smart technologies to collect and recycle food waste and general recyclables while expanding the GREEN@COMMUNITY network, with a view to providing convenient recycling facilities across the territory and incentivising public participation through the GREEN$ Electronic Participation Incentive Scheme.

We pursued a multi-pronged approach throughout the year to tackle pollution head-on. In air quality management, we established the Ground-based Atmospheric Remote-sensing Network to enhance the accuracy of air quality simulations and forecasts, and to facilitate the formulation of regional emission management strategies. Besides, the first vessel under the Pilot Scheme for

Electric Ferries commenced trial in December, aiming to reduce emissions and noise on harbour routes. To protect noise sensitive receivers, we took a proactive approach in eliminating potential noise nuisance from the Kai Tak Sports Park to ensure community harmony. In addition, new generation Low Noise Road Surfacing Material has been used for new road projects, while smart e-platforms were developed to revolutionise noise impact assessment and construction noise permit applications. To monitor water quality effectively, the Phytoplankton Community Integrity Index was developed for coastal eutrophication assessment, and the Beach Water Quality Forecast System was launched to supplement the existing monitoring programme. We also succeeded in tackling the nearshore odour problem of Victoria Harbour through the use of smart enforcement tools. By the end of 2024, the overall pollution load at the relevant stormwater outfalls was reduced by 87%, surpassing the target set in the 2022 Policy Address.

To tie in with the national "dual carbon" goals, Hong Kong strives to achieve carbon neutrality before 2050 and reduce carbon emissions from the 2005 level by half before 2035. Key measures adopted by the EPD include advancing environmental assessment and planning via the Hong Kong Environmental Database to strengthen and expedite Environmental Impact Assessment (EIA) processes, managing the environmental impacts of our operations through reducing electricity consumption, green procurement, etc. Guided by Hong Kong's Climate Action Plan 2050, we will continue to implement policies and initiatives for Hong Kong to achieve the targets.

It is encouraging to see that our commitment to service excellence and innovation has been acknowledged. We were granted The Ombudsman's Awards 2024 in recognition of our efforts in improving the odour problem along the waterfronts of Tsuen Wan and Kowloon City. Our "5G Unmanned Water Sampling Boat and Mesh Network Sampling Robot Squad" project earned the Platinum Award (Innovation) of the Chartered Institution of Water and Environmental Management HK 2024 Innovation & Sustainability Awards, while our Web-based Platform of Construction Noise Management Plan was awarded a Certificate of Merit at the 2023-24 Hong Kong Awards for Industries (Innovation and Creativity Category). Additionally, our popular GREEN$ App was selected as the 2024 Google Play "Best App for Good" in Hong Kong.

While we have achieved notable milestones this year, we recognise that we must work even harder taking note of the environmental challenges that lie ahead. The EPD will continue to take forward visionary policies and foster collaboration across sectors to build a sustainable future for our city.

Dr CHUI Ho Kwong, Samuel, JP
Director of Environmental Protection

SCOPE OF REPORT

This Environmental Performance Report covers 1 January - 31 December 2024 unless otherwise stated. It provides an overview of the efforts of the EPD to reduce the impacts of our internal operations, including office operations and waste management facilities, and contribute to sustainable development in Hong Kong.

This report is published in English and Chinese on our website to reduce paper consumption. All monetary figures are in Hong Kong dollars.

Our Vision and Mission

OUR VISION

In his important speech on 1 July 2022, President Xi Jinping brought forward "four proposals", emphasising that "the people's desire for a better life is the goal we strive to realise." Today, the people of Hong Kong share this desire for a better life. It is the Government's duty to act pragmatically, uphold people's trust, prioritise the desire of the entire community, especially the general public, in its governance, and confront challenges with greater resolve and more effective initiatives.

Guided by President Xi's "four proposals", the EPD is dedicated to

- creating a healthy and pleasant environment for Hong Kong, and
- sustaining such an environment for our future generations.

OUR MISSION

Is to contribute towards realising this vision by applying our professional knowledge and judgment, proactively integrating into the overall national development and drawing on international experience

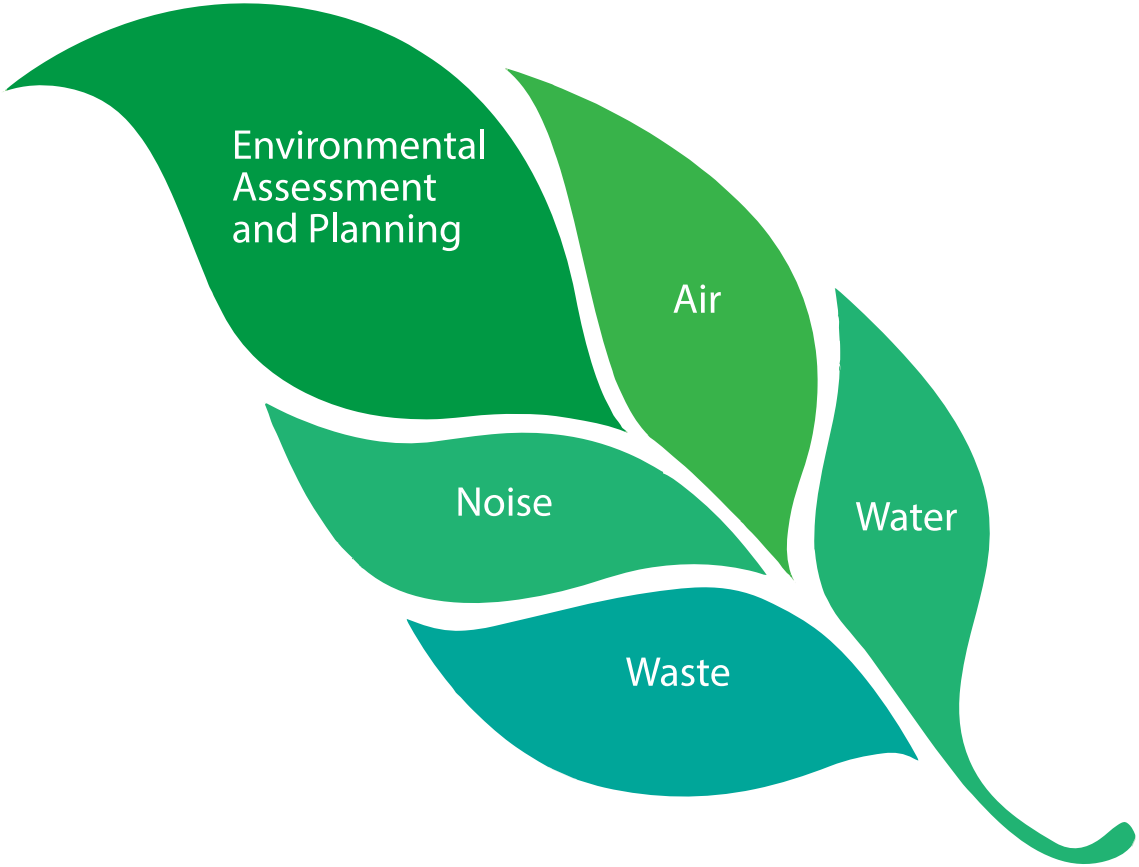
- to assist in formulating policies and plans on environmental protection and the promotion of sustainable development to further improve governance;
- to provide first-class physical infrastructure for the treatment and disposal of waste and wastewater, continuing to create strong impetus for growth;
- to raise community awareness of and promote public support for issues related to environmental protection and sustainable development, working together to safeguard harmony and stability;
- to promote collaborative efforts through regional and international co-operation to raise Hong Kong's competitiveness;
- to implement environmental protection related legislation and plans, earnestly addressing people's concerns and difficulties in daily life; and
- to administer robust environmental impact assessment in the planning of new developments and major projects.

(See Appendix I for further details)

Our Priorities and Organisation

Our Priorities

The EPD is responsible for implementing Government's environmental policies; enforcing environmental legislation; monitoring environmental quality; providing collection, transfer, treatment and disposal facilities for various types of waste; advising on the environmental implications of town planning and new policies; handling pollution complaints and incidents; and raising awareness and support in the community for environmental initiatives. These responsibilities spread across five programme areas: Air, Noise, Water, Waste, and Environmental Assessment and Planning.



Organisation Structure

AIR Pilot Scheme for Electric Ferries

Compared to conventional diesel ferries, electric ferries do not emit air pollutants or diesel odour, and are quieter during sailing. As Hong Kong moves towards net-zero electricity generation, the adoption of electric ferries will help reduce carbon emissions. As such, the Government has earmarked HK$350 million to launch the Pilot Scheme for Electric Ferries ("Pilot Scheme") to test out the technical viability of adopting electric ferries in Hong Kong. Under the Pilot Scheme, the Government subsidises four in-harbour ferry operators for the manufacturing costs of four electric ferries and associated charging facilities, as well as the operational, maintenance and repair expenditures incurred by the operation during the initial 24-month trial period.

"Xin Ming Zhu XXXIX", operated by Sun Ferry Services Company Limited, is the first electric ferry under the Pilot Scheme and has commenced the 24-month trial since December 2024, plying the route of North Point, Hung Hom and Kowloon City. The electric ferry "Xin Ming Zhu XXXIX" is equipped with high-efficiency lithium iron phosphate batteries, which only need to be charged at night to meet the daily voyage demands. In addition, it is built with lightweight carbon fibre material to reduce energy consumption and equipped with solar panels to provide additional power supply.

The remaining three electric ferry operators are taking their full effort on the shipbuilding or tendering works with a view to commencing the trial of the electric ferries as soon as practicable. Meanwhile, to accommodate the charging needs of electric ferries, charging facilities have been installed at North Point, Hung Hom and Kwun Tong Piers.

The Government has established an inter-departmental working group to work out the details of the Pilot Scheme, oversee its progress and collect data to evaluate the operational effectiveness and carbon reduction performance of electric ferries, providing a reference for the wider adoption of electric ferries in the future.

The first electric ferry "Xin Ming Zhu XXXIX" under the Pilot Scheme for Electric Ferries

The first electric ferry "Xin Ming Zhu XXXIX" is equipped with high-efficiency lithium iron phosphate batteries

Developing 3-D Air Quality Monitoring Network

Hong Kong's air quality is influenced not only by local emissions but also by emissions from the Pearl River Delta region. Pollutants can also be formed through chemical reactions in the atmosphere and be transported over long distances at high altitudes. To tackle regional pollution issues, it is essential to quantify the sources of pollutants near the ground and understand their transport in the upper atmosphere.

The EPD has adopted new technology to establish a Ground-based Atmospheric Remote-sensing Network (GARNET), which allows real-time monitoring of air pollutant concentrations and meteorological data at altitudes up to several kilometers above the ground, complementing traditional air quality monitoring stations that focus on near-surface measurements. This data helps to enhance the accuracy of air quality simulations and forecasts and provides a more solid scientific basis for formulating appropriate emission management strategies to address regional pollution issues.

The EPD has established the layout of the GARNET and has been progressively setting up monitoring stations, procuring Light Detection And Ranging (LiDAR) equipment, developing operational modes, and preparing standard operating procedures along with quality assurance/quality control plans. The GARNET consists of five LiDAR monitoring stations, including four stations located around the periphery of Hong Kong (East, South, West, and North) to collect data on the trajectories and characteristics of air masses entering and leaving Hong Kong. The fifth monitoring station (Urban) is located in the city center to monitor the impact of urban buildings on microclimates and pollutant dispersion. Each monitoring station is equipped with advanced remote-sensing equipment, including ozone LiDAR, particulate matter LiDAR, and wind LiDAR.

The East, North, and Urban stations have been in operation since 2024, while the South and West stations also commenced operation in 2025.

North station @ Heung Yuen Wai

NOISE

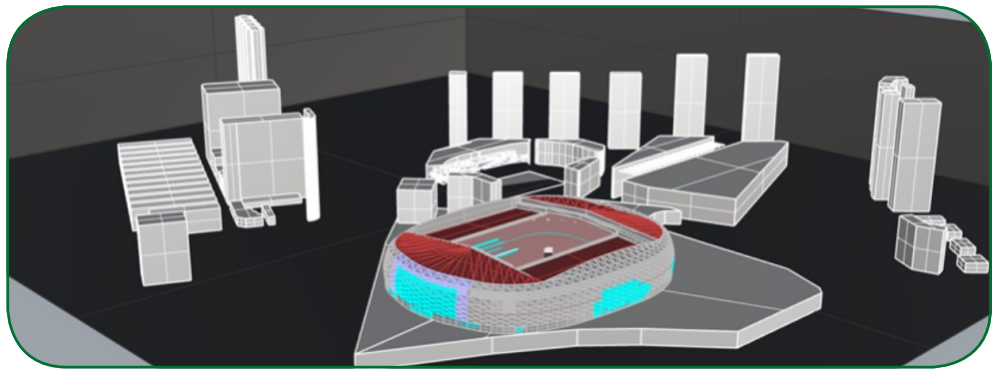
Ensuring Community Harmony through Proactive Noise Management

The Challenge

Can you imagine the challenges faced by the planners and designers in planning a mega open entertainment venue in the heart of the city? As a modern metropolis, Hong Kong needs a large-scale cultural and entertainment venue to host national and international events to promote Hong Kong's vibrancy. The Kai Tak Sports Park, opened in March 2025, features a main stadium with a gigantic retractable roof and a capacity of some 50,000 spectators, a 10,000-seat indoor sports arena, and a public sports ground accommodating nearly 5,000 spectators. The concerned parties have leveraged on the most advanced equipment and technology in noise management, helping to achieve a win-win situation, i.e. satisfying the need of high sound levels inside the venue, while ensuring "quietness" for neighbouring residents outside the Sports Park.

The Planning of Kai Tak Sports Park

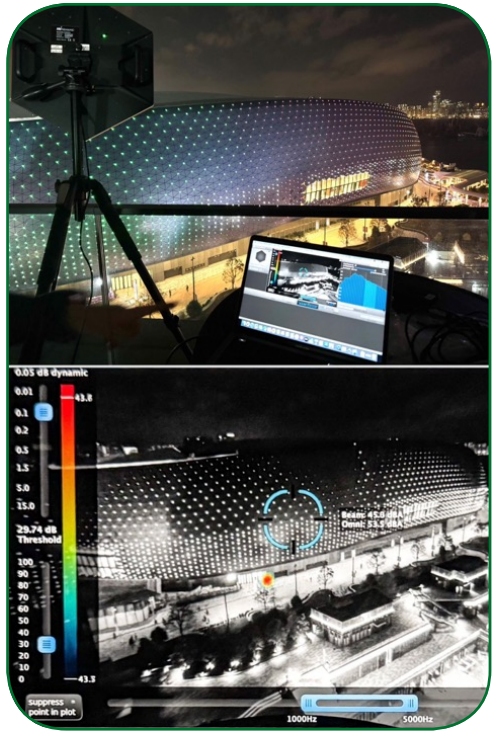
To ensure surrounding residential areas are unaffected by noise, the Kai Tak Sports Park had purposely adopted many strict noise control measures right at the start of the project planning. The goal was to contain the noise from activities within the venues without causing disturbance to nearby residents. The designers utilised 3D simulation software to analyse noise propagation under different event scenarios (e.g. pop/rock concerts, sports events), and one of the distinctive mitigation measures is the gigantic retractable roof, which can be opened or closed according to the needs. The overall noise reduction afforded by the high-grade sound insulation in both the external walls and the roof structure amounts to some 40 dB(A), which would mean that you would not hear "anything" outside the venue even when there is a pop/rock concert playing inside the Main Stadium.



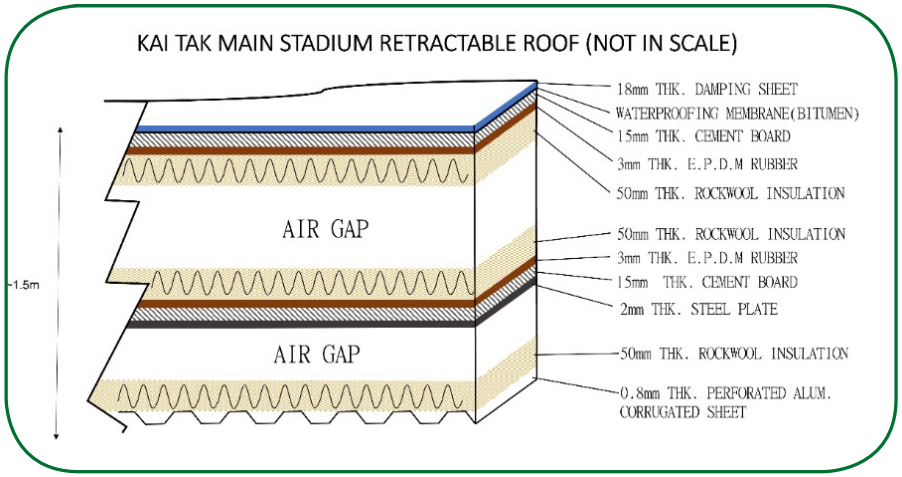
3D noise prediction model diagram of venues and nearby residences

Facilitating the Development of the Sports Park

The EPD has proactively maintained close liaison and conducted on-site meetings with the Culture, Sports and Tourism Bureau, and the Kai Tak Sports Park Operator since mid-2024. The EPD helped review arrangements for venue testing activities, recommended noise monitoring by the operator during these tests, and provided professional advice on various arrangements. The EPD also participated in the commissioning and external monitoring of the noise during the trial music events. Advanced acoustic cameras were used for noise monitoring and analysis to make sure that high quality data and records were obtained. With the collaborative efforts of all parties concerned, the Sports Park opened smoothly on 1 March 2025, with no complaints received for the music events held with the roof closed.



