An aerial photograph of the Hong Kong harborfront. On the left, the tall, glass-clad International Finance Centre (IFC) towers. In the foreground, a colorful fairground with a Ferris wheel and various stalls is visible. The harbor is filled with water, and several boats are seen. In the background, the dense urban skyline of Hong Kong is visible under a blue sky with scattered white clouds.

Environmental Challenges and Harbourfront Development

CW TSE
Under Secretary for the Environment
24 January 2019

Our Natural Heritage

- Some 40 % of land area designated as country parks and special areas for nature conservation, outdoor recreation and nature education
- 24 country parks and 22 special areas; 4 marine parks and 1 marine reserve



Our Natural Heritage

- The Global Geoparks Network (GGN), assisted by the UNESCO, announced acceptance of Hong Kong Global Geopark of China in September 2011
- Sai Kung Volcanic Rock Region: spectacular world class hexagonal volcanic rock columns



Biodiversity Strategy and Action Plan

Biodiversity Strategy and Action Plan (BSAP) for Hong Kong

Public Consultation Document
January 2016



hk 生物多样性
biodiversity



AREA 1

Conservation

continue to implement and enhance existing conservation measures



AREA 2

Mainstreaming

incorporate biodiversity considerations into planning and decision-making to achieve sustainable development



AREA 3

Knowledge

conduct biodiversity surveys and studies to fill knowledge gaps



AREA 4

Community Involvement

promote public awareness and knowledge of biodiversity among stakeholders and the public



