

An aerial photograph of Hong Kong's skyline at sunset. The city is densely packed with skyscrapers and residential buildings. The Victoria Harbour is visible in the center, with several boats. The sky is a mix of orange, pink, and blue. In the foreground, there are green trees. A semi-transparent blue rectangle is overlaid on the right side of the image, containing the title text.

HONG KONG'S PATH TO BECOMING A SUSTAINABLE CITY

Environmental Report
2012-2017

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MESSAGE FROM SECRETARY FOR THE ENVIRONMENT

Cleaning-up the environment and making Hong Kong climate-ready are urgent matters of top priority. The good health of our environment determines whether we and other species can be healthy and can thrive in the longer-term. In the past few years, we have started many new initiatives, and we have managed to complete some important projects – these have laid a solid foundation for steps ahead.

We have prepared this succinct report to give the public a quick and easy look at breadth and depth of actions we have been taking at the Environment

Bureau. We would not have been able to accomplish so much without the involvement of the community and stakeholders, the dedicated support of the Environmental Protection Department and other Bureaux and Departments in the HKSAR Government. In some cases, the results of policies will only be seen in the course of time. In any event, we recognize that our work in the last five years is just a staging point from which more will need to be done in the future. We must also acknowledge the work of our counterparts in Guangdong Province, who are doing a lot, and together, we are improving our shared regional environment.

I am confident that the people of Hong Kong are now willing to move ahead faster and further, as environmental protection is widely accepted in our community as a “must” action area. Certainly, our younger generation want us to pay a lot more attention to reducing pollution, saving energy, implementing better waste management and protecting biodiversity. I urge all stakeholders and the community to continuously join us in taking action.

K S Wong
Secretary for the Environment

June 2017

HONG KONG PROFILE

GENERAL

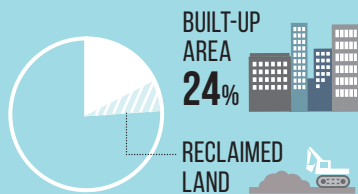


POPULATION
~7,300,000



HK\$ 2,489,109 MILLION

Built-up area takes up 24% of which 26% is reclaimed land



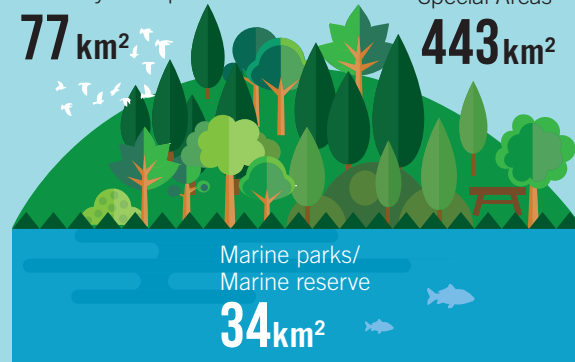
NATURAL ENVIRONMENT

Sites of Special Scientific Interests, Conservation Area or Coastal Protection Area of statutory town plans

77 km²

Country Parks & Special Areas

443 km²



85% of population within 3km environs of a country park



57
species of terrestrial mammals



540+
species of birds



198
species of freshwater fishes



236
species of butterflies

CLIMATE CHANGE

Annual Mean Sea Level Rise (1954-2015)

~+30mm
per decade

Annual Mean Temperature (1986-2015)

~+0.17°C
per decade

Annual Greenhouse Gas Emission (2014)

TOTAL 44,900,000 TONNES

6.2 TONNES
PER CAPITA

READINESS FOR CLIMATE CHANGE

Greenhouse Gas Sources (2014)

90%
Buildings

70%
Electricity

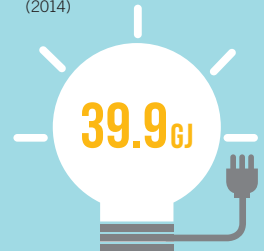
16%
Transport

Waste and others

Strengthening our climate change readiness through enhanced actions for mitigation, adaptation and resilience

OTHERS

ENERGY CONSUMPTION per capita (2014)