Using an advanced acoustic camera for noise monitoring and analysis



Simplified diagram of Main Stadium retractable roof

EPD personnel monitoring noise levels at a nearby housing estate

New Generation Low Noise Road Surfacing Material

Promising Solution for Mitigating Road Traffic Noise

Due to the high population, density of developments and traffic needs, the road traffic noise remains a concern in Hong Kong. With limited options for constructing barriers and maintaining distance between roads and noise sensitive receivers, the "quieter road surface" presents a promising solution for the issue. However, challenges related to durability and maintenance persist. The EPD and the Highways Department (HyD) are actively collaborating to develop suitable materials to alleviate road traffic noise impact effectively while accommodating Hong Kong's unique road conditions.

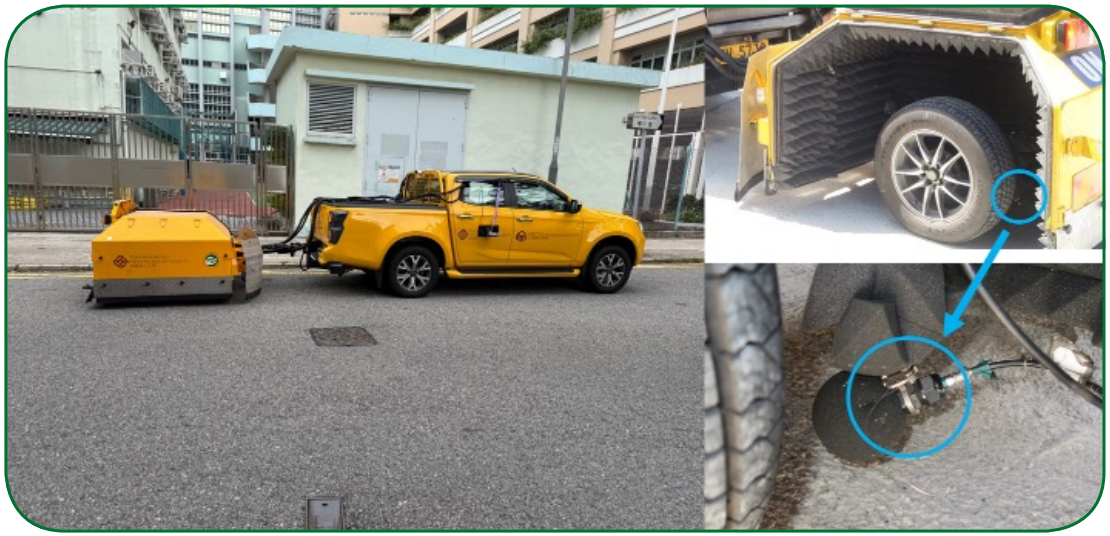
Evolution of Low Noise Road Surfacing (LNRS) in Hong Kong

The evolution of LNRS in Hong Kong began in 1987 with initial trials using Polymer Modified Friction Course (PMFC) for high speed roads. To enhance performance, the Highly Modified Friction Course (HMFC) was developed and now is used as the standard surfacing material for new road projects. Further research and trials have been expanded to local roads, where the LNRS material, Polymer Modified Stone Mastic Asphalt (PMSMA6), was developed and demonstrated sustained noise reduction. So far, under the low noise resurfacing program, around 110 local road sections with a total length of 20 km have been resurfaced with various types of low noise materials, benefiting approximately 150,000 citizens.

HMSMA6 at local road section – Ying Hei Road, Tung Chung

New Generation Low Noise Road Surfacing Material for Local Roads

The EPD collaborated with the HyD to further improve the durability performance of PMSMA6 for local road applications and to develop a new generation of road surfacing material named HMSMA6 – Highly Modified Stone Mastic Asphalt, with a maximum aggregate size of 6 millimetres. HMSMA6 is found to be more durable than previous materials and is suitable for local asphalt roads that include parking areas, run-in/run-out sections, and gentle or inclined roads with smooth traffic. By the end of 2024, approximately 18 local road sections were resurfaced with HMSMA6. The EPD evaluated the noise reduction performance and found that the material showed consistent and stable noise reduction performance, achieving a noise reduction of about 2.5 dB(A), which is roughly equivalent to removing half of the traffic from the road. Looking forward, the EPD will collaborate more closely with the HyD to utilise technology to alleviate the road traffic noise impact, promoting Hong Kong's transition to a more liveable city.

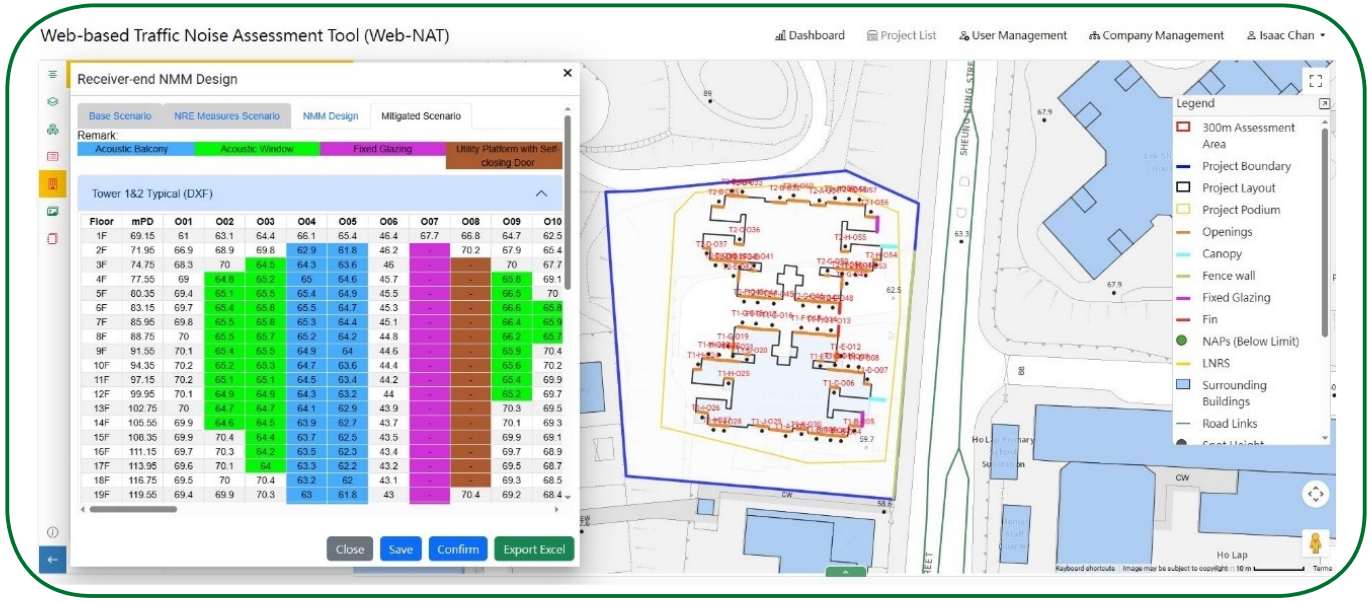


Close-Proximity (CPX) trailer performs road-tyre noise measurements to validate the noise reduction performance. The new generation of low noise road surfacing material is more durable and effectively reduces road traffic noise, significantly enhancing residents' quality of life.

Smart E-platforms to Facilitate Self-assessment and Digitisation

Smart Platforms to Help in the Development Process

In line with the Government's policy to accelerate land and housing supply, the EPD has developed innovative online platforms to revolutionise noise impact assessments and construction noise permit (CNP) applications to assist in the development process. These online platforms are Web-based Traffic Noise Assessment Tool (Web-NAT) for residential development, Web-based Construction Noise Management Plan Platform (Web-CNMP), and Web-based Construction Noise Permit Application and Vetting System (e-CNP).



Web-NAT provides GIS-based data, such as road networks, buildings and noise barriers. It standardises traffic noise assessment for residential development to avoid human errors.

Time Saved through Standardised Process and Simplified Submissions

All these platforms utilise Geographic Information System (GIS) to identify noise sensitive receivers automatically. The Web-NAT provides comprehensive GIS-based infrastructure data, including road networks, buildings and noise barriers, enabling users to build road traffic noise models in a fraction of the time previously required and greatly shorten the time for conducting road traffic noise assessment.

The Web-CNMP automates the entire construction noise assessment process through advanced computational algorithms, while incorporating an extensive database of powered mechanical equipment (PME) and quieter construction alternatives. By doing so, contractors are encouraged to use quieter construction methods to comply with relevant construction noise criteria. Web-NAT and Web-CNMP have demonstrated remarkable operational improvement, reducing processing time by at least 30% while virtually eliminating common submission errors through standardised digital workflows. On the other hand, the incorporation of a self-certification mechanism via checking and verifying by qualified professionals ensures the quality of environmental noise assessments.

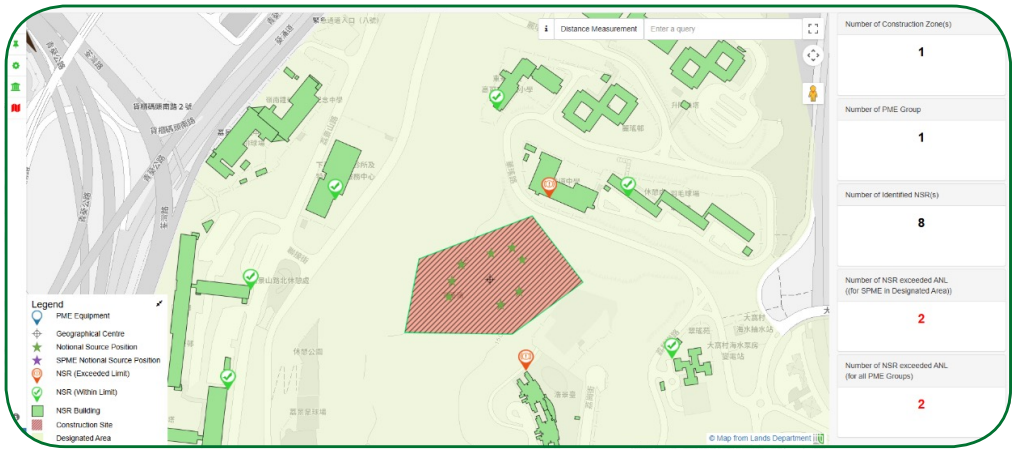
Web-CNMP automatically identifies noise sensitive receivers near the construction site (marked in red). Buildings in green and blue signify schools and residential buildings respectively.

The e-CNP enables applicants to assess construction noise and ensure noise compliance instantly by adjusting the number and types of PMEs. It further streamlines online CNP applications through features such as standardised templates and real-time tracking of application status. The e-CNP also stores previous application data, eliminating the need of data re-entry for CNP renewal applications, thereby saving approximately 80% of the preparation time as compared to traditional paper-based applications.

These digital initiatives have gained substantial traction within the industry, with over 400 registered users across the three platforms. The tangible benefits are manifest in three key areas: (1) Automated workflows could vastly reduce assessment and application preparation time while streamlined approvals would also reduce processing time; (2) Built-in compliance validation functions could avoid resubmission, which is conducive to optimising preparation costs of consultancy and CNP application fees; (3) Integrated error checking functions could dramatically improve assessment accuracy by preventing common data discrepancies that frequently occurred in manual submissions.

Looking Ahead

The EPD remains committed to enhancing these digital solutions through continuous technological refinement and expanded functionality. The department is actively exploring opportunities and potential applications of Artificial Intelligence to further streamline environmental noise assessment and monitoring. These platforms will facilitate the development of digital government, delivering convenience and benefits to the public and businesses.



e-CNP enables applicants to assess construction noise and ensure noise compliance instantly by adjusting the number and types of PME

WATER

Development and Application of New Biological Indicator

Phytoplankton Community Integrity Index (PCII)

Since the mid-1980s, the EPD has monitored water quality in Hong Kong's marine environment, with phytoplankton monitoring incorporated since the mid-1990s. Drawing on over three decades of data and the latest international practices and trends, the EPD has developed a biological indicator, namely the "Phytoplankton Community Integrity Index (PCII)", which is designed to gauge the status of eutrophication in our coastal waters, and to assess the biological impacts of nutrient enrichment, if any, on the phytoplankton community therein in a more scientifically sound and robust manner. It can be used to supplement the prevailing Water Quality Objectives (WQOs) on nutrients (i.e. Total Inorganic Nitrogen (TIN) and Chlorophyll-*a*). The development and applications of the PCII and the associated study findings[1] were reviewed by academic scholars and published in an international scientific journal in 2024[2].

Traditional methods for evaluating eutrophication risks rely on measuring physical and chemical parameters such as dissolved oxygen, nutrient levels, and chlorophyll-*a*. Scientifically, the evaluation of potential eutrophication impacts also requires the gathering of scientific evidence of undesirable disturbance to the biological system such as the balance of community structures of relevant marine organisms, particularly phytoplankton community which are the primary producers of the ecosystem and are most vulnerable to the direct impact of eutrophication. The PCII examines shifts in the balance between diatoms and dinoflagellates, the two primary phytoplankton groups in Hong Kong waters, by comparing specific conditions to a reference condition with minimal inorganic nitrogen levels, when the nutrients levels had the least impact on the aquatic ecosystem.

The PCII is scored on a scale from 0 to 1. A score of 0 reflects a complete departure from the reference phytoplankton community structure, while a score of 1 indicates full alignment with the reference condition. A PCII score of 0.6 or higher is established as the Biological Water Quality Criterion, representing an acceptable state of the phytoplankton community. This threshold is set with reference to local research and aligns with the Ecological Quality Objectives set by the European Union Water Framework Directive (EU WFD) and the Convention for the Protection of the Marine Environment of the North-East Atlantic (the "OSPAR Convention").

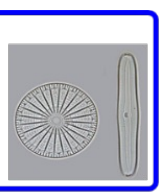
[1] The study was conducted by the EPD in collaboration with the Hong Kong University of Science and Technology and the Scottish Association for Marine Science

[2] Mak, Y.L., Tett, P., Yung, Y.K., Sun, W.C., Tsang, H.L., Chan, C.T., Liu, H., Chiu, W.L., Leung, K.F., Yang, R. and Chui, H.K. (2024) Phytoplankton community integrity index (PCII) – A potential supplementary tool for evaluating nutrient enrichment status of Hong Kong marine waters. *Marine Pollution Bulletin* 199: 115964

The PCII has been implemented across Hong Kong's diverse marine environments, each with distinct hydrodynamic and water quality characteristics, to enhance conventional monitoring of the eutrophication status and to facilitate assessment of the actual biological impact caused by eutrophication. In the Tolo Harbour, a highly enclosed bay with limited water exchange and a higher likelihood of red tides due to increase in nutrient loading inputs, targeted efforts have been made to substantially reduce nutrient discharges, such as the Tolo Harbour Effluent Export Scheme (THEES). The phytoplankton community has been successfully restored to healthy conditions, as indicated by the PCII scores of 0.6 or above, which correspond to "good" or "excellent" ecological status. Conversely, in open waters south of Hong Kong and in turbid estuarine waters like Deep Bay, increased nutrient levels have not significantly disrupted the phytoplankton community balance. By addressing the limitations of traditional monitoring, the PCII provides a more comprehensive assessment of the relevant aquatic ecosystem's health and the risks posed by eutrophication. This scientific tool supports precise planning and assessment of effectiveness of mitigation measures, ensuring optimal resource use in managing eutrophication risks in Hong Kong's coastal waters.

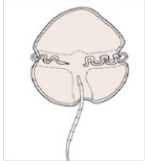
Diatoms

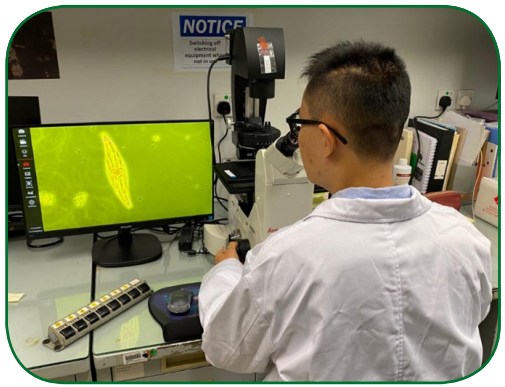
- Cell covering with siliceous cell wall
- Radial / Bilateral



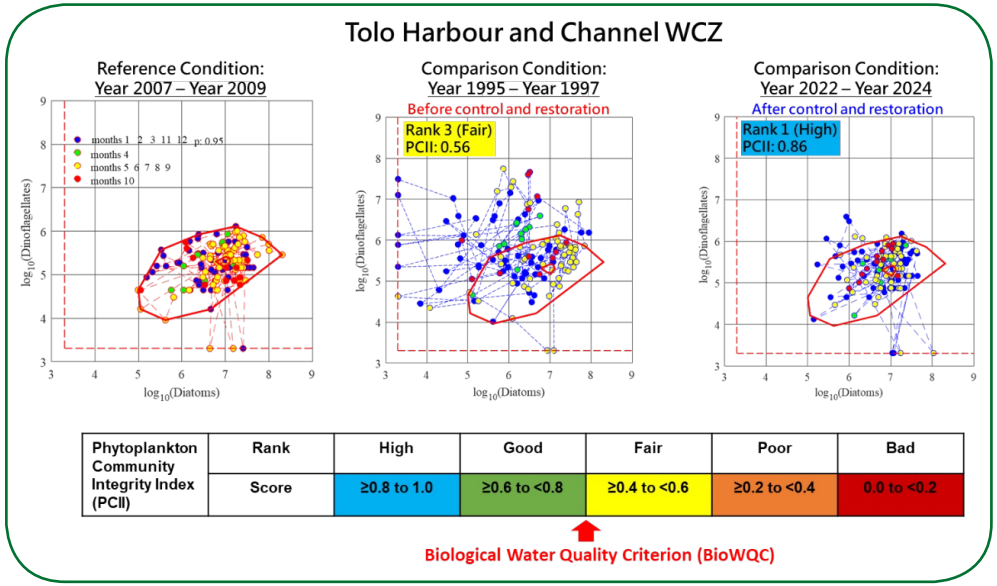
Dinoflagellates

- Two flagella
- Armored or Unarmored





Analysis of marine water sample to identify and count diatoms and dinoflagellates, the two main types of tiny algae that indicate the ecological health (in terms of the phytoplankton community) of Hong Kong's waters



Graphs showing the (PCII) for diatoms and dinoflagellates in the Tolo Harbour, Hong Kong, illustrating significant improvement in water quality and reduced eutrophication due to effective pollution reduction and control measures, such as the Tolo Harbour Effluent Export Scheme

Development and Implementation of the Beach Water Quality Forecast System

Over the past two decades, with the Government's efforts in implementing various pollution control measures, extending and upgrading the sewerage network and treatment facilities, together with other environmental enhancement measures, the overall water quality of our bathing beaches has continued to improve. All 42 gazetted beaches in Hong Kong have fully complied with the bacteriological WQO for bathing beaches since 2010.