The Air Quality Challenge



CLEAN AIR PLAN

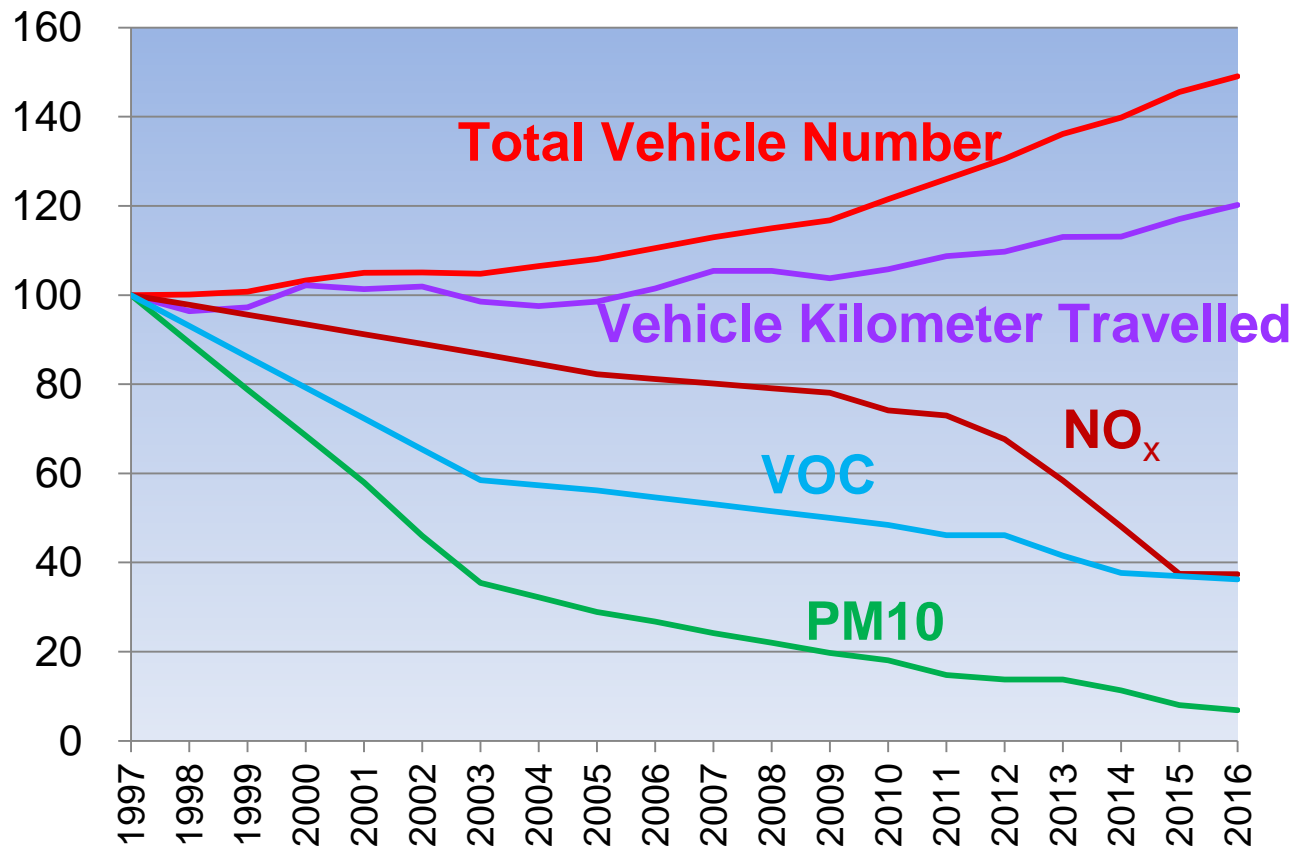
FOR HONG KONG

2013-2017 PROGRESS REPORT



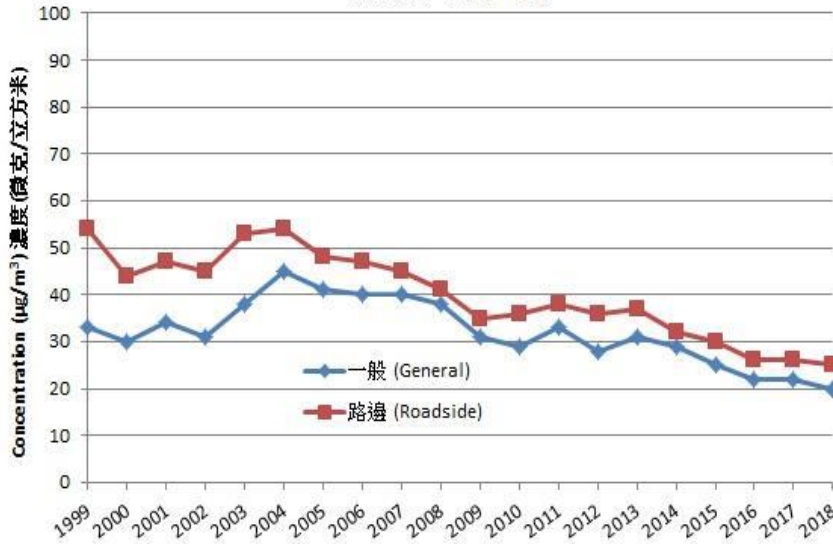
Environment Bureau | June 2017