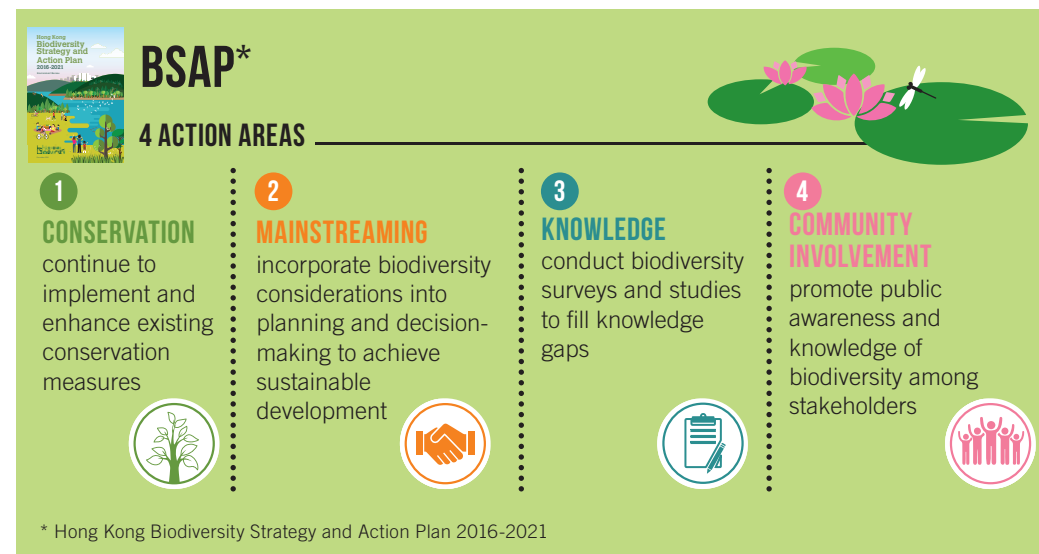
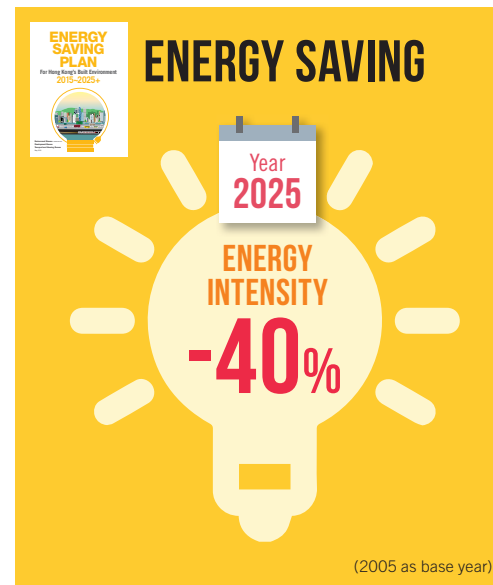
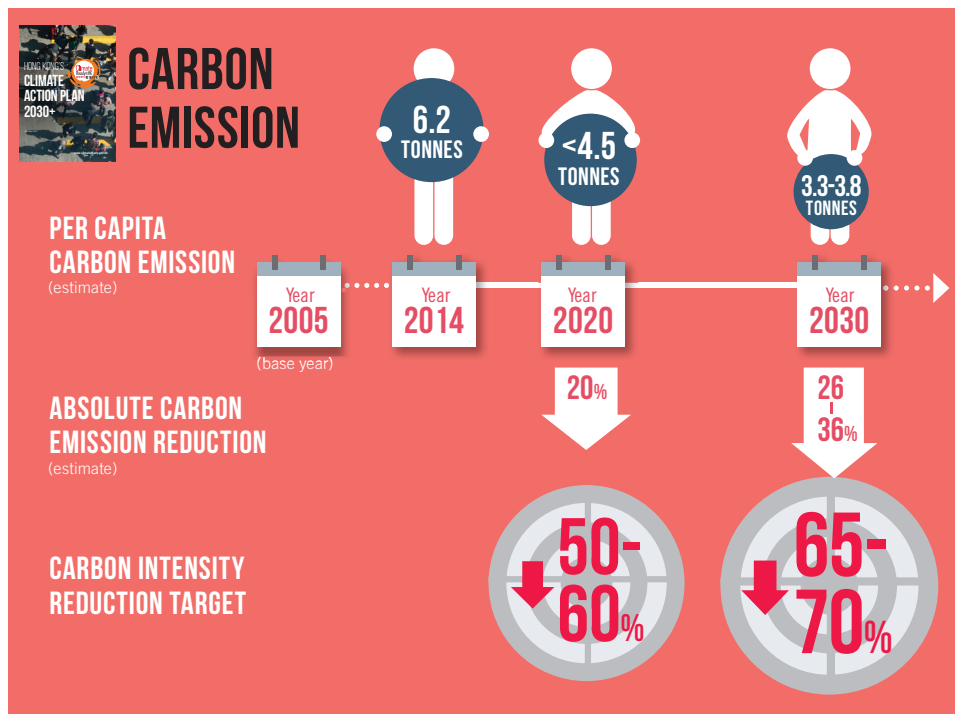
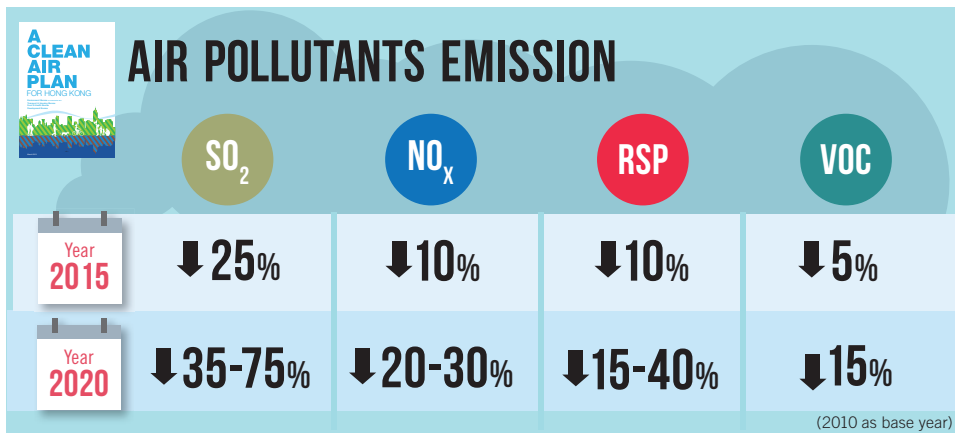
PM_{2.5} AT GENERAL STATIONS (2016)