Although the water quality of Hong Kong's beaches has remained stable, individual beaches may still occasionally experience natural short-term water quality fluctuations due to environmental factors. Scientific studies revealed that beach water quality can fluctuate rapidly due to changes in environmental and hydro-meteorological conditions, in particular after heavy rain. Correspondingly, the EPD collaborated with the Hong Kong University of Science and Technology to develop a Beach Water Quality Forecast System to provide near real-time predictions of beach water quality, with a view to supplementing the existing Beach Water Quality Monitoring Programme which relies solely on water quality monitoring data.

The latest beach water quality forecast information is available on the EPD's beach thematic website

Building on a statistical multiple linear regression model, the Beach Water Quality Forecast System predicts daily *E. coli* levels in the beach water, according to the most relevant and up-to-date environmental and hydro-meteorological parameters and data, including microbiological content, salinity, water temperature, solar radiation, rainfall, onshore wind speed and tidal level. The information is then disseminated in the form of "Beach Water Quality Forecast Index", which resembles the existing rating system for beach water quality and is also categorised into "1 - Good", "2 - Fair", "3 - Poor" and "4 - Very Poor".

The forecast system not only allows the public to stay updated with the water quality status for better planning of their water activities, but also serves as a smart technology for enhancing beach management. The Leisure and Cultural Services Department would hoist a red flag at a beach based on a "4 - Very Poor" forecast, alerting the bathers to avoid swimming at that beach. In 2024, the first full bathing season following the system's launch, more than 70 warnings were issued at various beaches on 34 days after heavy rainstorms, achieving a more comprehensive protection to the bathers' health.

While the forecast system aims to forecast short-term fluctuations caused by hydro-meteorological factors, it cannot predict the changes resulting from unexpected pollution incidents. Therefore, the EPD synergises water quality forecasting with routine monitoring to provide the public with a comprehensive picture on beach water quality.

Looking Ahead

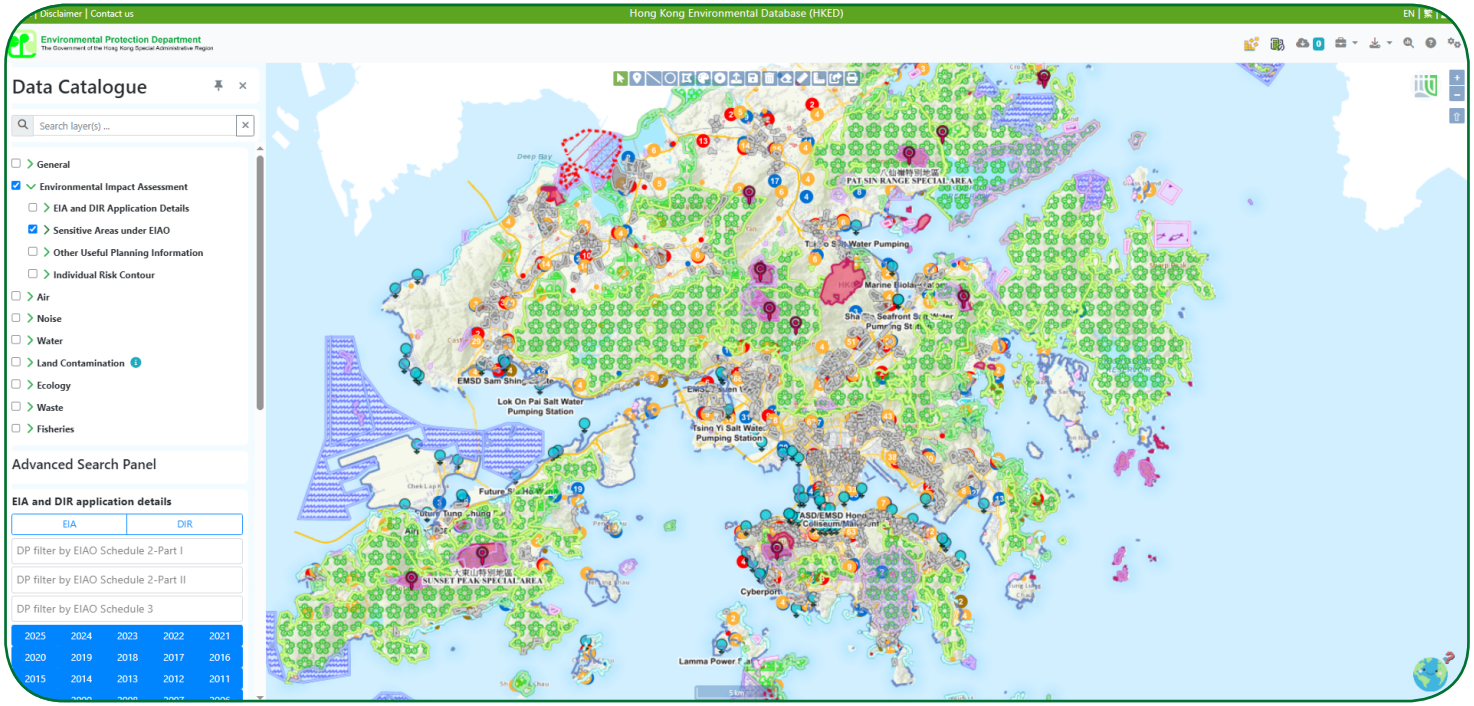
The EPD will continue to embrace innovative technologies to enhance the effectiveness of environmental water quality management with a view to building a Smart Hong Kong.

Using the Hong Kong Environmental Database to Strengthen and Expedite EIA Processes

Environmental Impact Assessments (EIAs) play a vital role in Hong Kong by taking environmental considerations into project planning for achieving co-existence of development and conservation. Traditional EIA processes, however, have long struggled with scattered data sources, time-consuming baseline studies, limited access to some information, and challenges for stakeholders in interpreting complex technical material. The Hong Kong Environmental Database (HKED) offers a groundbreaking solution to these persistent challenges by consolidating environmental information into a single platform.

A Unified Environmental Data Hub

The HKED functions as a comprehensive, centralised repository that brings together diverse environmental datasets under one digital roof. This includes essential information such as air and water quality baselines, ecological survey results, noise planning data, and land use zoning details. Rather than forcing project teams to hunt through multiple agencies and databases, most baseline information they need for an EIA is accessible through a single, integrated platform.

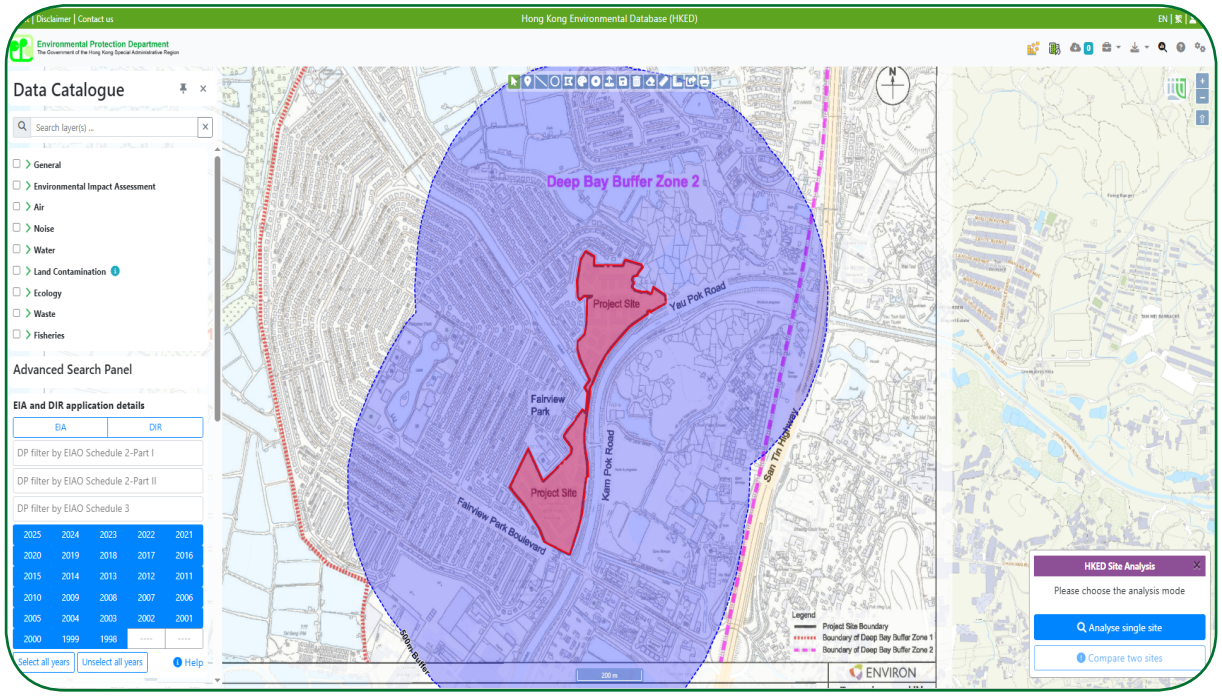


HKED – a centralised repository for diverse environmental datasets for EIA studies

Game-Changing "One-Map Environmental Assessment"

The database's standout feature is its innovative "One-Map Environmental Assessment" function, which fundamentally transforms how projects approach environmental assessment and planning from day one. Traditional project development often treats environmental considerations as obstacles discovered late in the design process, leading to expensive redesigns and frustrating delays. The HKED flips this approach entirely.

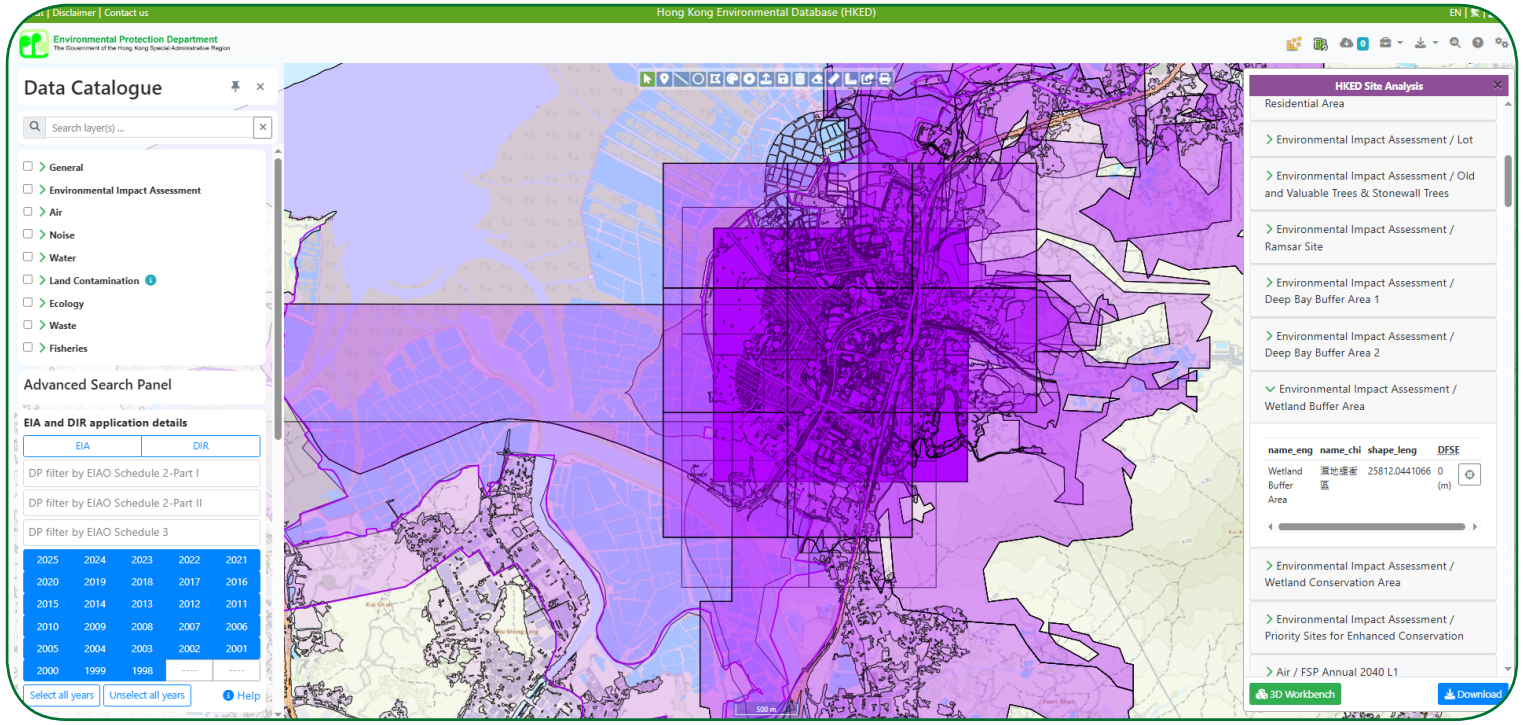
Project teams can now upload preliminary design sketches or basic GIS polygons of their proposed development area. Within minutes, the system cross-references this footprint against all consolidated environmental datasets and generates a comprehensive site analysis report. This report visually maps out environmentally sensitive areas, protected species habitats, important ecological zones, heritage sites, and noise-sensitive receivers that intersect with or lie adjacent to the proposed project area.



Uploading project footprint and setting buffer distance on HKED map

Transformative Efficiency Gains

This integrated approach delivers remarkable time savings during the crucial conceptual design phase. Project teams can rapidly test multiple design alternatives by overlaying different footprint options, instantly identifying configurations that minimise environmental disruption and community impacts. Consider a highway project where teams can compare various alignment routes within hours, optimising their design to avoid sensitive areas. Tasks that previously required days of manual data compilation and specialist consultation now happen in real time.



Identification of potential project environmental constraints

Breakthrough Engagement Efficiency

The benefits extend far beyond mere time savings. Early visualisation of environmental constraints enables a shift from reactive to proactive environmental governance. Instead of scrambling to implement compensatory measures after problems are discovered, project teams can easily avoid environmental conflicts through informed upfront design decisions.

The system's visually intuitive outputs also revolutionise stakeholder engagement. Project teams, community members, and the EPD can now communicate and collaborate using a common geospatial reference point. This transparency builds consensus early in the process while reducing procedural friction during formal EIA screening and scoping phases.

Visualisation of conceptual project design into tangible understanding for stakeholder engagement

A New Era of Sustainable Development

The HKED represents a significant advancement beyond merely enhancing data management. It revolutionises the integration of environmental considerations into the development framework of Hong Kong. With the "One-Map Environmental Assessment" function, environmental factors are evolved from mere compliance issues to essential design elements, guaranteeing that sustainable outcomes are ingrained in projects since their inception stage.

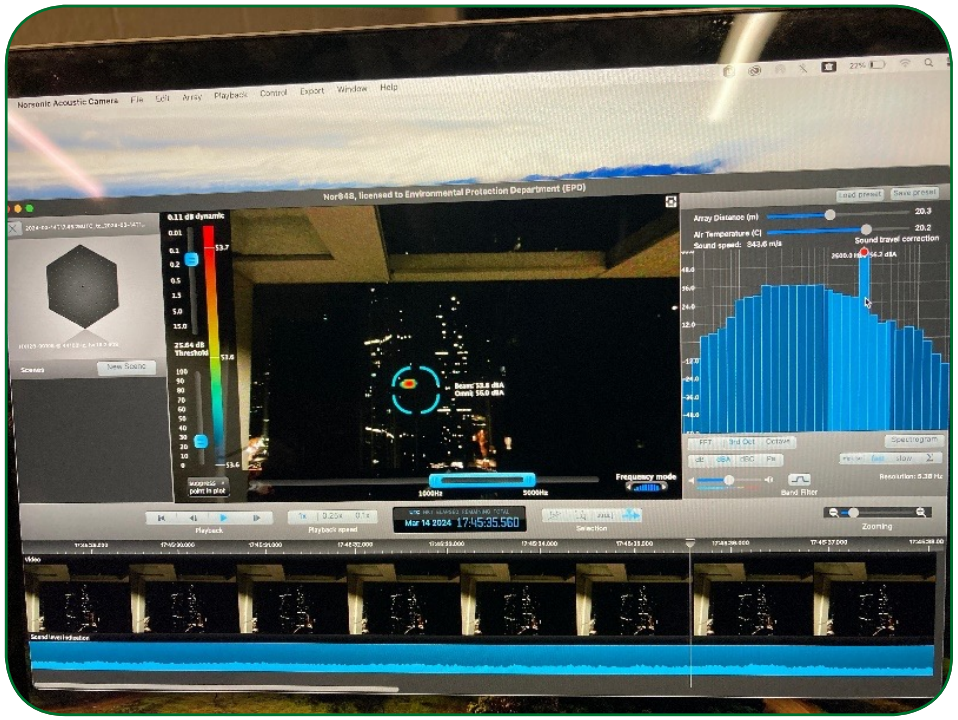
This transformative shift is set to enhance the efficiency, transparency, and environmental accountability of Hong Kong's development process. By providing project proponents, environmental consultants, planners, professors and members of the public with comprehensive environmental intelligence from the outset, the HKED ensures that sustainable development evolves from being a mere aspiration to a practical reality deeply embedded in the core of every project.