Vehicle Number VS Vehicular Emissions

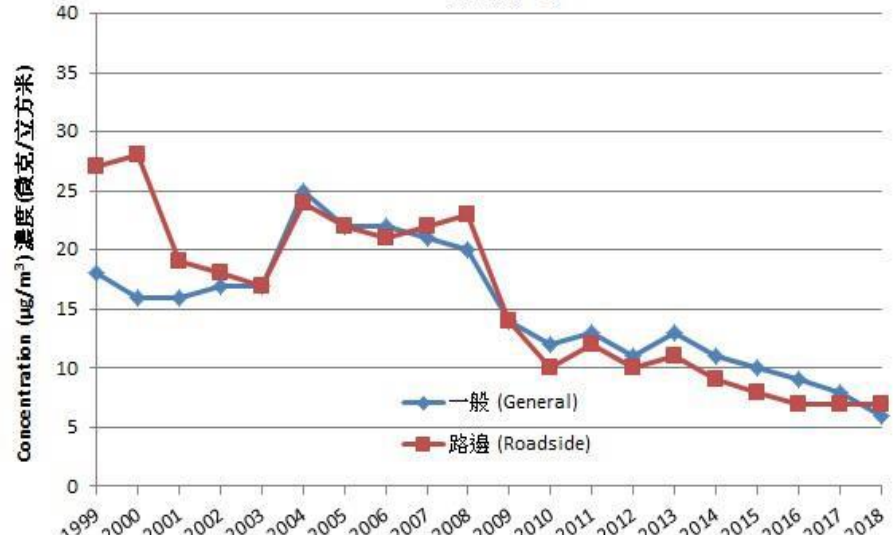


Air Quality Trend

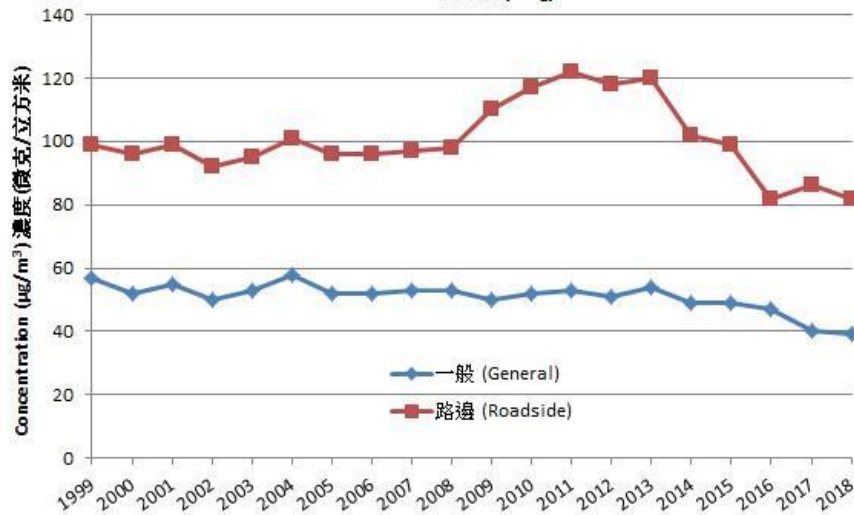
微細懸浮粒子 (PM_{2.5})



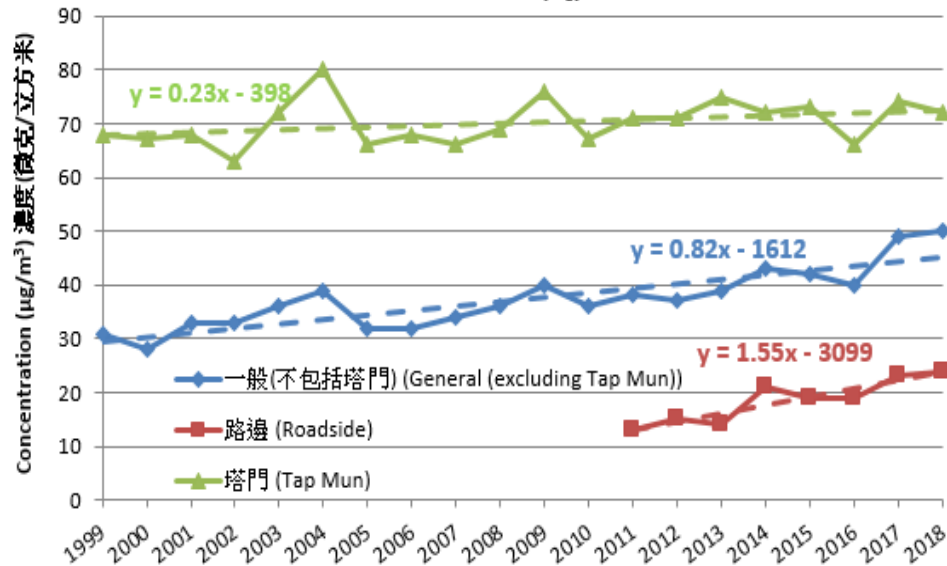
二氧化硫(SO₂)



二氧化氮(NO₂)