22
µg/m³

MUNICIPAL SOLID WASTE DISPOSAL RATE per capita per day (2015)



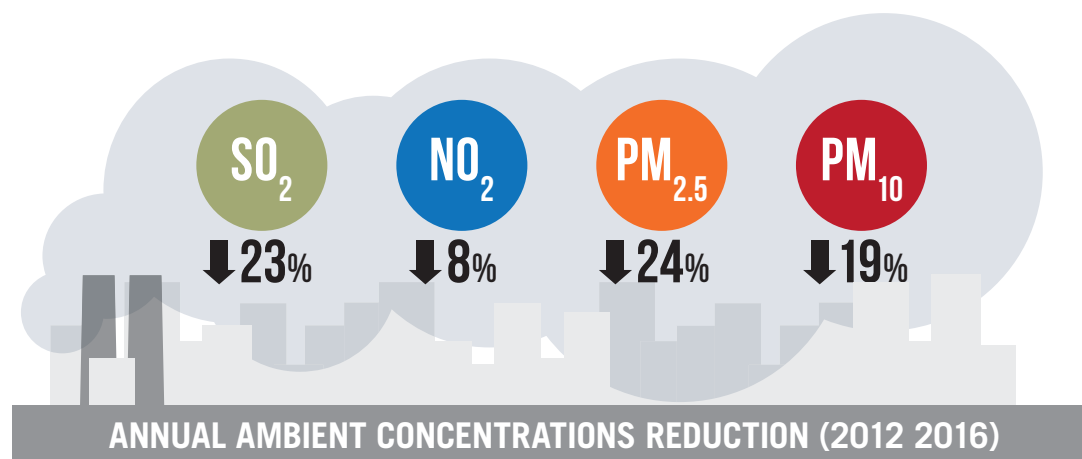
ENVIRONMENTAL GOALS



1 | CLEANER AIR



Hong Kong's air quality has been improving over time. Over the past 5 years, there has been discernible improvement as a result of our local efforts and also the air pollution control measures being instituted in Guangdong Province. Our local efforts on reducing emissions from various sources have been successful, with primary focus on improving roadside air quality and reducing marine emissions. We have met the emission reduction targets set for 2015 and we have agreed the 2020 emission reduction ranges with the Guangdong authorities. Correspondingly, there have been health benefits for the people of Hong Kong.



TARGETS WITH TIMELINE

Pollutant	Area	Emission Reduction Targets/Ranges (As compared with 2010)	
		2015	2020
SO ₂	Hong Kong	25%	35-75%
	PRDEZ*	16%	20-35%
NO _x	Hong Kong	10%	20-30%
	PRDEZ*	18%	20-40%
RSP	Hong Kong	10%	15-40%
	PRDEZ*	10%	15-25%
VOC	Hong Kong	5%	15%
	PRDEZ*	10%	15-25%

* Pearl River Delta Economic Zone

STRATEGY

Make public health the key driver for improvement;

Focus on roadside air quality as roadside emissions is a major public health threat;

Focus on shipping emissions as it has become the largest local emissions contributing source;

Mobilize stakeholders and the community through targeted campaigns;

Invest in evidence-based solutions; and

Strengthen and broaden collaboration with Guangdong Province.

MAJOR ACTIONS

1

New Air Quality Objectives from January 2014 – mandatory review for next stage started in 2016

2016



2

Expanded network of local and regional air quality monitoring stations

3

Measures to reduce roadside emissions:



- Phasing out 82,000 pre-Euro VI diesel commercial vehicles 2014-19 with 65% completed as at the end of May 2017

- Replaced catalytic converters in LPG taxis and public light buses

- Retrofitting selective catalytic reduction devices on Euro II and Euro III franchised bus to upgrade their emission performance to Euro IV or above level

4

Measures to reduce marine emissions:



- Imposed tighter marine light diesel standard from April 2014
- Mandated fuel switching at berth for ocean-going vessels from July 2015

5

Measures to reduce emissions from power plants:



- Tightened emission caps

7

Additional VOC control – to include fountain solutions and printing machine cleansing agents from January 2018



6

New control of non-road mobile machinery from June 2015

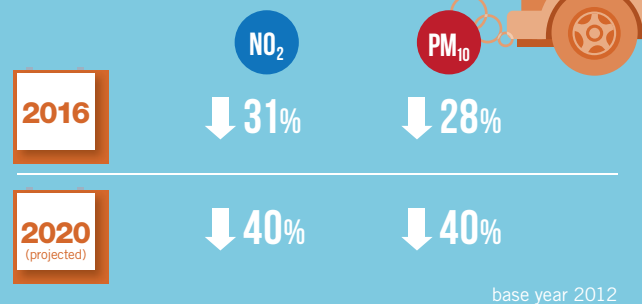


Air quality monitoring stations:



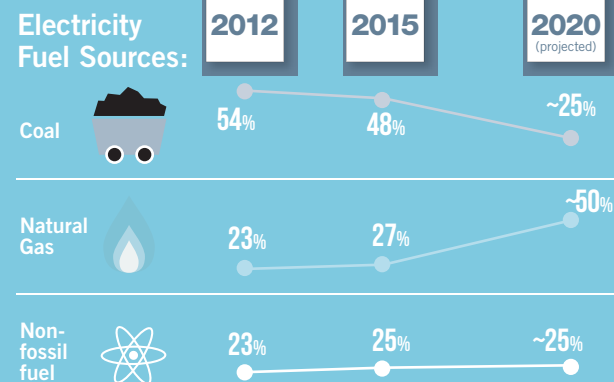
ROADSIDE

Pollution reduction:



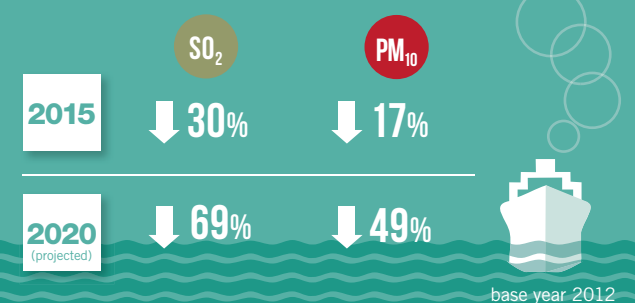
ENERGY

Electricity Fuel Sources:

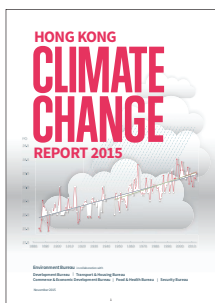


MARINE

Emission reduction:



2 | COMBATING CLIMATE CHANGE



Our climate change plan and strategy cut across many other policy areas. Phasing down of coal-fired electricity generation provides the largest carbon reduction. At the same time, we are pursuing energy saving in Hong Kong's buildings and infrastructure through partnership with public and private sector stakeholders. We will also actively promote renewable energy. Our new '4Ts'¹ strategy is Hong Kong's operational model to implement the Paris Agreement, which any organisation and individual can adopt. We are also expanding Hong Kong's rail network and making walking easier and more pleasant for our residents.

1. 4Ts stand for Target, Timeline, Transparency and Together.

Our adaptation plans are also extensive – running through land use planning, urban design and public infrastructure planning, including saving water, improving drainage and stormwater management, and improving urban landscaping that helps to lower urban heat and strengthen local biodiversity.

In order to get the entire community on board to ensure Hong Kong is climate-ready and for our residents to adopt a low-carbon lifestyle, we have a variety of public awareness initiatives, including programmes targeting students, and partnering with specific stakeholders for many activities.

TARGETS



STRATEGY

Articulate the “4Ts” strategy to mainstream the Paris Agreement in the Government and society;

Coordinate through a high-level steering body², government efforts and take action plan forward; and

Promote public awareness campaign to engage the whole of society to be ‘climate ready’ and adopt low-carbon living.

SCHEME OF CONTROL AGREEMENTS

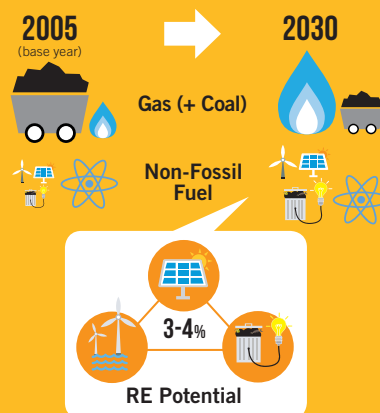
The Government signed with the two power companies the post-2018 Scheme of Control Agreements, the terms of which fully reflect the Government’s commitments to combating climate change and reducing energy intensity. They encourage appropriate investments to replace the retiring coal plants as well as further promotion of energy efficiency and conservation and RE development by the power companies.