Application of Smart Enforcement Tools to Resolve Noise Nuisance

In early March 2024, the EPD received 18 complaints, alleging that at the inner garden of the residential estates including LP6, Wings at Sea and Montara of LOHAS Park at Tseung Kwan O, residents had been annoyed by an unknown and irregular high-frequency noise at nights, seriously affecting their daily living. Some complainants suspected that the high-frequency noise might originate from the nearby data centres.

Upon receiving the complaints, the EPD had conducted site investigation and found that the high-frequency noise was sporadically heard, and the site layout was complex, involving various residential estates, commonly used garden and building services facilities; and the presence of multiple sound reflections among high-rise residential towers, rendering it extremely difficult to track down the source. After rigorous planning and deployment of staff at multiple strategic locations to use acoustic cameras to conduct in-depth investigations during late nights, the EPD successfully tracked down the concerned high-frequency noise, which was found emanated from the exhaust pipe of a gas water heater installed at exterior facade of a residential flat at mid-high level, facing the inner garden. The EPD then swiftly followed up with the corresponding property management office and the occupant, who then promptly arranged repair of the defective gas water heater. The noise problem had been resolved, and the community restored its tranquillity.

The EPD has been keeping abreast of the latest technological developments and applications in overseas and has timely introduced the relevant technologies to assist staff in enforcement of the environmental legislation in a more effective manner. Since the concerned high-frequency noise in this case was sporadically emitted from unknown source, the use of acoustic cameras has significantly shortened the time required to investigate the source, and hence speedily assisted the public in resolving noise nuisance issues. The EPD will continue to keep abreast of technological developments and applications, with a view to enhancing the department's efficiency and service quality.



Our acoustic camera, successfully tracked down the concerned high frequency noise (peak frequency 2.5kHz), which was found originated from a residential flat at mid-high level, facing the inner garden.

An EPD officer using acoustic camera at spot for investigation at late night

Ameliorating the Nearshore Odour Problems of Victoria Harbour

In the 2022 Policy Address, the Chief Executive announced the initiative on improving the nearshore water quality and addressing the odour problems of Victoria Harbour. The Government sets a clear target to reduce the pollution load by half before the end of 2024 at highly polluted outfalls along the harbour, particularly in areas such as Tsuen Wan, Sham Shui Po, and Kowloon City. This initiative was part of the Government's work to enhance the environmental quality of Hong Kong's iconic waterfront for leisure enjoyment of residents and visitors.

To achieve this goal, the EPD conducted extensive surveys with approximately 4,000 sewer misconnection investigations along various coastal areas of the Victoria Harbour, having inspected over 10,000 manholes and tested more than 2,000 water samples. Beyond traditional methods such as dye tests, the EPD also leveraged innovative technological devices including using ground penetrating radars, pipeline closed-circuit television robot and unmanned sampling submarine to enhance the efficiency and accuracy of identifying pollution sources. Through this multifaceted approach, the EPD successfully identified major pollution sources within the stormwater drainage systems of the priority areas. In close collaboration with the Buildings Department (BD), the Drainage Services Department (DSD) and other relevant departments, the EPD actively followed up and rectified sewer misconnections in individual districts and buildings to stormwater drains. Through effective inter-departmental collaboration, by the end of 2024, the overall pollution load at the relevant stormwater outfalls had been reduced by about 87%, exceeding the target set in the 2022 Policy Address.

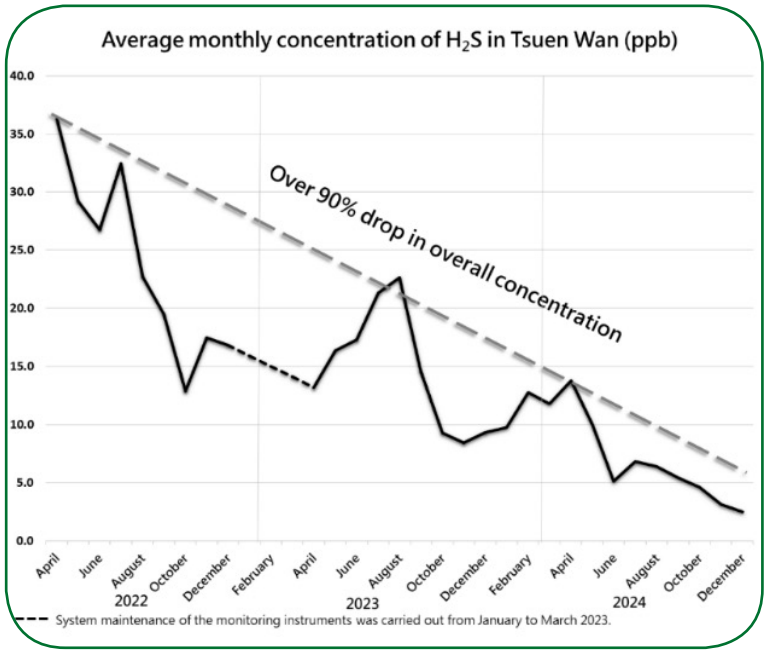
Collection of water samples for testing

Adding environmental-friendly dye to trace pollution sources

Rectification works of sewer misconnections

The EPD also conducted odour monitoring in priority areas of the Victoria Harbour and the monitoring results revealed a substantial improvement in odour situation in some areas. For instance, the concentration of odour-causing hydrogen sulphide (H_2S) in the fourth quarter of 2024 decreased by more than 90% at Tsuen Wan Bay harbourfront when compared to that in early 2022. Furthermore, the monitoring data in 2024 revealed that the average monthly concentration of H_2S at Cheung Sha Wan Promenade, Kowloon City near To Kwa Wan Typhoon Shelter as well as the harbourfront area of Kai Tak remained at a relatively low level.

The measures implemented by the Government to improve the water quality and odour situation of the Victoria Harbour have yielded remarkable results. These efforts have garnered recognition from council members, the media, and the public, and have facilitated the successful hosting of large-scale events along the harbourfront. A prime example was the drone show held at Tsuen Wan Promenade on 1 July 2024, which showcased the enhancement made to the coastal environment.



A decrease of over 90% in overall H_2S concentration was seen in Tsuen Wan Bay harbourfront in 2024, compared to 2022 levels.

Mr. Sun Jinlong, the Secretary of the Leading Party Members Group of the Ministry of Ecology and Environment, and Ms. Guo Fang, the Vice Minister, visited Hong Kong to inspect the efforts of the Hong Kong Special Administrative Region (HKSAR) Government in improving the water quality along the Victoria Harbour.

The Legislative Council and District Council members expressed satisfaction with the progress of the harbourfront environment improvements during the on-site inspections with the Government in Tsuen Wan, To Kwan Wan, Cheung Sha Wan, acknowledging significant enhancements in the water quality and odour along the coast.

The drone show held at Tsuen Wan Promenade on 1 July 2024 showcased the enhancement made to the coastal environment.

WASTE REDUCTION MANAGEMENT

Regulation on Disposable Plastic Tableware and Other Plastic Products

To reduce the use of disposable plastic tableware and other plastic products at source with a view to minimising the impact of plastic pollution on the marine environment and human health, the regulation on disposable plastic products (the Regulation) came into effect on 22 April 2024 (Earth Day).

Promotional posters of the regulation on disposable plastic products

In order to help the trade and the general public to understand the Regulation, the EPD conducted a series of publicity and education work during the adaptation period, including visiting 20,000 small and medium-sized eateries, distributing sector-specific pamphlets to 11,000 retail companies and 1,800 hotels and guesthouses, holding around 50 sectoral training sessions, and launching the "Cut Plastic Use" thematic website (www.cuttheplastics.hk) with a dedicated page providing the hotel industry with information about suppliers of hotel toiletries alternatives and their products. The EPD also distributed Announcements in the Public Interest, promotional videos, posters and advertisements for relevant trades through various channels, as well as actively issued infographics via online platforms to clarify misunderstandings among the community and enhance public understanding of the Regulation. In response to the catering trade's concern on alternatives, the EPD engaged the Hong Kong Quality Assurance Agency to establish the Green Tableware Platform (www.greentableware.hk) to assist the trade in procuring compliant alternatives.

After the six-month adaptation period, the trades have actively complied with the Regulation by stopping the sale or provision of regulated disposable plastic products. The public's habit of using relevant products in their daily lives has also changed, with "bring your own reusable tableware" and "plastic-free" cultures being developed gradually in the society. For instance, the number of customers choosing to order takeaways without cutlery has increased significantly compared to the time before the Regulation took effect. More than 80% of takeaway customers patronising chain restaurants no longer request for disposable cutlery. It is estimated that, on average, the Regulation can alleviate the pressure on our landfills by more than 60 million sets of disposable cutlery every year. Overall, the Regulation has been effective in reducing the use of plastic tableware and regulated plastic products, thereby substantially achieving waste reduction goals.

Since January 2024, the EPD has organised around 50 online and offline training sessions to provide comprehensive and focused training for the catering, retail, hotel sectors, etc.

The EPD officers conducted on-site visits to various small and medium-sized eateries to assist them in understanding the scope of the Regulation and getting prepared for it.

Publication of the Practical Guides on Packaging Reduction and Management and Launching of Packaging Reduction Charter Scheme

Practical Guides on Packaging Reduction and Management

To assist the trade in packaging reduction and management, the EPD has developed a set of Practical Guides on Packaging Reduction and Management (the Practical Guides) for specific sectors since mid-2022 to provide practical tips and experience sharing on how to avoid and reduce packaging consumption and achieve sustainable packaging management in their daily operations. The Practical Guides also offer tailor-made templates and references for the trade to prepare packaging reporting and disclose packaging data in a harmonised structure so as to identify areas for improvement beyond their current practices.

The Practical Guides, covering eight sectors, namely the supermarkets and grocery stores sector, the logistics sector, the e-commerce sector, the hotel and hospitality sector, the electronics and electrical appliances sector, the beverage manufacturing sector, the food manufacturing sector, and the importer sector, have been published on the EPD's website for the trade's reference.

Practical Guides on Packaging Reduction and Management – Supermarkets and Grocery Stores Sector

Practical Guides on Packaging Reduction and Management – Logistics Sector

Practical Guides on Packaging Reduction and Management – E-commerce Sector

Packaging Reduction Charter

Building upon the aforementioned Practical Guides, the EPD plans to officially launch the Packaging Reduction Charter (the Charter) in March 2025. The Charter aims to encourage businesses to reassess their packaging design, minimise unnecessary material usage, enhance recyclability and reusability, and explore innovative packaging solutions, fostering a waste less culture in commercial activities.

Signatory companies of the Charter will commit to:

- submitting their annual total packaging material usage to the EPD;
- implementing measures to reduce packaging or adopting sustainable packaging solutions; and
- encouraging their upstream and downstream suppliers, business partners, and customers to reduce packaging material usage and improve packaging management.

These collective efforts will not only alleviate pressure on landfills, but also help businesses fulfil their social responsibilities, contributing to Hong Kong's long-term goals of Zero Landfill and carbon neutrality.

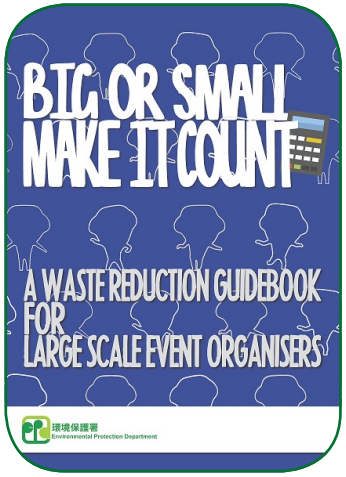
Introduction of the Latest Edition of "A Waste Reduction Guidebook for Large Scale Event Organisers"

A Waste Reduction Guidebook for Large Scale Event Organisers

As Asia's world city, Hong Kong hosts a variety of vibrant events each year, including cultural celebrations, festivals, entertainment, shopping, sports and dining. However, these events inevitably generate significant waste, exerting pressure on the local landfills and contributing to the global carbon footprint.

To address the growing public awareness of environmental issues at large scale events, the EPD updated and promulgated timely the "A Waste Reduction Guidebook for Large Scale Event Organisers" (the Guidebook) in March 2025. The Guidebook provides practical guidance and updated information on waste reduction and sustainable practices, helping stakeholders, including exhibitors, caterers, contractors and event participants proactively engage in green initiatives. Key highlights include (i) feasible measures for waste reduction and recycling during events, (ii) green tips for early planning to conserve resources effectively, (iii) updates on the regulations for disposable plastic tableware and other plastic products, (iv) strategies to promote green efforts and foster participants' supports, and (v) lists of partnering organisations offering recyclable collection, reusable tableware rental services and other green services. The Guidebook also showcases successful strategies from past relevant events, such as the Lunar New Year Fair and the Hong Kong Flower Show, offering inspiration for event organisers to adopt similar approaches.

By adopting the practices suggested in the Guidebook, event organisers can embrace greater social responsibilities, build a positive brand image, and enhance participants' engagement. Through collective efforts, Hong Kong can host more vibrant, waste-free and low-carbon events, practising a green lifestyle.



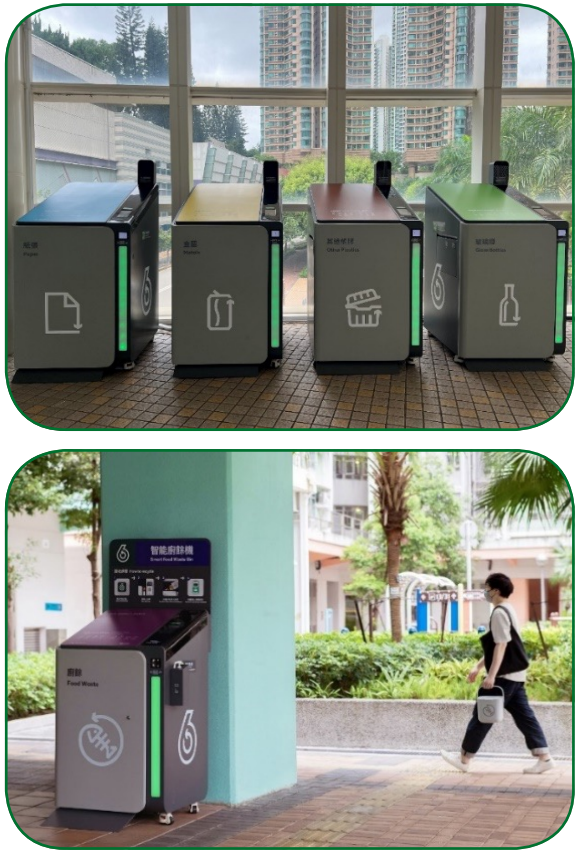
The Guidebook

Big Waster showing support to the Hong Kong Flower Show 2025

Smart Technology Applications for Collection and Recycling of Food Waste and General Recyclables

The EPD launched the "Pilot Programme on Smart Recycling Systems" in the fourth quarter of 2020, testing the application of smart recycling devices connected through Internet of Things technology in phases to enhance the efficiency of collecting general recyclables (such as waste paper, metals and plastics). Since 2022, the application of smart recycling technology has further expanded to a number of food waste collection schemes. Currently, various types of smart recycling equipment are in operation across the territory, with more than 1,200 food waste smart recycling bins and about 100 sets of smart recycling bins for collection of general recyclables by the end of 2024.

The smart recycling bins are very simple to use. Members of the public only need to scan their GREEN$ membership QR code, and drop recyclables once the electric door opens. The system automatically measures and records the weight of the recyclables, uploads the data to the central data system in real-time, calculates and records the reward points while monitoring the operational status of all devices in real-time. The smart recycling devices are equipped with built-in capacity sensors. When recyclables almost reach the bin capacity limit, the system automatically notifies on-site staff to collect recyclables to free up storage space. The system also features a self-diagnostic function, which automatically notifies the control centre for maintenance arrangements when faults occur. Food waste smart recycling bins are additionally equipped with odour abatement devices and ultrasonic pest repellents, helping to maintain environmental cleanliness and hygiene. These smart features have significantly enhanced the effectiveness and efficiency of the operations of community recycling.