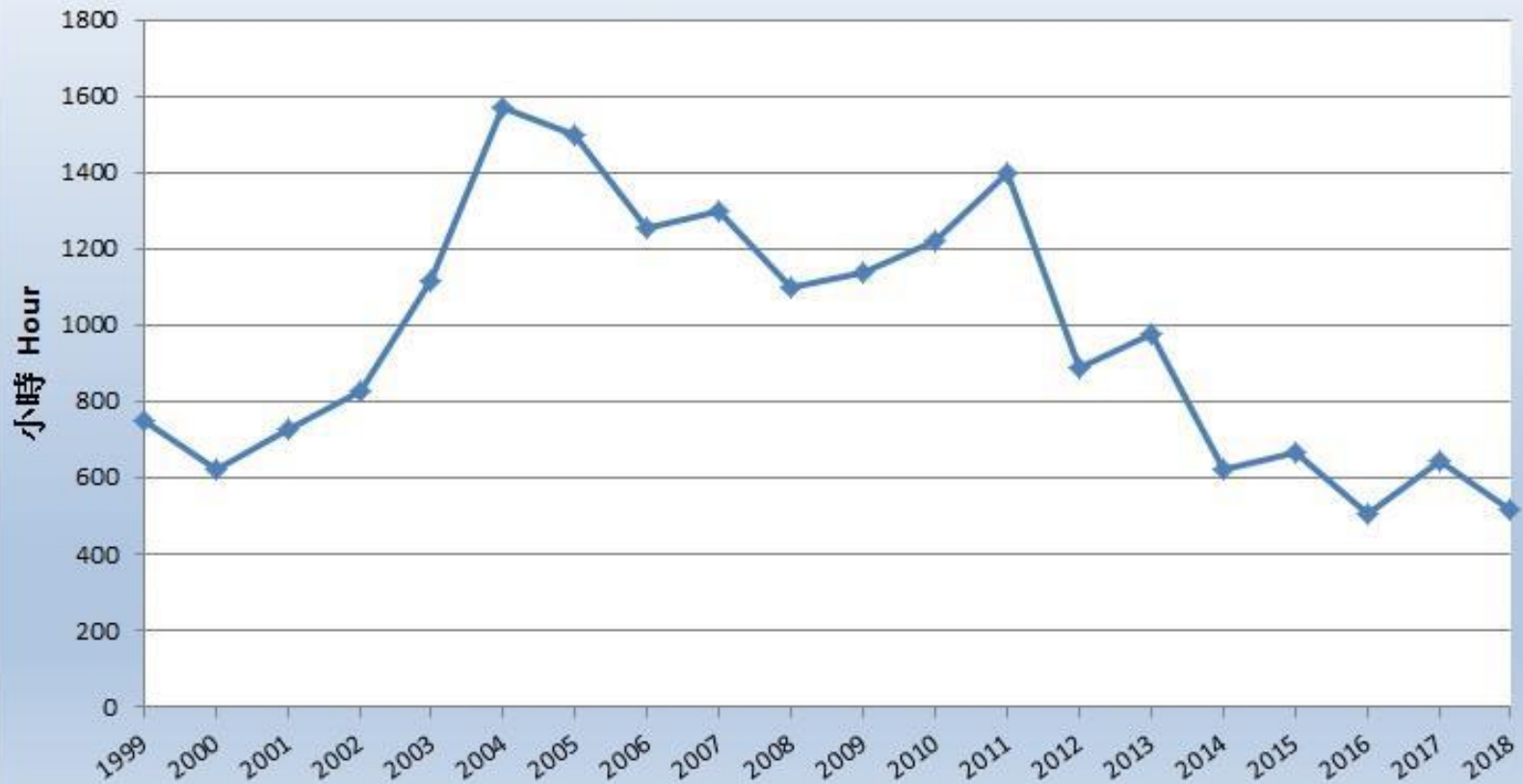


臭氧(O₃)