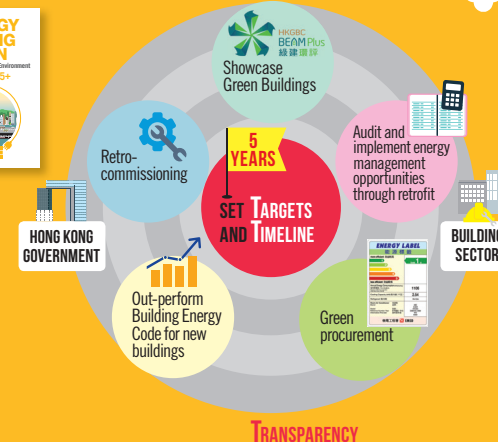
MAJOR ACTIONS

MITIGATION

SUPPLY SIDE



DEMAND SIDE



LOW CARBON TRANSPORTATION



LOW CARBON CONSUMPTION



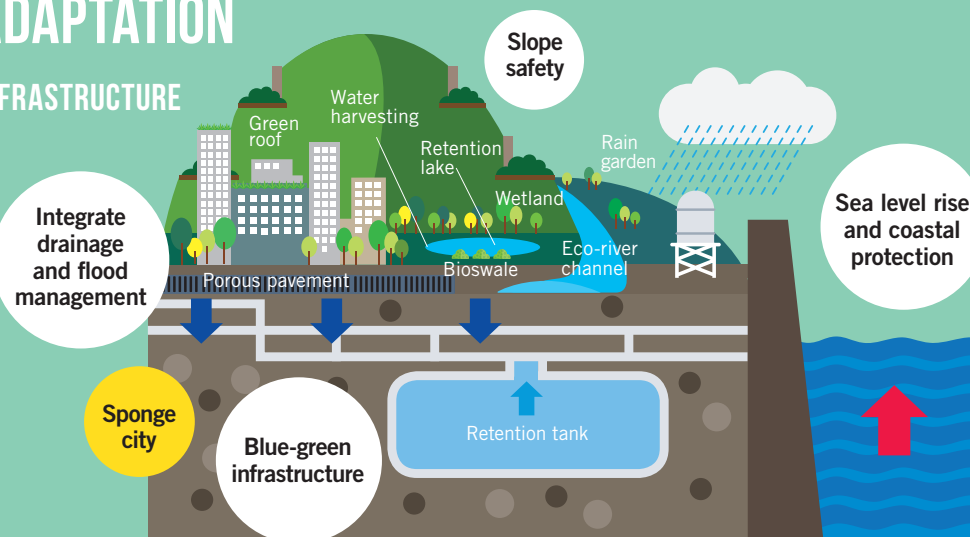
2. The Steering Committee on Climate Change led by the Chief Secretary for Administration.



MAJOR ACTIONS

ADAPTATION

INFRASTRUCTURE



CITY PLANNING

Strengthening urban fabric

- new code of practice on wind effects
- urban climatic planning
- urban regeneration

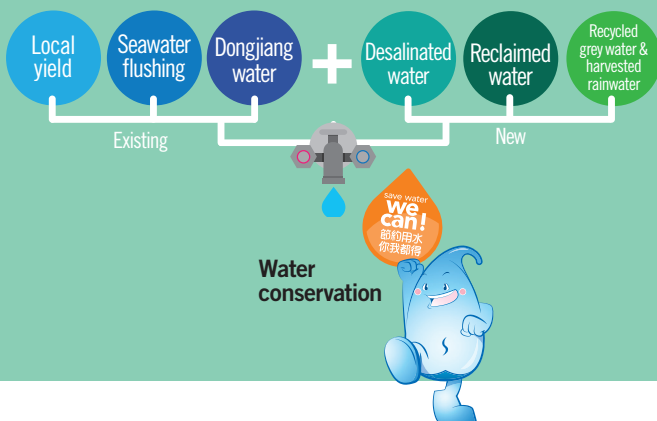


Smart city development

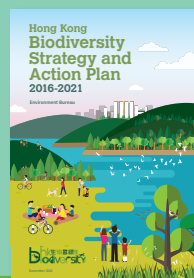


WATER SECURITY

6-pronged supply structure



CONSERVATION AND BIODIVERSITY



Implementing Biodiversity Strategy and Action Plan (BSAP)

Enhancing country parks and special areas

Promoting sustainable farming and fisheries

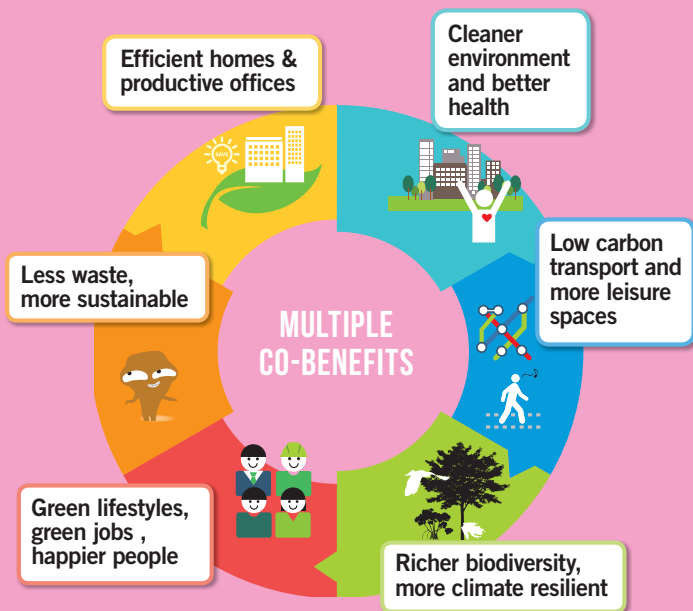
Enhancing biodiversity in urban environment