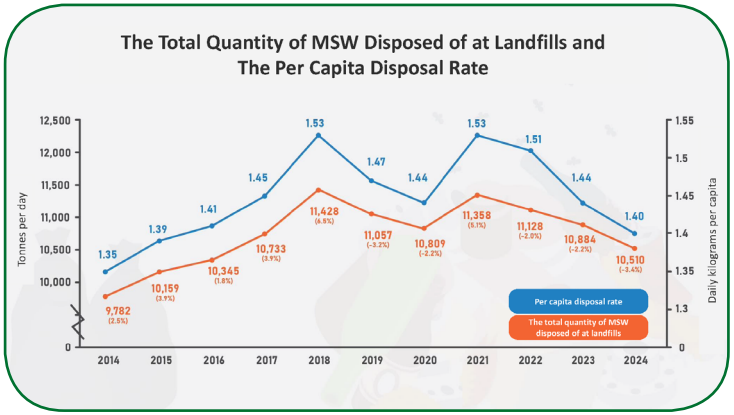
Smart Recycling Bins

Moving Towards "Zero Landfill"

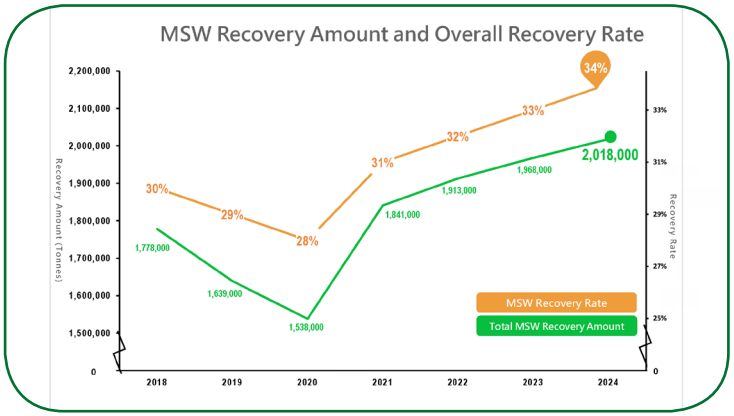
Although the Government has announced the suspension of the implementation of MSW charging, we have been continuously increasing our efforts in promoting waste reduction and recycling. The Government is committed to achieving "zero landfill" by 2035 to move away from the reliance on landfills for MSW disposal. Through a series of waste reduction and recycling initiatives, the Government has successfully reversed the long-term upward trend in waste disposal quantities. The average daily MSW disposal has continued to decline over the past three years since 2021, from an average of 11,358 tonnes per day in 2021 to 10,510 tonnes per day in 2024, achieving a reduction of 7.5%. The per capita MSW disposal rate has also dropped from a peak of 1.53 kilograms per day in 2021 to 1.40 kilograms per day in 2024, representing a decrease of 8.5% over three years.

In tandem with the decrease in per capita MSW disposal rate, the overall MSW recovery rate surged from 1.54 million tonnes in 2020 to 2.02 million tonnes in 2024, marking an increase of 480,000 tonnes. The recovery rate also rose from 28% to 34%.

To achieve "zero landfill" by 2035, we are taking forward a four-pronged strategy to promote waste reduction at source – strengthening public education, enhancing the recycling network, fostering collaboration with industries, and utilising market forces to develop environmental infrastructure. These efforts are complemented with waste-to-energy (WtE) facilities – I·PARK1 and the planned I·PARK2 – to reduce the volume of waste for landfill disposal while recovering energy from waste to reduce carbon emissions.



The total quantity of MSW disposed of at landfills and the per capita disposal rate



MSW recovery amount and overall recovery rate

WASTE MANAGEMENT FACILITIES

Strategic Landfills

The EPD manages three strategic landfills, namely South East New Territories (SENT) Landfill extension, North East New Territories (NENT) Landfill and West New Territories (WENT) Landfill. They are operated in accordance with international environmental standards and their environmental impacts are contained through a multi-layered and impermeable liner system, and comprehensive leachate and landfill gas management systems. Monitoring systems have been set up for landfill gas, leachate, air quality, water quality (surface water and groundwater) and noise. Sampling and measurements are carried out by the EPD and landfill contractors. Independent consultants conduct audits of the monitoring work and results.

The EPD has been putting much efforts in improving the operations of our landfills in particular the NENT Landfill during 2024. Additional resources have been allocated to strengthen odour control by implementing a series of odour management measures such as application of Posi-Shell covers, reducing the operational areas of the landfill, operation of additional deodourisers, enhancing the monitor of odour emission, etc. Drawing on the experience of the Chinese Mainland and other regions, we have conducted a trial of new mechanical technology, to cover part of the landfill operational areas at NENT with impermeable plastic liners upon completion of operation each day, for minimising the possibility of odour emission. To minimise the potential odour problem arising from livestock waste treatment at the NENT Landfill, the NENT Landfill has ceased receiving pig waste since 1 July 2024. The EPD has also deployed more supervisory staff to station at the landfill in order to ensure effective implementation of the above measures and further optimise the operation of the landfill.

In addition, the EPD has also advanced the final restoration and greening works of the WENT Landfill and NENT Landfill with a view to improving its visual appearance as soon as possible, thereby minimising the “Not In My Backyard” effect and the associated visual impact.

Landfill Extensions

To meet Hong Kong's future landfill needs, the capacities of two strategic landfills are being extended whilst the construction works of the SENT Landfill extension were completed with reception of construction waste commencing in November 2021. The contract of the NENT Landfill extension project was awarded in January 2022 and its construction works started in December 2022. The contract of the WENT Landfill extension project was awarded in August 2023 and its construction works started in April 2024. The EPD has worked closely with district counterparts to address residents' needs and concerns and enhance communication.

Carbon Reduction in Landfills

Decomposition of waste in landfills will generate landfill gas which is a type of greenhouse gas. To reduce carbon emissions, we enhanced the recovery of landfill gas from the operating landfills. Also, the recovered landfill gas has been utilised as renewable energy to generate power and thermal energy for both on-site and off-site uses. For instance, the WENT Landfill uses surplus landfill gas to generate electricity for export to CLP Power Hong Kong Limited's power grid. The NENT Landfill exports surplus landfill gas to the plant of Hong Kong and China Gas Company Limited at Tai Po as fuel. The SENT Landfill conveys its surplus landfill gas to the on-site reprocessing facilities for conversion into synthetic natural gas before injection into the latter's off-take station at Tseng Lan Shu for use.

As a further step forward in carbon reduction, a pilot solar farm with a capacity of 1 MW has been actively implemented at the SENT Landfill for targeted completion in 2025. This will also help to establish the technical requirements and suitable models for developing large-scale solar farms at landfills in future.

Closed Landfills

Hong Kong has 13 closed landfills, which ceased to operate between 1975 and 1996. The EPD has restored all landfills and continues to carry out after-care works, such as leachate and landfill gas management and landscaping. Most of these closed landfills have been converted into recreational and conservation uses, such as parks, sports facilities, multi-purpose grass pitches and a butterfly conservation area.

The E-Co Village developed by the Tung Wah Group of Hospitals at the restored Tseung Kwan O Stage I Landfill commenced operation in July 2024. The works for installation of a pilot solar photovoltaic system with a capacity of 150 kilowatts at Jordan Valley Landfill also began in late 2022 and completed in February 2023. The construction works for Kwai Chung Park Phase I at the restored Gin Drinkers Bay Landfill were still on-going and scheduled for completion by 2025. With the execution of the non-in-situ land exchange, the development of a private golf course at the restored Shuen Wan Landfill was in progress.

E-Co Village at Tseung Kwan O Stage I Landfill (Photo courtesy of TWGHs E-Co Village Limited)

Refuse Transfer Stations (RTSs)

Most collected MSW is delivered to RTSs and compacted into purpose-built containers for bulk transport to the strategic landfills, thus reducing transport costs and traffic and environmental impacts. There are six RTSs serving the urban areas and new towns and seven smaller facilities serving the outlying islands. The RTS network handles about 80% of the MSW generated in Hong Kong in an efficient and environmentally friendly manner.

The existing RTSs have been in operation for over two decades. The EPD has been implementing refurbishment and upgrading works to these RTSs under follow-on contracts so as to maintain their reliable and safe waste transfer services, and enhance their operational efficiency and environmental performance. The EPD is also planning new RTSs in new towns and strategic locations to keep up with the ever-growing demand for reliable and safe transfer of waste.

Chemical Waste Treatment Centre (CWTC)

The CWTC provides integrated treatment and disposal services for almost all chemical waste and all clinical waste generated in Hong Kong. It treated an average 15.6 tonnes of chemical waste and 8.3 tonnes of clinical waste each day in 2024. The centre's environmental performance is closely monitored, including air emissions, stabilised residues and wastewater discharges. The CWTC also generated about 4,442 kWh of electricity from its solar panels[1] in 2024. The construction of new replacement incineration systems (RIS) equipped with an energy recovery and power generation system to generate electricity to meet the plant's own use, was ongoing and the RIS is scheduled for commissioning in the first quarter of 2025.

Animal Waste Composting Plant (AWCP)

About 16.53 tonnes of horse stable waste and 0.33 tonnes of yard waste were treated here each day in 2024. The compost produced meets the standards of the Hong Kong Organic Resources Centre and is suitable for landscaping, horticultural and agricultural uses.

EcoPark

As of December 2024, about 90% of the land in EcoPark which can be used for recycling purposes had been leased to private recyclers or provided for recycling facilities operated by the EPD. The remaining land had also been reserved for promoting the development of green industry. EcoPark generated about 15,300 kWh of electricity through its solar panel system (3.6% of the total electricity consumption of the facility).

Pilot Biochar Production Plant in EcoPark

The Pilot Biochar Production Plant in EcoPark, which turns woody waste into biochar using pyrolysis, has commenced testing and commissioning in May 2023 and production in October 2024 respectively. From October to December 2024, it processed around 107 tonnes of woody waste and produced around 28 tonnes of biochar.

[1] The installation of new solar panels to replace the existing solar panels in CWTC was ongoing and scheduled for commissioning in Q1 2025 with a view to achieving better energy efficiency and carbon reduction performance.

Sludge Treatment Facility

T·PARK is one of the world's most technologically advanced sludge incineration facilities. In 2024, it treated around 391,500 tonnes of sewage sludge. By using high-temperature incineration, it reduced the bulk of sludge being landfilled by some 90% in volume, while energy recovered from the treatment process was converted into electricity for internal consumption and exporting surplus to the public power grid. In 2024, it generated around 59.4 million kWh of electricity. T·PARK also features public amenities, such as an environmental education centre, spa pools and café. It attracted more than 34,000 visitors in 2024.

Waste Electrical and Electronic Equipment Treatment and Recycling Facility

The Waste Electrical and Electronic Equipment Treatment and Recycling Facility (WEEE·PARK) officially opened in March 2018 to dismantle, detoxify and recycle regulated waste electrical and electronic equipment (WEEE) to underpin the Producer Responsibility Scheme on WEEE. In 2024, it processed around 22,050 tonnes of regulated WEEE and, through its solar panel system, generated about 253,900 kWh of electricity (i.e. about 10% of the total electricity consumption of the facility).

E-Truck for transporting regulated WEEE

WEEE·PARK

Organic Resources Recovery Centre

O·PARK1

In 2018, the EPD commissioned the Organic Resources Recovery Centre Phase 1 (O·PARK1) in Siu Ho Wan, which has the capacity to turn up to 200 tonnes of food waste into renewable energy and compost each day. In 2024, it converted about 59,684 tonnes of food waste into 12.6 million kWh of electricity, which was used to support its own operation with the surplus exported to the grid. It also generated 3,110 tonnes of compost.

O·PARK2

The Organic Resources Recovery Centre Phase 2 (O·PARK2) at North District, with design treatment capacity of 300 tonnes of food waste per day, has commenced food waste reception since March 2024 for operational testing. Also, since July 2024, pig waste, which was previously disposed of at NENT Landfill, has been treated by anaerobic digestion technology in O·PARK2 to minimise the potential odour problem at the NENT Landfill. In 2024, during the operational testing, O·PARK2 treated a total of around 27,804 tonnes of organic waste (i.e. food waste and pig waste). The operational testing of O·PARK2 was completed on 31 December 2024.

Development of Modern Waste-to-Energy Incinerators

At present, an average of about 10,510 tonnes of MSW are disposed of at landfills in Hong Kong every day. In the Waste Blueprint for Hong Kong 2035, the Government sets out the vision to move away from the reliance on landfills for direct disposal of MSW by around 2035. The Government's strategy has two main directions. The first is to mobilise the entire community to practise waste reduction and waste separation for recycling in the upstream to reduce the overall waste disposal amount. The second is to proactively drive the development of downstream WtE facilities for sustainable disposal of the remaining MSW.

The Government is working full steam on developing highly efficient modern WtE incinerators. The Integrated Waste Management Facilities Phase 1 (I·PARK1), located on an artificial island off Shek Kwu Chau, will progressively begin operation by the end of 2025. The facility will use advanced moving grate incineration technology, which can significantly reduce the waste volume by 90% after treatment and treat up to 3,000 tonnes of MSW per day. Once I·PARK1 is in full operation, energy recovered from the waste can generate electricity for its daily operation and export surplus electricity estimated at 480 million kWh each year to the power grid, and reduce greenhouse gas (GHG) emissions by about 440,000 tonnes per year.

Photomontage of I·PARK1 upon completion

I·PARK1 adopts advanced incineration technology, strictly controlling temperature, time and high turbulence flow. Within the specially designed incinerator, waste is combusted at temperatures above 850 degrees Celsius with sufficient air supply. The flue gas is required to stay at this high temperature for at least two seconds. Combined with the high turbulence flow technology, this ensures thorough combustion of the waste and complete destruction of organic pollutants including dioxins. I·PARK1 also adopts pollution control measures to ensure compliance with the stringent emission standards, protecting public health and the environment.

The I·PARK1 contractor arranged to prefabricate the main electrical and mechanical equipment modules in Zhuhai prefabrication yard using the Modular integrated Construction (MiC) approach. This construction method improves quality control and enables parallel construction both on-site and off-site to streamline the overall construction process. The work comprises six incineration boiler modules and six flue gas treatment system modules, with a total weight of about 50,000 tonnes. All main electrical and mechanical equipment modules were delivered to the artificial island in the first quarter of 2024 for assembly and testing.

On-site construction works at the I·PARK1 artificial island (2024)

I·PARK1's main electrical and mechanical equipment modules setting sail to Hong Kong from Zhuhai (2023-2024)

As for the proposed Integrated Waste Management Facilities Phase 2 (I·PARK2) at Tsang Tsui, Tuen Mun, its EIA report was approved under the Environmental Impact Assessment Ordinance in December 2024. Subsequently, in the same month, the open tender for the design, build and operate contract for I·PARK2 was invited. The estimated treatment capacity can reach 6,000 tonnes of MSW per day upon effective utilisation of the proposed I·PARK2 site and the application of the state-of-the-art technology. Similar to I·PARK1, I·PARK2 will also adopt moving grate incineration with features of high efficiency, reliability, maturity and cost-effectiveness, and provide with advanced air pollution control systems to achieve stringent emission standards. Bottom ash treatment facilities will also be set up to treat bottom ash generated from I·PARK1 and I·PARK2. In addition, drawing on the experience of T·PARK, community facilities combining environment education, leisure and recreation elements would be provided at the proposed I·PARK2. After completion of I·PARK1 and I·PARK2, Hong Kong's MSW incineration capacity will reach 9,000 tonnes per day.

Depending on the increase in waste generated by population and economic growth in the long run, as well as the amount of waste reduction and recovery, in order to ensure that Hong Kong has the capacity to handle all MSW, we will identify a suitable site in the Northern Metropolis for building an advanced WtE facility to provide the essential waste disposal services for the population of the Northern Metropolis and its economic development in the long run.

Reference architectural design of the proposed Integrated Waste Management Facilities Phase 2 (I·PARK2)

Operational Performance in 2024

Waste management facilities contractors are closely supervised by the EPD. They are expected to achieve full compliance with legal and contractual environmental requirements. In 2024, 399,411 monitoring measurements were conducted at RTSs, strategic landfills, restored landfills, the CWTC, T·PARK, O·PARK1 and WEEE·PARK, and 94.9% complied with contractual requirements. For the small number of exceptions, corrective and remedial actions were taken immediately to the satisfaction of independent consultants and/or the EPD. Contract payments were deducted for non-compliance in accordance with contract provisions as appropriate.

Targets for 2025

LONG TERM OBJECTIVES	PROGRAMME AREA	2025 TARGETS
Ensure that the treatment and disposal of waste at our facilities are managed in the most environmentally acceptable manner	Waste Management Facilities	• Maintain close supervision of our waste management facility contractors, aiming at full compliance with both statutory and contractual requirements • Continue to develop the pilot solar farm at SENT Landfill

WASTE REDUCTION PROGRAMMES

Food Waste Recycling

The EPD has been extending the Pilot Scheme on Food Waste Collection since 2021, providing point-to-point collection services for public and private premises that generate a larger amount of food waste. By the end of 2024, approximately 1,500 collection points have been established across the territory, covering food processing factories, markets, cooked food centres, wholesale markets, hospitals, government facilities, tertiary institutions, school lunchbox suppliers, hotels, shopping malls, residential estates, etc. At present, the quantity of food waste collected through different channels in Hong Kong is increasing progressively. The average daily collection reached about 280 tonnes in 2024, representing a 70% increase from 2023.

Smart Food Waste Recycling Bins

Food Waste Collection Service

To promote domestic food waste recycling, the EPD has implemented a smart food waste collection programme in public rental housing estates, while subsidising private residential buildings to collect food waste using smart recycling bins through the Recycling Fund and the Environment and Conservation Fund. By the end of 2024, over 1,200 food waste smart recycling bins have been installed across the territory. Additionally, the EPD has strategically set up approximately 200 fixed or mobile Public Food Waste Recycling Points across various districts in Hong Kong. These recycling points, located at public refuse collection points, Recycling Stations under GREEN@COMMUNITY, public markets, Outlying Islands Transfer Facilities and Food Waste Recycling Spots, offer convenient recycling outlets to small business operators and nearby residents.