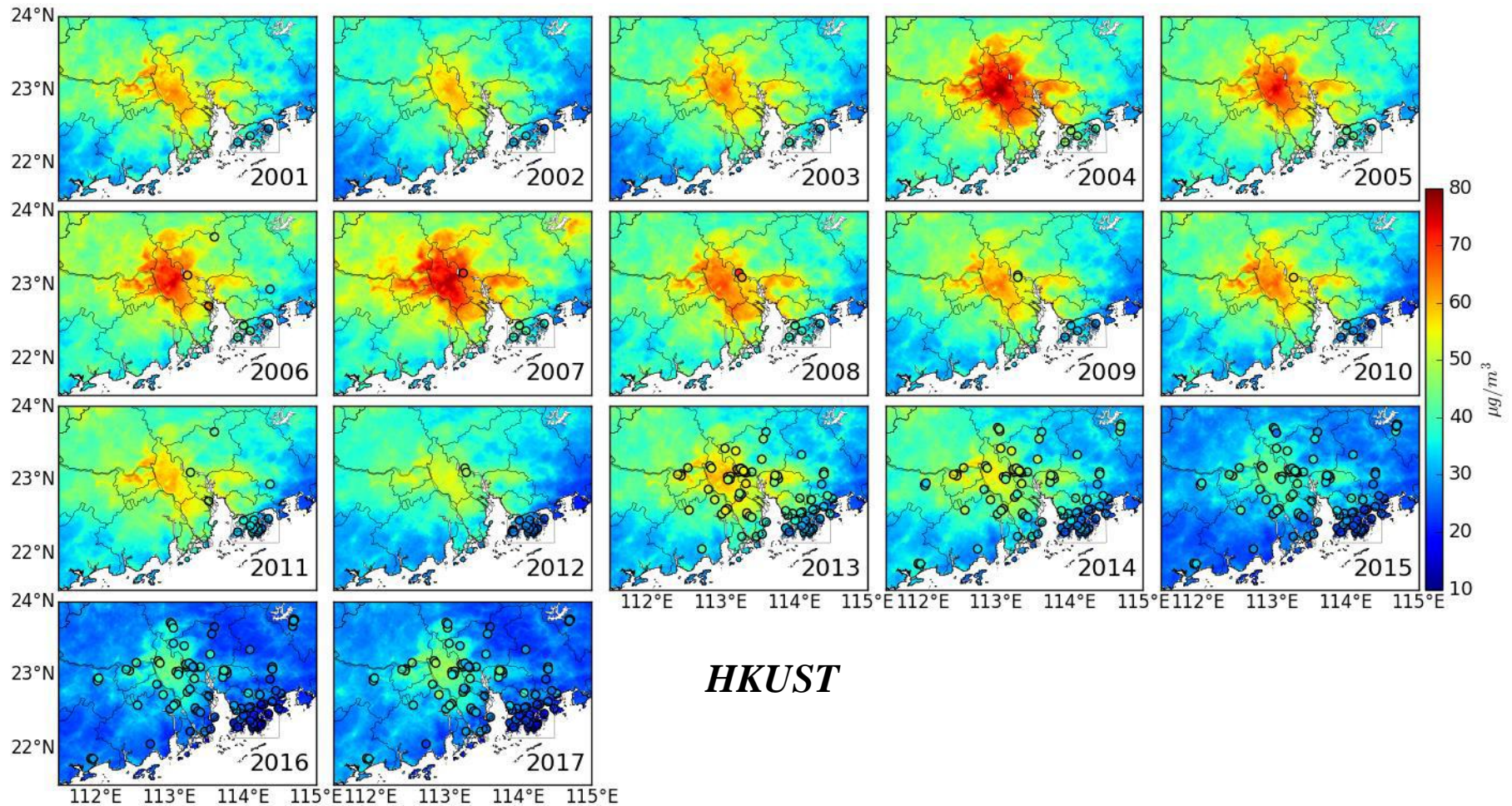


Visibility Improved

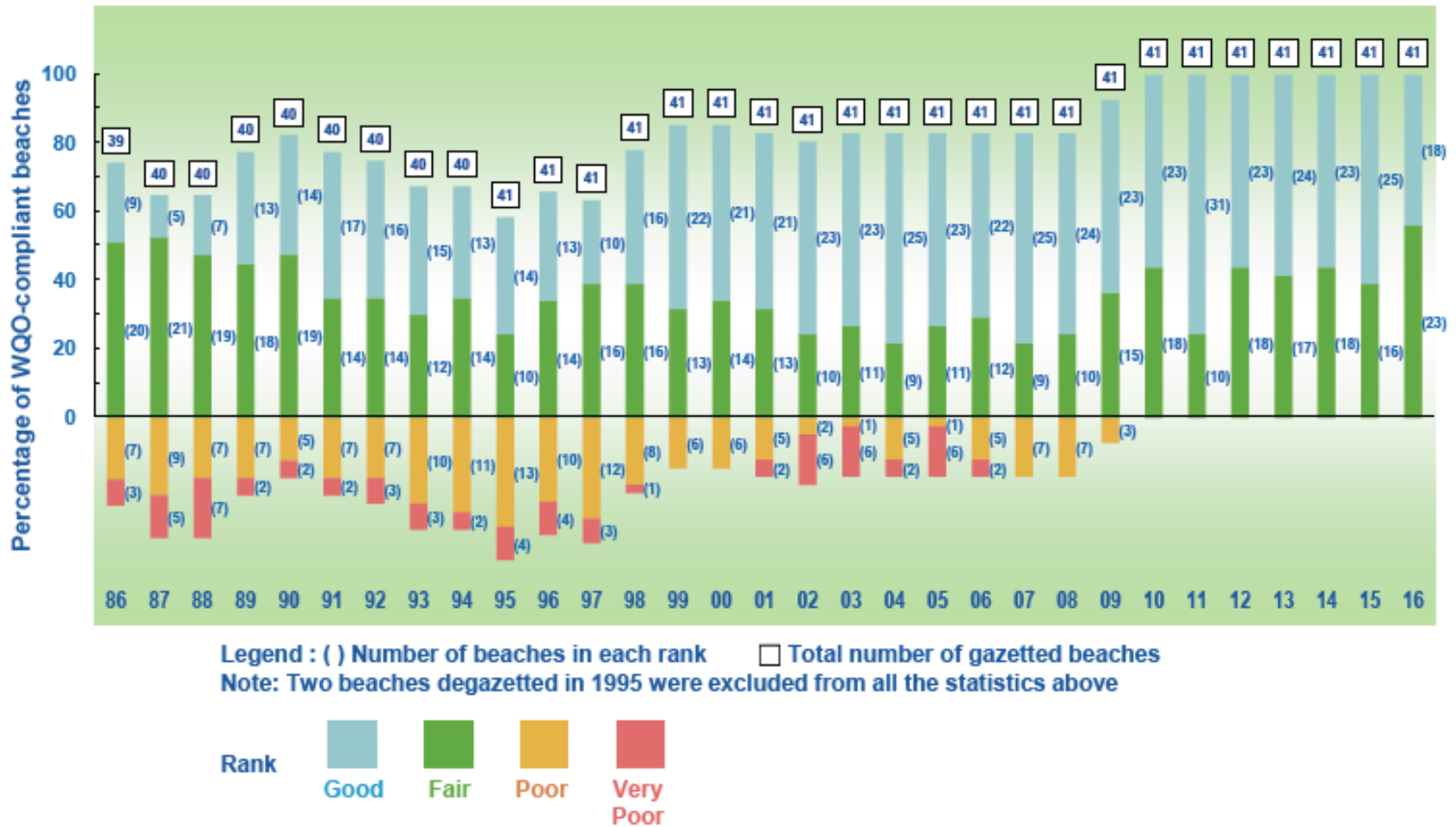
香港天文台錄得的低能見度時數 (1999 - 2018)
Number of hours of Reduced Visibility observed at the
Hong Kong Observatory (1999 - 2018)