MAJOR ACTIONS

RESILIENCE



CONSUMPTION-BASED EMISSIONS



3 | ENERGY SAVING IN BUILDINGS



An enormous amount of energy is needed to power Hong Kong's high GDP, extreme density, high-rise living and sub-tropical conditions. We have set an ambitious energy saving target to be achieved by 2025. Our policy focusses on energy saving in buildings and our strategy includes a mixture of regulatory, educational, economic and social tools to build competence across building owners and the built-environment sector. To stimulate action especially in existing buildings, we are taking the lead by setting a new energy saving target for government buildings and

TARGETS

ENERGY SAVING TARGET

Hong Kong to achieve energy intensity reduction by 40% by 2025 using 2005 as the base

Be "Energy Aware" and "Energy Wise"

Year 2025

-40%

ENERGY SAVING TARGET FOR GOVERNMENT BUILDINGS

target
-6%
actual result
-7%

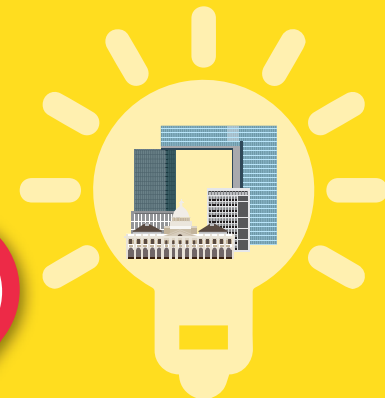
2003-07
(4 years)

target
-5%
actual result
-9.2%

2009-14
(5 years)

target
-5%

2015-20
(5 years)



to provide funds for retrofitting our buildings. We are sharing our knowledge in retro-commissioning retrofitting and energy saving management with the other public and private sector owners through the setting-up of a dialogue platform in 2016.

STRATEGY

Drive change through regulation, financial support and education.

Prioritising focus on the building sector as it is the largest energy user

Applying the “4Ts” strategy to galvanise stakeholders; and

Use government leadership to establish long-term partnership with building sector

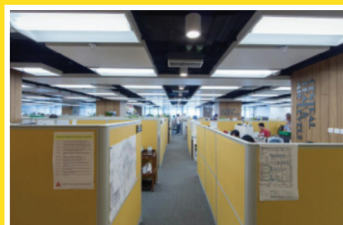
MAJOR ACTIONS

1 REGULATORY

Example: Updated regulation to tighten building codes, electrical appliances, etc.

2 ECONOMICS

Example: Provided HK\$500 million for retrofitting government buildings to save energy



Architectural Services
Department adopting BEAM Plus
Interiors & Existing Buildings

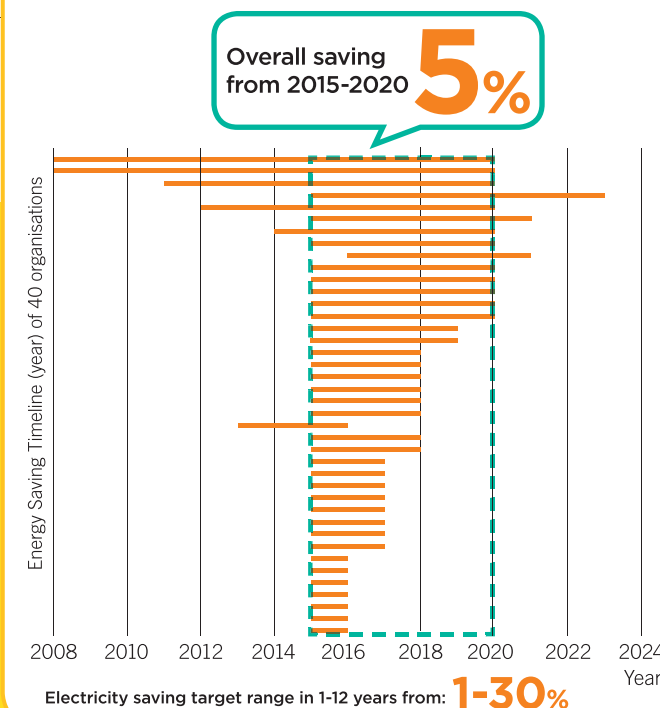
3 SOCIAL

Example: Established dialogue platform to work across the major users of energy in the public and private sectors

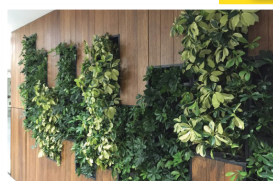
4 EDUCATION

Example: Update schools and public education programmes and encourage public sector institutions to save energy

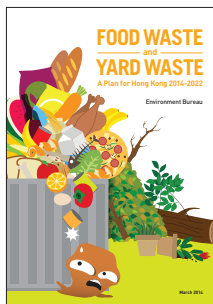
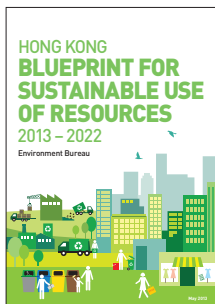
Electricity Saving Target and Timeline of 4Ts Partners



全民經神 全民節能
Be Hanson
Energy Saving for All



4 | WASTE-TO-RESOURCES TRANSFORMATION



Since 2012, we have put in place a wide range of policies, targets, subsidies and initiatives to revolutionise waste management in Hong Kong, including turning waste-to-energy (WTE) where possible. We are taking multiple concurrent actions to turnaround Hong Kong's culture involving high per capita waste generation

and to move towards greater sustainability. We have also paid special attention to food waste reduction, as this makes up around 1/3 of Hong Kong's total municipal solid waste.