Food Waste Recycling Spots

Community Recycling Network

The EPD adopts a comprehensive strategy to support and facilitate residents in different premises to participate in sources separation and clean recycling. Estates or building premises with the necessary space to set up recycling facilities are encouraged to join the "Programme on Source Separation of Domestic Waste" to provide convenient recycling facilities for residents. For scattered village houses in the rural areas, about 1,100 kerbside recycling bins have been provided in the public areas for local residents to participate in recycling. On the other hand, the EPD also developed the GREEN@COMMUNITY network to provide recycling support to residents living in premises that lack space for setting up their own recycling facilities (including single-block and 3-nil buildings) and to encourage participation in waste separation at source and clean recycling in public rental housing estates. The recycling network established by these programmes covers over 85% of the population across all districts in Hong Kong.

Recycling Station

Recycling Store

The number of public collection points under the GREEN@COMMUNITY increased to over 500 in 2024, comprising 12 Recycling Stations with focus on both environmental education and recycling support, 82 Recycling Stores located in close proximity to clusters of single-block buildings or set up in public rental housing estates, and around 350 Recycling Spots operated in the form of kerbside collection booths, for the collection of 9 common types of household recyclables (including waste paper, metals, glass containers, plastics, regulated electrical equipment, small electrical appliances, fluorescent lamps and tubes, rechargeable batteries and beverage cartons). There were also around 100 sets of Smart Recycling Bin set up at various locations to collect recyclables, like papers, metals, plastics, etc. All collected recyclables were delivered to approved recyclers for proper processing, turning them into resources. In addition to supporting community recycling, GREEN@COMMUNITY also instilled a green lifestyle in the community through organising various environmental education and promotional activities. To encourage more members of the public to participate in source separation of waste and clean recycling, the EPD launched the "GREEN$ Electronic Participation Incentive Scheme", allowing the public to earn GREEN$ points for redeeming rewards by handing in recyclables. In 2024, the GREEN@COMMUNITY facilities collected about 41,800 tonnes of recyclables and attracted around 12.7 million visitors.

Recycling Spot

Smart Recycling Bins

MANAGING THE ENVIRONMENTAL IMPACTS OF OUR OPERATIONS....

Green Management System

Aims: The EPD's work in 2024 focused on minimising the environmental impacts of our office operations by the following means:

- Improving our energy performance;
- Adopting environmentally friendly vehicles;
- Minimising resource consumption; and
- Improving our recycling performance.

Environmental Stewardship in Office Operations

To enhance the implementation of green management in our office operations, the Departmental Environment, Safety and Health Committee (DESHC) has been established, comprising the departmental management and the staff representatives. Meanwhile, the Knowledge Management Unit (KMU) monitors the overall energy consumption trends, resources usage and recycling performance of the EPD's offices. In addition, KMU inspects selected offices as part of the annual green audit, and each group/unit is required to audit their green measures each year to raise environmental awareness within the department.

Each group/unit of the EPD appoints a Group Environmental Representative to be responsible for implementing green management measures, conducting briefing on green and sustainable practices for other colleagues, promoting awareness of green office operations, and carrying out annual green audit. Also, every office has an Energy Warden to monitor and coordinate energy-saving measures, striving for efficient energy use.

Greener Workplace

The EPD has issued a comprehensive circular outlining recommendations to staff in supporting and integrating green management practices into daily office operations with a view to minimising the environmental impacts of our office operations by promoting energy conservation, resource efficiency, and waste reduction and recycling. To continuously reinforce the significance of green workplace habits, staff are reminded periodically on various green housekeeping measures, including Green Tips of the Day via our intranet, routine re-circulation of the Green Management circular, and through staff training activities (see Training and Development). These efforts enable staff to play an active role in adopting green practices and contribute to our green office objectives.

Energy Performance

In light of the fact that electricity generation accounts for about two-thirds of Hong Kong's carbon emissions, any savings will have knock-on effects on local and regional air quality and our contribution to combating climate change. The EPD constantly monitor energy consumption with a view to identifying opportunities for improving energy performance, including energy saving and application of renewable energy.

The EPD contributes to the Government's decarbonisation target by turning waste into energy and developing renewable energy resources in its operation. Landfill gas generated in the three strategic landfills is harnessed to generate electricity and energy for on-site use or as an alternative energy source for off-site use. The EPD is also actively developing renewable energy projects in suitable premises, such as solar energy generation system at restored landfill to maximise land use and enhance sustainability. At the same time, the EPD continues to develop WtE facilities, including Organic Resources Recovery Centre Phases 1 and 2, food waste/sewage sludge anaerobic co-digestion trial scheme at Tai Po Sewage Treatment Works, and the Integrated Waste Management Facilities Phase 1, etc., which help reduce waste disposal at landfills and minimise carbon emissions. (see Waste Management Facilities)

We strive to achieve the Government's Green Energy Target on improving the overall energy performance of government buildings and infrastructure. The total electricity consumption in all EPD's offices in 2024 was 4.14 million kWh. For the 2023-2024 financial year, the EPD achieved +41.6% in Energy Performance, including +3.2% in Energy Saving under Comparable Operating Conditions and +38.4% in Renewable Energy Generation, significantly surpassing Government's Green Energy Target.

Energy Performance in the 2023-2024 Financial Year

	ENERGY SAVING UNDER COMPARABLE OPERATING CONDITIONS	RENEWABLE ENERGY GENERATION
Progress in the 2023-24 Financial Year	+ 3.2% (a) (+value for saving)	+ 38.4% (b) (+value for increasing)
Energy Performance (a)+(b) (%)	+ 41.6% (+value for performance improvement)	

Green Energy Measures

The EPD's offices have implemented measures for saving energy, including the installation of motion-sensor lighting at our offices and facilities, maintaining air-conditioned room temperature between 24°C and 26°C, using office appliances with timer control or automatic power-off function, such as printers. In addition, the EPD constantly monitors the energy consumption by each office, and conducts annual self-inspections of all offices to identify areas of improvement. Energy Warden of each office are tasked to co-ordinate the implementation of energy-saving measures, conduct regular monitoring and reporting of annual energy consumption for their office. During the Annual Green Audit in offices, conducted in 2024, light intensity of offices was assessed and delamping was recommended for areas with light intensity higher than the recommended values to optimise energy use. Also, the audit suggested installing programmable timers for share-used electrical and electronic equipment, ensuring that they will automatically switch off outside office hours to further save energy.

Breakdown of Total Electricity Consumption and Pollutant Emissions in 2024

	2024
Electricity Consumption	
Office Electricity Consumption (million kWh)[@]	4.144
EV Electricity Consumption (million kWh)	0.006
Total Electricity Consumption (million kWh)	4.15
Pollutant Emissions from Electricity[#]	
Carbon Dioxide-equivalent (CO_2-e) (tonnes)	2,284
Sulfur Dioxide (SO_2) (kg)	8,716
Nitrogen Oxides (NO_X) (kg)	5,396
Respirable Suspended Particulate (RSP) (kg)	415

@ Since both Environment and Ecology Bureau (EEB) (Environment Branch) and EPD staff are co-located in some of the offices, the electricity consumption and emissions by EPD offices are calculated on a pro-rata basis

\# The latest emission factors are used for the calculation of CO_2-e emissions from electricity consumption

Green Practices and Reducing Waste

The EPD continued to promote waste reduction at the source and encourage clean recycling practices, with offices equipped with recycling bins/facilities to foster sustainable habits among staff. With the increased recycling awareness, waste plastic recycling performance has shown significant improvement, with a 58% increase in 2024 compared to 2023. Meanwhile, the decline in waste paper recycling may be attributed to reduced paper consumption, reflecting a shift toward more digital and paperless practices.

We have been minimising paper consumption by introducing e-services and e-publications, providing internet and intranet facilities for staff members and other alternatives, such as tablet computers instead of hard copies for meetings, disseminating information through intranet, extending the use of recycled papers, making full use of the blank side of used paper, reusing envelopes and loose minutes jackets, using e-invitations for various activities, etc. In 2024, we had 118 e-fax accounts in use by which 17,240 incoming e-faxes were received, representing a saving of 69,178 pages of paper.

Ongoing initiatives to reduce office waste at source include a Consumables and Inventory Recycling Scheme, a programme to refurbish old computers and donate them to the needy. Staff have also been issued with guidelines on green practices and waste avoidance.

Summary of Recyclable Recovery in the past five years (from 2020 to 2024)

TYPE OF RECYCLABLES	2020	2021	2022	2023	2024
Plastic Waste (kg)	206	414	359	550	870
Waste Paper (kg)	47,729	54,850	60,632	69,582	67,878[1]
Ink Cartridges (no.)	212	174	132	93	189
Laser Toner Cartridge (no.)	962	1,199	1,101	845	800
Photocopier Toner Bottles (no.)	242	312	250	556	401

[1] Since the second quarter of 2024, the waste paper recycling data for one of the EPD offices could no longer be distinguished from the overall records of the entire commercial building. As a result, the waste paper recovery for that office was estimated based on its 2023 data

Reducing Transport Impacts

Green transport is promoted by procuring environment friendly vehicles as new or replacement vehicles as far as practicable; encouraging staff to walk or use public transport where possible and to carpool when using government vehicles; including desirable vehicle emission standard in hiring of transport services whenever practicable; and reminding our drivers to observe eco-driving practices.

The EPD is gradually replacing its fleet with low to zero-emission vehicles, which is in line with the government-wide policy on promotion of use of electric vehicles which was also promulgated in the Hong Kong Roadmap on Popularisation of EVs announced in March 2021. The emissions and mileage of vehicles have been steadily decreasing, along with a reduction in emissions from our water quality monitoring vessel, the "Dr. Catherine Lam".

EPD's water quality monitoring vessel, the "Dr. Catherine Lam"

One of EPD's electric vehicles

Annual Fuel Consumption and Direct Pollutant Emissions [1] by Vehicles

	2023	2024
Vehicle Fleet	49 vehicles [2]	50 vehicles [3]
Diesel (litres)	27,284	28,291
Petrol (litres)	55,155	45,304
Electricity (kWh) [4]	6,768	6,363
Mileage (km)	623,409	570,636
NO_x (kg) [5]	836	726
RSP (kg) [5]	118	91

[1] Only tailpipe emissions are presented. Indirect emissions from the consumption of electricity by EVs are included.

[2] Including 18 diesel vehicles with AdBlue (urea solutions), 29 petrol, and two electric.

[3] Including 19 diesel vehicles with AdBlue (urea solutions), 29 petrol, and two electric. An electric passenger car is scheduled for delivery by the end of 2025, and the replacement of three petrol vehicles with electric ones has been endorsed in the Government Logistics Department's vehicle vetting exercise 2024.

[4] Only charging activities in government-owned carparks were captured

[5] Vehicle emissions are estimated based on the equations given in The Clean Air Charter – A Business Guide Book

Annual Fuel Consumption and Direct Pollutant Emissions by the "Dr. Catherine Lam" Marine Monitoring Vessel

	2023	2024
ULSD (litres) [6]	25.2	23.1
SO_2 (kg) [7]	2.1	1.9
NO_x (kg) [7]	1,268	1,164
RSP (kg) [7]	50	45.8

[6] The "Dr. Catherine Lam" uses Ultra Low Sulphur Diesel (ULSD)

[7] Reference: AP 42 Compilation of Air Pollutant Emission Factors from the US Environmental Protection Agency

Water Management

In 2024, the total fresh water consumption in EPD's offices decreased from 4,603 m^3 in 2023 to 4,585 m^3, reflecting a reduction of approximately 0.4%. We will continue to monitor fresh water usage and implement water management measures where appropriate to enhance water conservation.

	2023	2024
General Fresh Water Consumption (m^3)	2,733	2,827
Fresh Water Consumption for Flushing (m^3)	1,870	1,758
Total Fresh Water Consumption (m^3)	4,603	4,585

Green Government Procurement

The EPD adopted the green specifications in the purchases of products and services whenever practicable. In 2024, about $15.5 million was spent on procurement of products and services for which green specifications in tendering conditions had been adopted. Out of the green procurement list of 183 Government product items with established green specifications promulgated by the EEB, the EPD has procured goods/services under 64 product items with green specifications. The major items of green products purchased were recycled papers, recyclable ink/toner cartridges and computer appliances complying with energy saving standards.

We would continue to support and promote the practice of green procurement by adopting the green specifications in the purchases of products and services promulgated by the EEB and following the green guidelines in the procurement of good and services.

Carbon Audit

Since January 2017, all Government bureaux and departments have been required to conduct annual carbon audits of their buildings that have annual electricity consumption of more than 500,000 kWh. The Island West Transfer Station (IWTS) Administration Building is an EPD office that falls under this category. Compared to 2023, the total annual emissions of CO_2-e of the IWTS Administration Building decreased by 10.34% in 2024. To identify energy saving opportunities, we have engaged a consultant to conduct an energy audit in 2023. Through adoption of energy saving measures recommended by the energy audit, such as progressive replacement of non-LED lighting with LED and retrofit of aged air distribution ductworks, the GHG emissions per employee was reduced from 2.06 tonnes of CO_2-e/employee in 2023 to 1.95 tonnes of CO_2-e/employee in 2024.

Carbon Audit Results of the IWTS Administration Building

	2023	2024
1. Scope of Reporting		
Total Scope 1 / Direct GHG Emissions	8.05 tonnes of CO_2-e	10.35 tonnes of CO_2-e
Total Scope 2 / Indirect GHG Emissions	486.23 tonnes of CO_2-e	435.89 tonnes of CO_2-e
Total Scope 3 / Other GHG Emissions	6.49 tonnes of CO_2-e	2.75 tonnes of CO_2-e
Total GHG Emissions	500.76 tonnes of CO_2-e	448.99 tonnes of CO_2-e
2. GHG Performance in Ratio Indicators		
GHG Emissions per Floor Area (Total GHG Emissions / Floor Area)	0.13 tonne of CO_2-e/square metre	0.12 tonne of CO_2-e/square metre
GHG Emissions per Employee (Total GHG Emissions / No. of Employee)	2.06 tonnes of CO_2-e/employee	1.95 tonnes of CO_2-e/employee

Green Recognition

The environmental improvement efforts of the EPD have earned us the Energywi$e Certificate – Excellent Level, Wastewi$e Certificate – Excellent Level, Green Organisation Label under the Hong Kong Awards for Environmental Excellence (HKAEE) and the Hong Kong Green Organisation Certification (HKGOC). The EPD also continued to qualify as a "Companion" under two categories of the Hong Kong Quality Assurance Agency (HKQAA) Registration Scheme – Eco-friendly Series and Recycling Services. In addition, we obtained "Excellent Class" or "Good Class" grading under the Indoor Air Quality Certification Scheme for our offices, visitor centres and facilities.

From left to right are the certificates of Energywi$e, Wastewi$e, Green Organisation Label under the Hong Kong Awards for the HKAEE and the HKGOC, and Certificates of Companion under the HKQAA Registration Scheme – Eco-friendly Series and Recycling Services.

Targets for 2025

LONG TERM OBJECTIVES	PROGRAMME AREA	2025 TARGETS
Demonstrate efficiency and commitment to environmental conservation by reducing expenditure and resources consumption	Energy Performance	• Continue to reduce electricity consumption at our offices
		• Offset electricity consumption with the renewable energy generated in facilities as much as possible
		• Adopt measures to further enhance energy efficiency (e.g. installing motion-sensor lighting at our facilities)
	Fuel Consumption	• Minimise fuel consumption by improving fuel consumption efficiency
Pursue continual improvement in the environmental performance of our internal operations by implementing an effective management system	Waste Reduction	• Continue to reduce and recycle waste generated in our offices
	Green Recognition	• Maintain the Energywi$e, Wastewi$e and Green Organisation Labels under the HKAEE and the HKGOC
		• Continue as a "Companion" under the HKQAA Registration Scheme – Recycling Services and Eco-friendly Series
		• Identify new offices/facilities for Indoor Air Quality Certification

Staff Training and Development

The EPD organises training programmes for new recruits, mid-career staff, and staff with high potential to help them advance their skills so they can support our operations and develop their careers. In 2024, our staff attended 790 training programmes for a total 5,003 training days and received an average 2.01 days of training per staff member. Highlights included:

- 37 structured modules provided through the Environmental Academy for about 260 newly recruited Assistant Environmental Protection Officers (AEPOs) and Environmental Protection Inspectors (EPIs).
- Records Management Training was held in January 2024 for AEPOs/Environmental Protection Officers and EPIs new recruits.
- Popular Science Lecture on "Polar Research and Climate Change" was held in April 2024, for colleagues from EEB(Environment Branch), Agriculture, Fisheries and Conservation Department (AFCD), Electrical and Mechanical Services Department, EPD, Government Laboratory and Hong Kong Observatory (HKO).
- Learning the Spirit of the "Two Sessions" was organised in May 2024, for Directorate Officers, Segment D and AO grade officers of EEB(Environment Branch), EEB(Food Branch), AFCD, Food and Environmental Hygiene Department (FEHD), Government Laboratory, HKO and EPD.
- Exchange and Collaboration Project between Hong Kong Civil Servants and Chinese Mainland Cities in the Greater Bay Area (Shenzhen) - Experience Sharing was organised in May 2024, for EPD colleagues.
- Experience Sharing on Media Handling was held in June 2024, for EPD colleagues.
- Briefing on (1) the updated Civil Service Code, (2) Monitoring of contractors and Handling of media enquiry (Part II) and (3) Trial film screening "Enchanting China" was arranged in August 2024, for EPD colleagues.
- Seminar on the Spirit of the Third Plenary Session of the 20th Central Committee of the Communist Party of China was held in October 2024, for Directorate Officers, Segment D and AO grade officers of EEB(Environment Branch), EEB(Food Branch), AFCD, EPD, FEHD, Government Laboratory and HKO.