Satellite-derived PM2.5 Concentrations



Water Quality of Beaches



Before – 23% of all beaches rated ‘good’; 74% compliance with Water Quality Objectives

Now – 44% rated ‘good’; 100% compliance

The Victoria Harbour

Harbour Area Treatment Scheme

- Collect and treat all wastewater from both sides of the harbour
- A consultancy study is being conducted to further enhance the quality of coastal waters of Victoria Harbour.



Cross harbour swim resumed October 2011

Back to central harbour in 2017.



Plastics and Marine Refuse



Photo: 賴振邦 Facebook.

Cleaning up is not the Answer

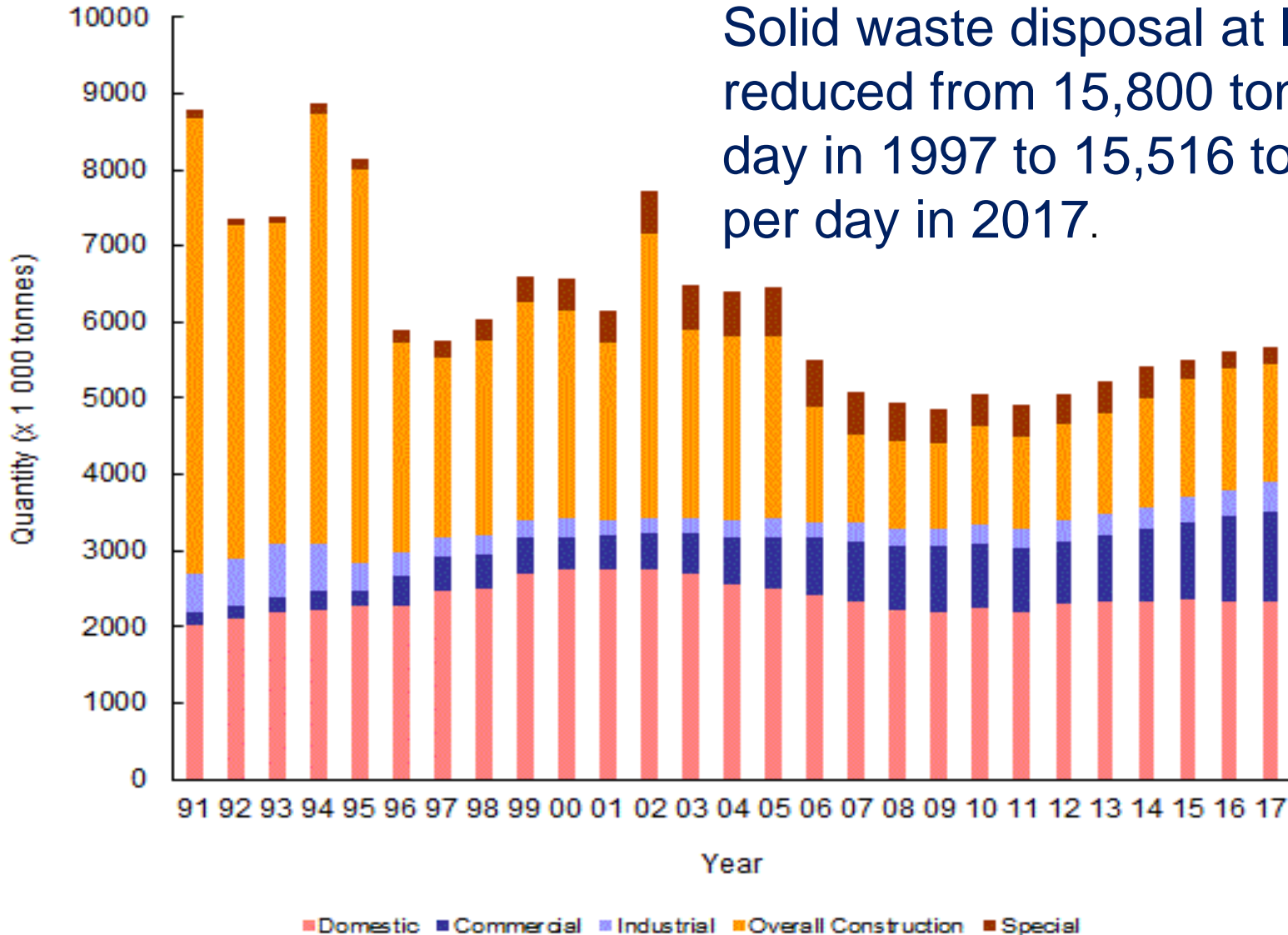


保持海港清潔
Keep Our Harbour Clean
Report Marine Littering
舉報海上亂拋垃圾

香港特別行政區
海事處
Marine Department
HKSAR

Waste

Solid waste disposal at landfills reduced from 15,800 tonnes per day in 1997 to 15,516 tonnes per day in 2017.



Where We Stand ...

Limited land but sizeable waste burden

In 2017
~15,516 tpd
of solid
waste
disposed of
at landfills

Municipal Solid Waste

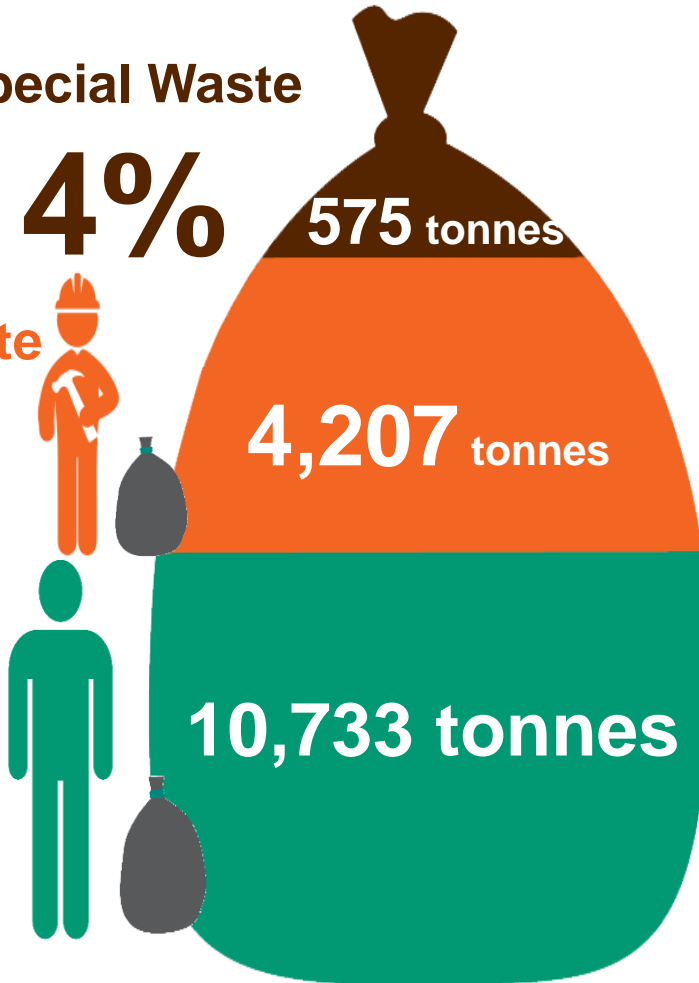
69%

Construction Waste

27%

Special Waste

4%



Waste Management Strategy

- **Hong Kong: Blueprint for Sustainable Use of Resources 2013-2022**
 - Drive behavioural change through policies and legislation
 - Mobilize the community through targeted campaigns
 - Invest in infrastructure



Key Actions



Policies & Legislation

- MSW Charging
- Producer Responsibility Schemes (PRS)



Social Mobilisation

- Waste Reduction (e.g. food waste)
- Use Less Waste Less, Dump Less Save More
- Community Green Stations



Infrastructures

- T · PARK
- WEEE · PARK
- O · PARK
- Waste-to-Energy MSW Treatment
- Landfill Extensions