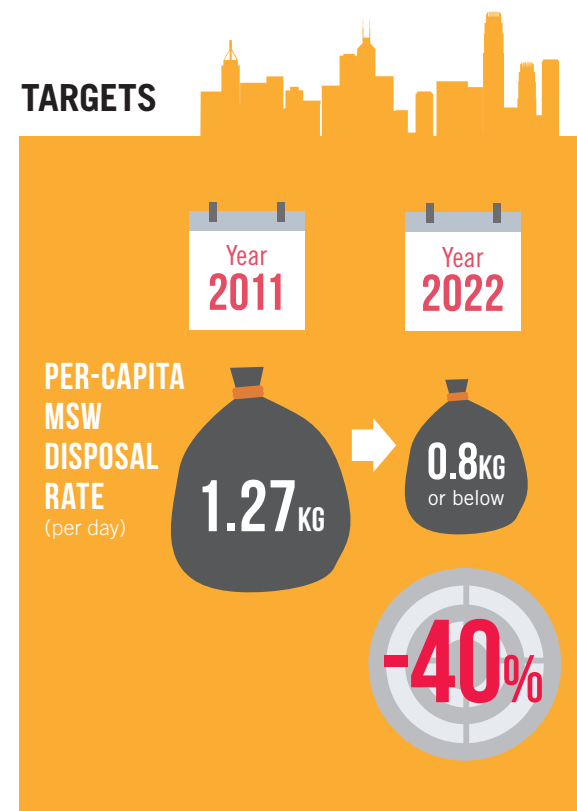
STRATEGY

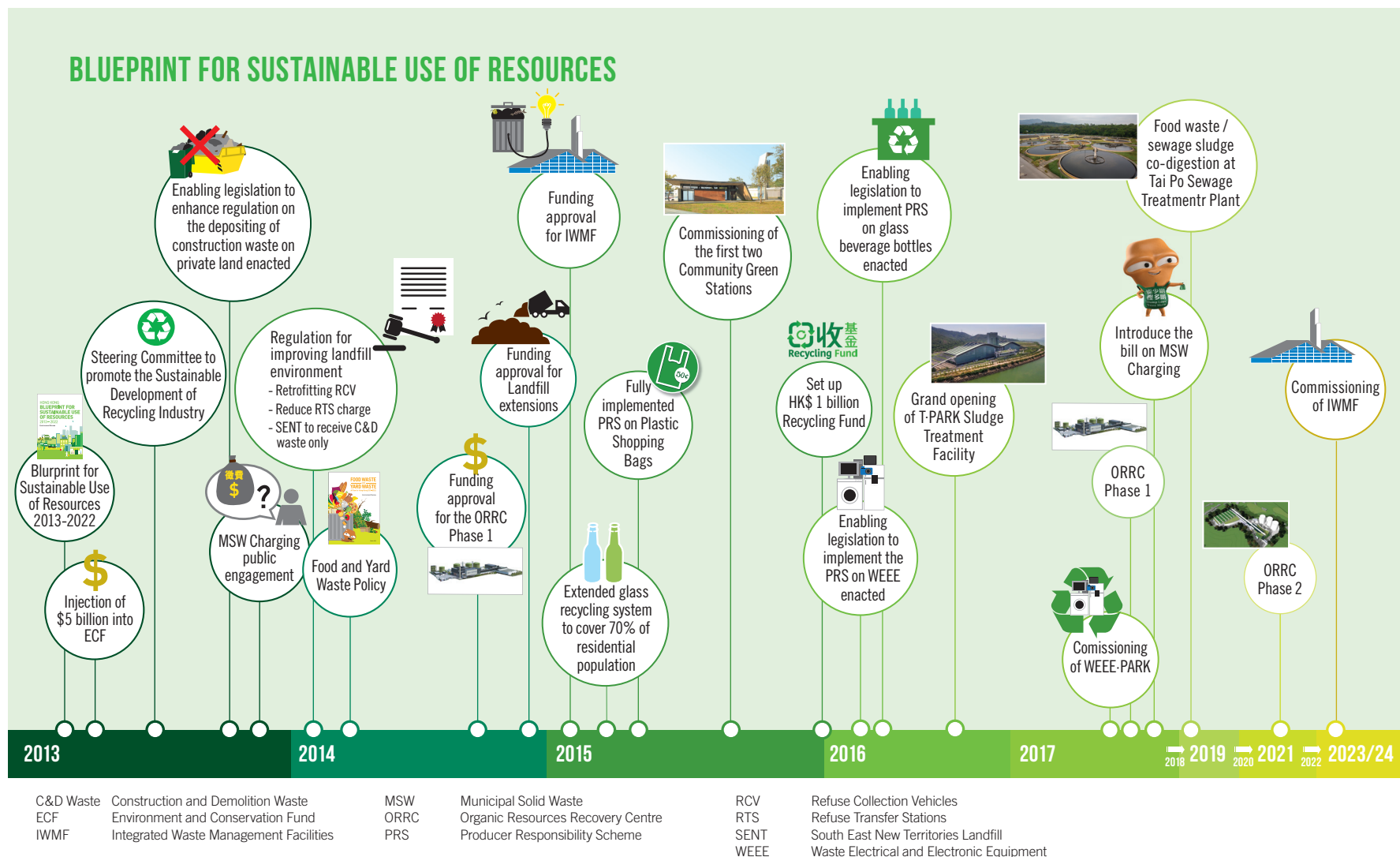
Drive behavioural change through regulation, financial support and education;