Staff Training in 2024

GRADE OF STAFF	AVERAGE NO. OF TRAINING DAYS
Senior Management	3.65
Professional	3.06
Technical	1.75
Other	1.06
Average per staff member	**2.01**

Staff Welfare and Safety

86 training classes on health and safety were organised in 2024 for more than 349 participants. Safety tips and reminders were also sent to staff regularly through the intranet system. The rate of occupational injuries was 1.5 per 1,000 staff during the year. Each case was followed up to identify the cause and, where appropriate, necessary measures were undertaken to prevent recurrence. Incident summaries were also prepared and shared for staff to heighten alertness and prevent further incidents.

At the EPD's waste management facilities, the accident rate was 0.4 accidents per 100,000 man-hours worked. The facilities include the strategic landfills, CWTC, Animal Waste Composting Plant, Low-level Radioactive Waste Storage Facility, restored landfills, RTSs, Food Waste Pre-treatment Facilities for Food Waste/Sewage Sludge Anaerobic Co-digestion Trial Scheme, Pilot Biochar Production Plant, Bioconversion of Organic Waste from Chicken Farms, T·PARK, O·PARK1, WEEE·PARK and Y·PARK.

In terms of community-building, staff of the EPD are encouraged to join community activities supporting environmental and social causes. Staff social events are also organised to build team spirit and encourage networking. In 2024, staff participated in three fundraising events for the Community Chest, including Skip Lunch Day, Green Low Carbon Day and Dress Casual Day.

EPD Volunteer Team

The EPD Volunteer Team joined the Hiking and Planting Day organised by the AFCD at Luk Chau Shan in Ma On Shan Country Park on 14 April 2024. A total of 48 EPD colleagues and their immediate family members had collectively planted over 50 seedlings.

15 EPD colleagues came together on 13 July 2024 to prepare meal boxes at Food Angel. Together they have prepared 4,222 meal boxes for distribution to the underprivileged communities in Hong Kong

To celebrate the 75th Anniversary of the founding of the People's Republic of China, EPD Volunteer Team partnered with the AFCD and EEB Volunteer Teams on 14 September 2024 for a beach cleanup activity at Tung Ping Chau Marine Park. Thanks to the joint effort of over 110 participants, we have collected a total of 83 bags, around 500 kg of trash.

EPD Mentorship and Job Shadowing Programmes

The EPD Mentorship Programme provides university students with opportunities to learn more about their careers in the environmental field, the mentorship programme aims to create supportive mentoring relationships between EPD professional staff (mentors) and students (mentees) to enhance their educational, social and career growth. In 2024, 26 university students have participated in the Programme.

The EPD Job Shadowing Programme provides an opportunity for Secondary 4 to Secondary 6 students to shadow the professional and technical staff of the EPD, and to visit the environmental facilities of the EPD. In 2024, a total of 167 students from 54 secondary schools have participated in the Programme.

Targets for 2025

LONG TERM OBJECTIVES	PROGRAMME AREA	2025 TARGETS
Promote a lifelong learning culture among EPD staff and encourage their participation in training activities	Human Resources	• Organise at least 80 in-house training programmes • Arrange at least 90 in-house and external safety and health

INNOVATION AND TECHNOLOGY

The above smart technologies have won awards in different competitions, demonstrating the trade recognition of EPD's efforts in deploying smart technologies in our enforcement works.

The EPD handles over 24,000 pollution complaints each year. To further improve efficiency, the EPD has progressively introduced various smart technological equipment in recent years, including "Ground Penetrating Radar" (GPR), "Unmanned Sampling Boat", "Mesh Network Sampling Robot Squad" and development of the "Artificial Intelligence Environmental Air Nuisance Investigation Robot Dog" (AI Dog). With the application of innovative technologies, the EPD has successfully overcome enforcement or operational challenges. Since 2022, the EPD has applied the GPR to assist in investigation into the seepage/leakage from the underground sewage facilities in the New Territories Exempted Houses and the underground sewage flow path, and also applied the GPR to other urban districts, including To Kwa Wan, Kowloon City, Tsuen Wan, Tuen Mun and Yuen Long areas, and has identified many misconnected sewage pipes, and pipe clogging problems in the underground of older districts.

In addition, both the "Unmanned Sampling Boat" and "Mesh Network Sampling Robot Squad" are equipped with 5G system and water sampling devices, allowing the investigators to conduct preliminary water quality analyses and collect water samples remotely. The EPD has deployed the "Unmanned Sampling Boat" to chart the water turbidity near the Tung Chung New Town reclamation area in assisting the investigation of a muddy water situation and to place oil absorbents to promptly contain oil spills in rivers.

Furthermore, the AI Dog being developed by the EPD applies AI to analyse the pollutants in the air to deduce the sources and pollution activities. It can assist in tracing pollution sources and enforcement work in the future.

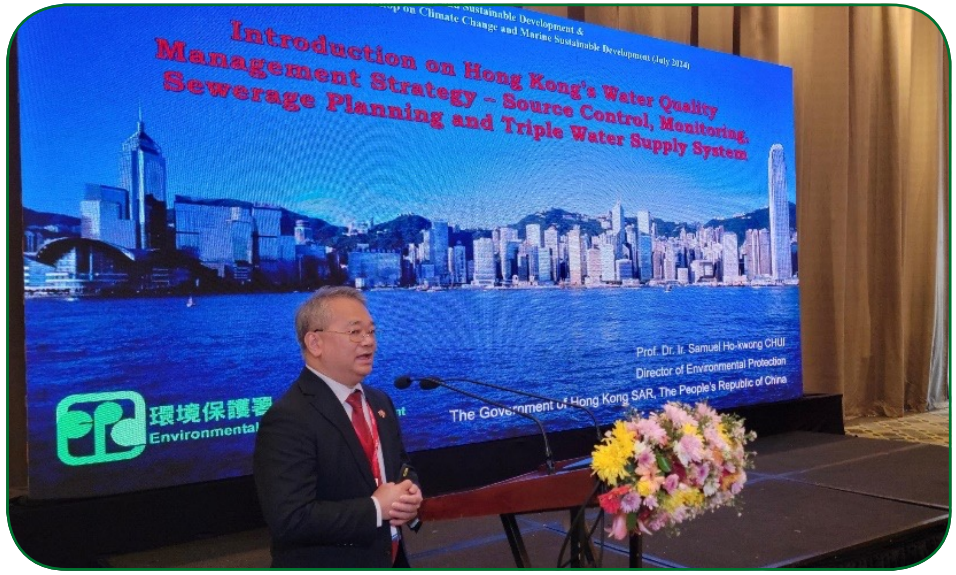
Collaboration under Belt and Road Initiative

Hong Kong has emerged as a pivotal "super-connector" under the Belt and Road (B&R) Initiative, leveraging its unique advantages to bridge the Chinese Mainland with other B&R regions. With the steadfast support of the HKSAR Government, the EPD is well-positioned to facilitate significant exchanges in areas such as environmental protection knowledge, technical innovation, and professional development. In 2024, the EPD continues to engage with B&R countries and progressively press ahead for in-depth collaborations. The on-going efforts in fostering technical exchanges, technological advancements, and environmental sustainability are set to enhance the mutual benefits for all parties involved in the B&R Initiative.

To manifest the concrete implementation of the Memorandum of Understanding (MoU) on professional development signed between the EPD and the Central Environment Authority (CEA) of Sri Lanka in 2023, the Director of Environmental Protection, Dr Samuel Chui led a delegation of the HKSAR Government to attend the "Symposium on Water Technology, Climate Change and Sustainable Development cum The 9th China-Sri Lanka Joint Workshop on Climate Change and Marine Sustainable Development" under the B&R Initiative in Sri Lanka in July 2024. The HKSARG delegation, comprising representatives from the EPD, the Water Supplies Department (WSD), the DSD and the AFCD had in-depth exchanges with officials from government agencies such as the CEA and the Ministry of Water Supply and Drainage of Sri Lanka, sharing Hong Kong's successful experience in a wide array of subjects including water resources management, application of smart-technologies and modelling in water quality management, sewage collection and treatment technology and infrastructure planning, modern aquaculture technologies and bioremediation of polluted sediments.

The HKSARG delegation attended the Symposium on Water Technology, Climate Change and Sustainable Development cum The 9th China-Sri Lanka Joint Workshop on Climate Change and Marine Sustainable Development in Sri Lanka

The representatives from the EPD also shared their experience in bacteriological water quality monitoring for bathing beaches, and provided demonstration training to Sri Lankan technicians on water sample collection, testing and data analysis. At the International Symposium on "Improving Air Quality in Low- and Middle-Income Countries: Monitoring, Modelling and Pollution Control" organised by the China-Sri Lanka Joint Research and Demonstration Centre for Water Technology and held back-to-back with the abovementioned Symposium cum Workshop, the EPD officers shared Hong Kong's successful experience in applying innovation and technology to enhance air quality management.



Dr Samuel Chui, Director of Environmental Protection making a keynote presentation at the 9th China-Sri Lanka Joint Workshop on Climate Change and Marine Sustainable Development in July 2024

The HKSARG delegation participating in a technical exchange with experts from the Ministry of Water Supply and Drainage and CEA of Sri Lanka and the Chinese Academy of Sciences on mutually interested topics

The HKSAR Government utilises the annual Eco Expo Asia as an effective platform to bring together international exhibitors and industry professionals to showcase state-of-the-art green solutions as well as to promote environmental co-operations with B&R countries. In Eco Expo Asia 2024, high-level delegations from six B&R countries including Myanmar, Malaysia, Laos, Vietnam, Saudi Arabia and Brunei Darussalam took part in the event. The EPD, the WSD and the Civil Engineering and Development Department (CEDD) arranged technical visits for delegations from B&R countries to Hong Kong's climate adaptation and resilient infrastructures. These infrastructures effectively strengthen the city's ability to adapt to climate change, minimising the impacts and losses caused by extreme weather. The EPD also took the opportunity to exchange with the delegates from B&R countries and the Research Center for Eco-Environmental Sciences of the Chinese Academy of Sciences on various topics, including water quality management, strategies for combating climate change, application and development of advanced technology and smart enforcement in environmental protection.

The Eco Expo Asia 2024, jointly organised by the Hong Kong Trade Development Council and Messe Frankfurt (HK) Ltd and co-organised by the EEB, opened at AsiaWorld-Expo on 30 October 2024, attracting over 300 exhibitors and attended by delegates from 6 B&R countries.

EPD officers demonstrating the smart technologies to complement law enforcement work to the delegates from the B&R countries at the EPD booth

The HKSAR Government is also actively engaging with relevant Chinese Mainland authorities to collaborate on taking forward B&R environmental co-operations. The EEB and the Hong Kong and Macao Affairs Office of the Ministry of Ecology and Environment (HKMAO of MEE) of the People's Republic of China signed the Cooperation Arrangement on Capacity Building for Ecological and Environmental Protection Staff in late October 2024. The Cooperation Arrangement leverages on the HKSAR's advantages to strengthen the work of both parties on implementing international environmental conventions and pressing ahead with the ecological and environmental protection work for the green B&R.

Looking forward, the EPD will continue to leverage Hong Kong's experience and advantages in environmental protection to proactively connect with B&R countries and regions, with a view to jointly achieving high-quality green and sustainable development.

The EEB and the HKMAO of MEE of the People's Republic of China signed a Cooperation Arrangement on Capacity Building for Ecological and Environmental Protection Staff on 29 October 2024

The Ombudsman's Awards 2024

Mr. Jason Tam and Ms. Fanny Wong received the commendation in EPD Awards Ceremony

Improving the Odour Problem along the Waterfront of Tsuen Wan

Ms. Fanny Wong received the Ombudsman's Awards 2024 for officers of Public Organisations for resolving decades-long odour and water pollution problem along Tsuen Wan Waterfront during her tenure as Senior Environmental Protection Officer for Tsuen Wan District.

Tsuen Wan, as a long-developed area along Victoria Harbour, had been plagued by nearshore water pollution for many years, with waterfront odours affecting its 320,000 residents. The odour problem mainly arises from the aging drainage systems in old urban districts, leading to the cross-connection of sewers and storm drains, resulting in sewage flowing into the harbour and causing pollution.

Ms. Wong spearheaded innovative solutions to this persistent environmental problem, proactively planning and conducting comprehensive pollution source investigations. She not only utilised *E. coli* analysis of water samples scientifically, but also employed smart innovative equipment, including pipeline closed-circuit television robot and ground penetrating radars, to successfully identify hidden drainage misconnections within the extensive underground pipe network.

Ms. Fanny Wong briefed Legislative Council and District Council members at Tsuen Wan Promenade on the government's efforts to improve the nearshore water quality and odour.

With the completion of drainage rectification works, the levels of *E. coli* in seawater and hydrogen sulphide, the major contributor to the odour, have reduced by 90%, allowing residents to enjoy a more pleasant promenade. The prominent improvement has been well recognised by the councillors, residents and some media reports.

The EPD team successfully resolved this "long-standing, big and difficult" local problem by effectively leveraging innovative methods, combined with goal-oriented professionalism and a collaborative partnership approach. Ms Wong's dedication and hard work was also recognised and commended by the Ombudsman.

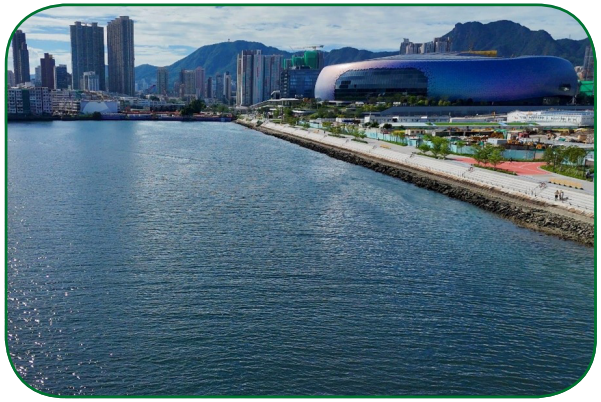
Improving the Odour Problem along the Waterfront of Kowloon City

Mr. Jason Tam received the Ombudsman's Awards 2024 for officers of Public Organisations in recognition of his outstanding performance in identifying and rectifying sewers misconnection in Kowloon City during his tenure as Senior Environmental Protection Officer for Kowloon City.

As a co-hosting venue for the 15th National Games in 2025, the nearshore environment of Kai Tak Sports Park, which is adjacent to the To Kwa Wan Typhoon Shelter (TKWTS), is of particular importance. To this end, Mr. Tam proactively led his team to conduct extensive investigative surveys against sewer misconnections and detailed tracing of their pollution sources in Kowloon City, whilst utilising innovative technologies to enhance the capability and efficiency in coping with different environments. These include installing surveillance cameras inside stormwater manholes at road sections with busy traffic to continuously monitor the flow therein via network; using ground penetrating radars to generate instant images of underground drains for inspection; and deploying drainage inspection pole camera to identifying damages or wastewater entering stormwater drains/manholes.

Mr. Tam also actively promoted inter-departmental collaboration. He worked closely with the BD and the DSD to rectify misconnections promptly, eliminating the pollution to Victoria Harbour at source. When the rectification works involved roads with busy traffic, he took the initiatives to coordinate with the Hong Kong Police Force for works arrangement, displaying his strong commitment on inter-departmental collaboration to tackle challenges encountered. The overall pollution load at the relevant stormwater outfalls has so far been reduced by nearly 90%, exceeding the target set in the Policy Address 2022 and was fully affirmed by the Ministry of Ecology and Environment. His dedication and efforts have made him a role model for achieving the EPD's mission in maintaining a high standard of environmental quality.

Apart from rectifying sewer misconnections, Mr. Tam collaborated with the CEDD to carry out dredging and bioremediation works in TKWTS. The dredging works removed sediments accumulated near the stormwater drainage outfalls, which not only improved the drainage function of the culverts, but also reduced environmental problems that caused by the sediments. The bioremediation works enable the microbes to decompose the pollutants into odourless nitrogen and carbon dioxide under aerobic conditions, hence resolving the odour problem. The aforesaid works were completed in end 2024. At present, the environmental quality of TKWTS and its surroundings has been improved significantly with encouraging results.



The revitalised To Kwa Wan Waterfront

The Platinum Award (Innovation) of the CIWEM HK 2024 Innovation & Sustainability Awards

The EPD conducts hundreds of water sampling and water quality monitoring at hundreds of spots every year. Some would be for emergency situations such as the failure of sewerage system or even chemical spillage. Some spots would be in remote and/or dangerous locations. In order to conduct the water sampling duties more efficiently and enhance the capability of water related investigation works in difficult and complex environment, the Smart Technology Enforcement Task Force of Regional North Office designed and developed the "5G Unmanned Water Sampling Boat and Mesh Network Sampling Robot Squad" project.

With successful real job references that demonstrated the effectiveness of this innovative project, the EPD submitted the project to the CIWEM HK[1] Innovation and Sustainability Awards[2]. Amidst keen competition from numerous project proposals by various public and private enterprises, the EPD achieved encouraging result: The Platinum Award (the highest-ranking award of the Innovation Category), showcasing the EPD's commitment in deploying smart and practical innovation to improve public services.