Mobilise stakeholders and community through targeted campaigns; and

Invest in waste-to-energy infrastructure.


TARGETS






MAJOR ACTIONS


1 Legislating to implement MSW charging




2 Legislated Producer Responsibility Schemes on plastic shopping bags, WEEE and glass beverage bottles





3 Created campaigns – for BYOB, FoodWise Hong Kong, glass bottles collection, clean recycling, etc.




4 Funded HK\$1 billion Recycling Fund to upgrade recycling industry




5 Invested in WTE plants for sewage sludge, food waste and MSW; landfill extensions and Community Green Stations.

6 Trialing WTE co-digestion for food waste and sewage to produce biogas



7 Increased construction waste disposal charge in April 2017; and legislating on mandating Global Positioning System on construction waste collection vehicles to facilitate enforcement action against fly-tipping





惜食香港
Food Wise Hong Kong

Food Wise Campaign and Charter was launched 2013 to encourage and engage local organisations and companies to pledge for food waste reduction through reduction at source and surplus food donation.

640
charter
signatories

meal portioning with
800
FoodWise Eateries



Year 2016



T·PARK



Biogas and Co-digestion at Tai Po Sewage Treatment Plant



Eastern CGS



Sha Tin CGS

COMMUNITY GREEN STATIONS (CGS)

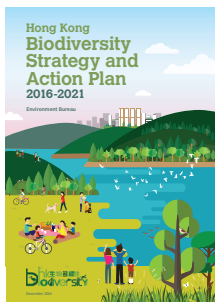


Kwun Tong CGS



Yuen Long CGS

5 | MORE COMPREHENSIVE NATURE CONSERVATION



Despite Hong Kong's small size, the interplay of climatic condition, geographical location and geology endows us with a myriad of terrestrial and marine habitats, which in turn are homes to a wealth of native flora and fauna. Some of these habitats and species are representative or particularly valuable. The juxtaposition of our mountains and waters also creates exceptional landscapes of great attraction for outdoor recreation. While much of our land (40%) is already protected by law, we believe more can be done and done better. Between 2012 to 2017, we have designated

TARGET



five marine parks and one marine reserve and are making preparatory work to designate more marine parks in protecting our marine reserves. By adopting the UN Convention on Biological Diversity as our guide and taking into account people's aspirations, we have put in place a more comprehensive city-level plan for the next five years to better protect our biodiversity.

STRATEGY

Continue to enhance conservation measures

Mainstream biodiversity in government and society

Fill knowledge gaps through research

Promote biodiversity awareness

Partner with stakeholders in research, business and community

MAJOR ACTIONS

1 Launched Hong Kong's first BSAP consisting of a comprehensive plan of 67 actions in 2016, and earmarked HK\$150 million for three years to kick-start the implementation of these actions

2 Expanding country parks and marine parks



3 Initiating new conservation measures in areas with high conservation value – Sai Wan, Long Valley Nature Park, Sha Lo Tung, Lantau and remote villages like Lai Chi Wo, etc.



4 Banning domestic trade for ivory by end-2021 and increasing penalties for wildlife crimes

5 Planning to establish preparatory committee with a view to setting up a conservation fund

6 Collaborating with non-government stakeholders in annual Biodiversity Festival



7 Issued government dining guidelines to discourage consumption of endangered species





Sai Wan



High Island Geo Trail – East Dam



Long Valley



Sha Lo Tung



Lai Chi Wo

6 | ENABLING “WATER-FRIENDLY CULTURE”

Hong Kong has 1,700 km² of water and is a thriving port. We rely on the sea for navigation, recreation, seafood production, and supply of flushing and cooling water. The sea surrounding us is also the home of diverse forms of marine life. Improving harbour and coastal waters is an on-going task for the government. With the completion of stage 2A of the Harbour Area Treatment Scheme (HATS 2A) in 2015, there has been significant improvement in water quality at Victoria Harbour and we have seen a return of marine life. It is also enabling more water sports and recreation to be carried out there. Moreover, with the development of new harbour-front promenades, we are studying how to effectively deal with odour nuisance caused by the indiscriminate discharge of urban residual pollutants

into harbour waters. We also monitor water quality at our beaches; and we have increased our efforts to deal with marine litter. Our goal is to improve our marine

waters to enable Hong Kong to enjoy a ‘water-friendly culture’ where people can easily reach the waterfront, as well as to enjoy in-and-on-water activities.