[1] The Chartered Institution of Water and Environmental Management (CIWEM) is a professional institution providing professional, independent advice to the public and government on matters relating to water, environmental management and sustainable environment.

[2] CIWEM HK Innovation and Sustainability Awards is an independent endorsement to amplify and credit contributions to innovative and sustainable solutions. The Awards aims at promoting and recognising outstanding projects and building a platform to share experiences.

Certificate of Merit - 2023-24 Hong Kong Awards for Industries: Innovation and Creativity

The Web-based Construction Noise Management Plan Platform (Web-CNMP) is one of the initiatives of the EPD to leverage digital transformation for more effective environmental assessment in Hong Kong. It demonstrates how innovative technologies can enhance construction noise management through integrating GIS-based spatial analysis, standardised noise modelling, and the database of quiet construction methods. The developer of the Web-CNMP, Ove Arup & Partners HK Ltd, was honoured with the Certificate of Merit in the 2023-24 Hong Kong Awards for Industries (Innovation and Creativity Category) to recognise its contribution.

GREEN$ App, the “Best App for Good” 2024 HK Award under the 2024 Google Play Best Awards for Hong Kong

The GREEN$ mobile app developed by the EPD was awarded the 2024 Google Play “Best App for Good” in Hong Kong.

The primary function of the GREEN$ mobile app is to facilitate public participation in the GREEN$ Electronic Participation Incentive Scheme (ePIS) using smartphone. Members of the public can earn GREEN$ for redemption of gift items through the GREEN$ ePIS when handing in general recyclables at Recycling Stations, Recycling Stores, Recycling Spots and EPD’s smart recycling bins for clean recycling, or food waste at food waste smart recycling bins operated or funded by the EPD. The GREEN$ mobile app also features an interactive map to facilitate users to locate the nearby recycling points.

The GREEN$ ePIS has gained over one million registered user accounts. The positive response from the public reflects their enthusiasm for waste reduction and recycling and their commitment to changing their living habits through action. We welcome collaborations with different platforms and leverage technology to engage more members of the public and provide more convenient service, to join efforts in fostering a green culture of waste reduction and recycling in our society. GREEN$ ePIS will continue to offer users more attractive and practical reward options.

NATIONAL ECOLOGY DAY 2024

The EPD launched various special activities and offers for the public to support and participate in the second National Ecology Day on 15 August 2024. To promote society's awareness towards ecological civilisation and environmental protection, our nation designated 15 August as National Ecology Day. Members of the public enjoyed a special discount of 18.5% off for gift redemptions or e-coupons on the GREEN$ mobile app, at GREEN@COMMUNITY recycling stations or stores, and at gift redemption units provided by the EPD at various locations. Moreover, free workshops were held at T·PARK on August 25. Over 30 non-governmental organisations provided a series of free activities and offers, including free admission to facilities, free guided eco-tours, night safaris, workshops and seminars.

APPENDIX

Appendix I

Realising Our Vision

Vision

In his important speech on 1 July 2022, President Xi Jinping brought forward "four proposals", emphasising that "the people's desire for a better life is the goal we strive to realise." Today, the people of Hong Kong share this desire for a better life. It is the Government's duty to act pragmatically, uphold people's trust, prioritise the desire of the entire community, especially the general public, in its governance, and confront challenges with greater resolve and more effective initiatives.

Guided by President Xi's "four proposals", the EPD is dedicated to

- creating a healthy and pleasant environment for Hong Kong, and
- sustaining such an environment for our future generations.

To realise our vision, we will continue to strengthen our ability to meet environmental sustainability goals. We will assist in formulating policies and implement programmes to improve and safeguard the environment while contributing proactively to strategic decision-making in the Government that will have an impact on the environment. We are committed to ensuring that all services and programmes offered by the EPD, as well as our own internal operations, are developed and conducted in an environmentally responsible manner.

In pursuance of these goals, the EPD have adopted the following principles:

Compliance

We aim to establish an effective legislative and efficient control framework to safeguard the health and welfare of the community from any adverse environmental issues. We will facilitate businesses to comply with environmental legislation through educational and promotional programmes, and encourage our business partners to further enhance their performance by adopting green practices with a view to going beyond compliance.

We will seek to provide moral leadership by not only complying with the letter of the law, but the spirit of all applicable legislation, standards and regulations, as well as our internal guidelines and procedures, in all our operations within the EPD. We will endeavour to surpass them whenever possible.

Pollution Prevention

We aim to pre-empt environmental problems associated with development projects, plans and policies by applying environmental impact assessment in the planning process and seeking opportunities to improve the environmental quality of Hong Kong.

We will continue to implement ISO14001 environmental management systems to improve continually the environmental performance of our major facilities. We will avoid, reduce and control environmental pollution arising from our day-to-day working practices. We will require our contractors to adopt and implement sound environmental management systems and pollution control measures, and actively encourage businesses and other organisations in Hong Kong to adopt similar systems and measures. We will help reduce air emissions by implementing plans and measures that are relevant to our operations to meet the commitments of the Clean Air Charter.

Green Transformation of Transport

We aim to achieve zero vehicular emissions by 2050 in Hong Kong by promoting green transport development and enhancing the EV charging infrastructure through expansion of the public charging network, implementation of EV-charging at Home Subsidy Scheme and granting of Gross Floor Area Concessions to new buildings, aiming to foster a cleaner, healthier, and more sustainable urban environment for all residents, reduce the environmental impact of transportation and pave the way for a greener future.

Adequate Infrastructure for Waste Treatment

We will provide first-class physical infrastructure for the treatment and disposal of waste and wastewaters in line with international best practice.

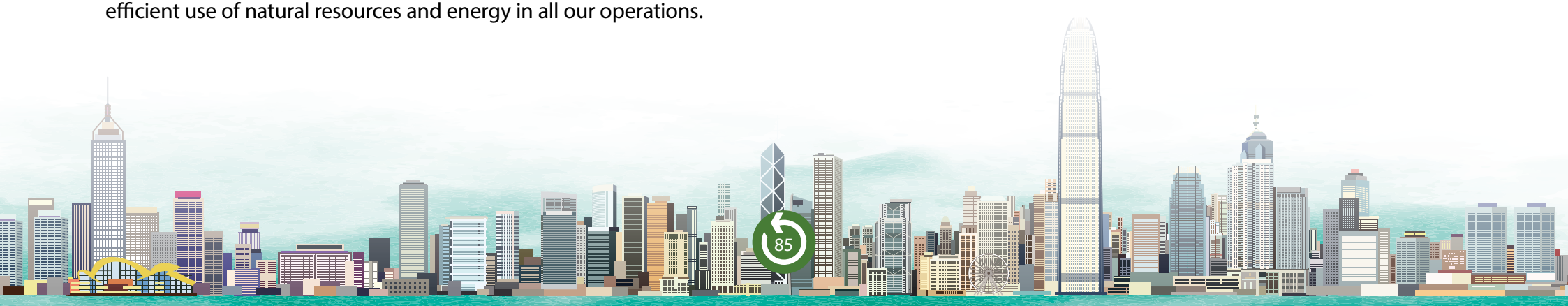
Response to Environmental Incidents

We will implement an emergency response system for handling environmental incidents and we will work closely with other government departments in responding quickly to minimise the damage to the environment.

Waste Reduction, Recycling and Management

We aim to promote and facilitate waste reduction at source, reuse and recycling, as well as to plan and provide convenient, cost-effective and sustainable waste management facilities.

We will exercise the principles of Reduce, Reuse, Recycle and Responsibility in the consumption of materials and seek continual improvement in the efficient use of natural resources and energy in all our operations.



Communication and Partnership

We aim to promote community awareness of the environment and sustainable development through campaigns, publicity, education and action programmes. We strive to partner with all relevant stakeholders in promotion and public education activities with a view to harnessing the community's support for, and contribution to, achieving our desired goals for the environment.

We will also publicise to the community our policies on the environment and report annually on our environmental performance. We will ensure that all our staff are aware of our policies and that they are able to provide detailed information about our policies and initiatives to stakeholders in their particular areas of concern.

Training

We will ensure that, through appropriate training and professional development, every member of our staff has the knowledge and competency to assume his/her responsibilities and to participate constructively in relevant activities.

Management Review

The Management will review this policy as well as our objectives and targets on the environment with regard to changing internal and external factors, and seek continual improvement in our performance.

Appendix II

EPD Offices and Facilities – Photos

EPD Headquarters at the Central Government Offices

O·PARK1

O·PARK2

Pilot Biochar Production Plant in EcoPark

GREEN@COMMUNITY

WEEE·PARK

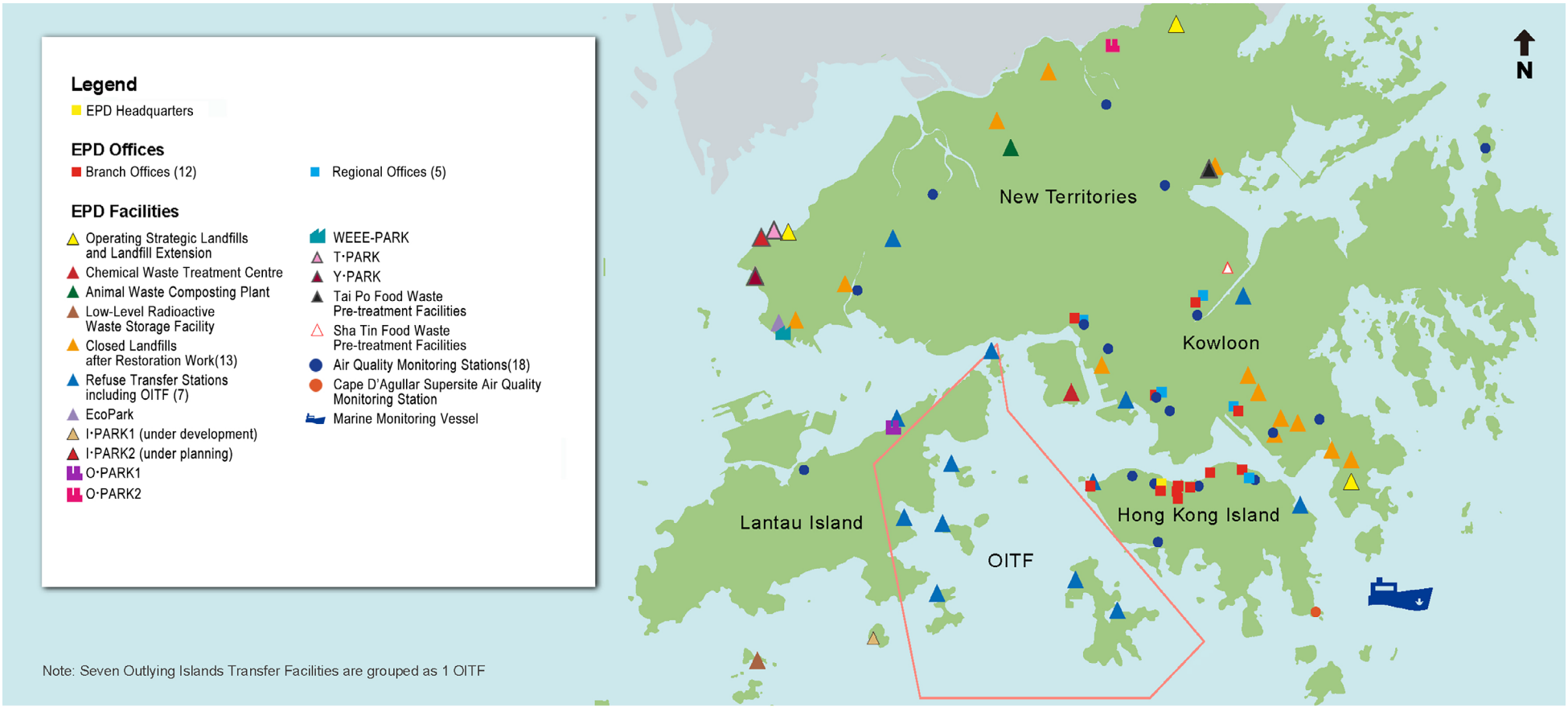
Chemical Waste Treatment Centre

EcoPark

Island West Transfer Station

T·PARK

EPD Offices and Facilities – Maps of Facilities and GREEN@COMMUNITY



綠在區區
GREEN — COMMUNITY

尋找回收設施
Search recycling facilities

香港減廢網站
Hong Kong Waste Reduction Website
www.wastereduction.gov.hk

EPD 2024 Expenditure

2024 EXPENDITURE : $8.85 BILLION	
EXPENDITURE	**PERCENTAGE**
Staff cost	16.6%
General recurrent expenses	28.5%
Capital and non-recurrent expenditure	19.1%
Fees for operation of waste management facilities	35.8%

(Excluding spending under the Capital Works Reserve Fund)

Staff Establishment

STAFF ESTABLISHMENT : 2,112 EMPLOYEES (as at 31 December 2024)	
BREAKDOWN BY GENDER	
Gender	**Number of Employees**
Male	1,183
Female	853
Unfilled	76
BREAKDOWN BY GRADE	
Grade	**Number of Employees**
Professional	656
Technical	1,024
Admin & Support	432

Appendix III

Performance Pledge

OUR SERVICES		TARGETS FOR 2024	ACHIEVEMENT IN 2024	TARGETS FOR 2025
Responding to Complaints and Enquiries				
Incidents involving an immediate threat to health		Immediate	Target achieved	Immediate
Other pollution complaints		95% in 3 working days	Target achieved	95% in 3 working days
General enquiries • by phone		95% in 5 working days	Target achieved	95% in 5 working days
• by written		95% in 5 working days	Target achieved	95% in 5 working days
Processing Applications for Permits/Licences/Approvals				
AIR	Emission Testing Notices to smoky vehicles owners	99% in 3 working days	Target achieved	99% in 3 working days
	Specifications and plans for installation or alteration of furnaces or chimneys	90% in 16 days	Target achieved	90% in 16 days
	Written comments on the adequacy of information submitted for Specified Process Licence	90% in 10 working days	Target achieved	90% in 10 working days
	Issue the Specified Process Licence upon finalisation of the Terms and Conditions	90% in 7 working days	Target achieved	90% in 7 working days
	Open Burning Permit	90% in 16 days	Target achieved	90% in 16 days
	Registration for asbestos personnel	95% in 68 days	Target achieved	95% in 68 days
	Asbestos abatement and management plans	95% in 25 days	Target achieved	95% in 25 days
	Processing of vehicle emissions compliance/ exemption applications for parallel imported vehicles	90% in 9 working days upon receipt of sufficient information	Target achieved	90% in 9 working days upon receipt of sufficient information

	OUR SERVICES	TARGETS FOR 2024	ACHIEVEMENT IN 2024	TARGETS FOR 2025
ENVIRONMENTAL ASSESSMENT & PLANNING	Environmental Impact Assessment Study Briefs	45 days	Target achieved	45 days
	Permission to apply directly for environmental permits	45 days	Target achieved	45 days
	Review of Environmental Impact Assessment Reports	60 days	Target achieved	60 days
	Approval or rejection for Environmental Impact Assessment Reports after public consultation	30 days	Target achieved	30 days
	Environmental permits	30 days	Target achieved	30 days
	Further environmental permits	30 days	Target achieved	30 days
	Variation of environmental permits	30 days	Target achieved	30 days
	Noise Impact Assessment Reports for residential developments	90% in 18 working days (normal cases); 90% in 30 working days (complicated cases)	Target achieved	90% in 18 working days (normal cases); 90% in 30 working days (complicated cases)
NOISE	Construction noise permits	90% in 18 days	Target achieved	90% in 18 days
	Noise emission labels	90% in 15 days	Target achieved	90% in 15 days
WASTE	Registration of chemical waste producers	98% in 30 days	Target achieved	98% in 30 days
	Part A Chemical waste notifications	95% in 12 days	Target achieved	95% in 12 days
	Marine dumping permits	90% in 18 days	Target achieved	90% in 18 days
	Permit for Import of Scheduled Chemicals	95% in 15 days	Target achieved	95% in 15 days
	Permit for Use of Scheduled Chemicals	95% in 15 days	Target achieved	95% in 15 days
	Open a billing account for disposal of construction waste	90% in 9 working days	Target achieved	90% in 9 working days

OUR SERVICES		TARGETS FOR 2024	ACHIEVEMENT IN 2024	TARGETS FOR 2025
WATER	Water Pollution Control Ordinance licences (Excluding licences requiring public notification)	95% in 14 days after receipt of payment	Target achieved	95% in 14 days after receipt of payment
Providing Waste Management Services				
Opening hours of strategic landfills		99% for at least 11 hours per day	Target achieved	99% for at least 11 hours per day
Opening hours of refuse transfer stations (Excluding North West New Territories Refuse Transfer Station and Outlying Islands Transfer Facilities)		98% for at least 16 hours per day	Target achieved	98% for at least 16 hours per day
Opening hours of O•PARK1		98% for at least 14 hours per day	Target achieved	98% for at least 14 hours per day
Providing assistance to deal with significant spillage of chemicals		98% in 90 minutes	Target achieved	98% in 90 minutes
Providing Environmental Information				
Hourly Air Quality Health Index on AQHI website		98% in a year	Target achieved	98% in a year
Anti-pollution prosecution figures		Monthly	Target achieved	Monthly
Grading of beach water quality		Weekly	Target achieved	Weekly
Environmental Impact Assessment studies released on EIAO website		Immediate	Target achieved	Immediate