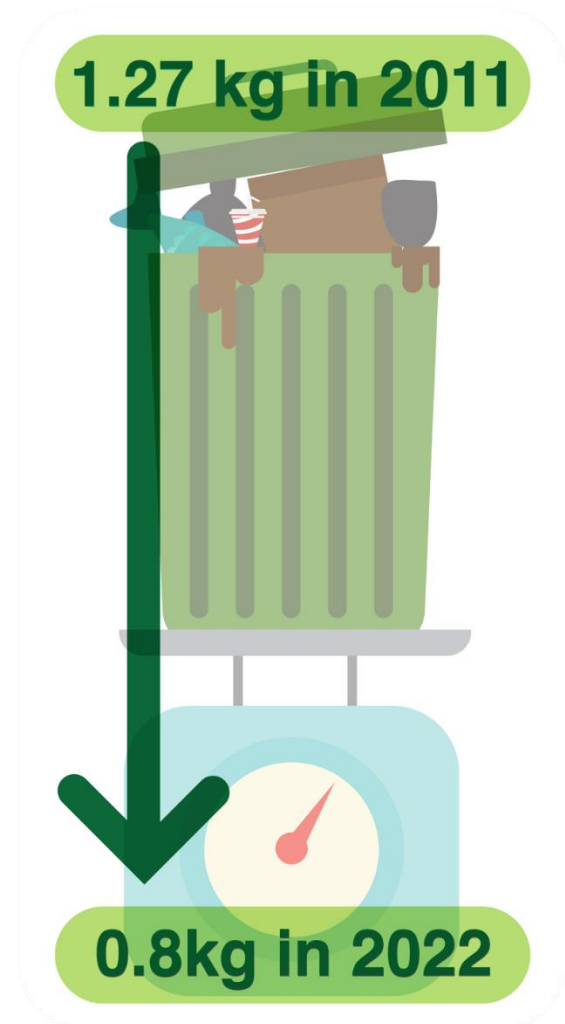
Source Separation of Waste

Separate collection of recyclables
e.g. waste paper, metals, plastics,
clothes, glass, rechargeable
batteries, fluorescent lamps, etc.



Objective of MSW Charging

- A major waste reduction initiative under the “Hong Kong: Blueprint for Sustainable use of Resources 2013-2022”
- To create financial incentive to drive behavioral changes in waste generation and hence reducing the overall waste disposal

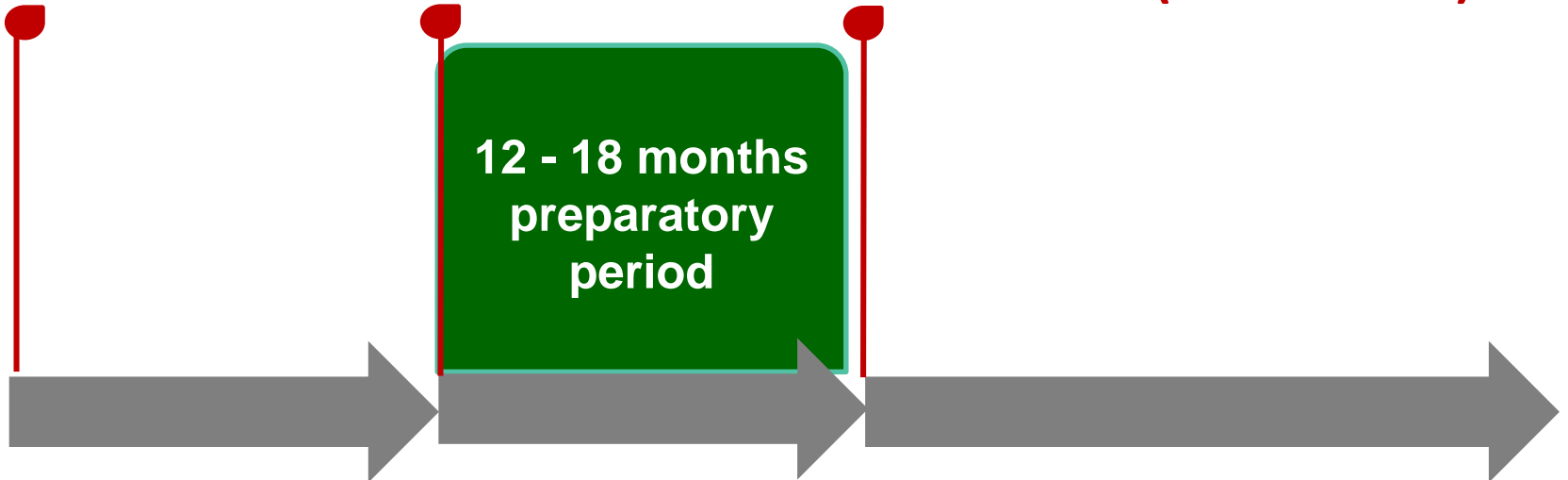


Timetable

Introduce
the Bill into
Legislative
Council
2018

Legislative
proposal
endorsed by
Legislative
Council

Implementation of
MSW charging
End of 2019 (the earliest)



The Climate Change Challenge



Nations Unies

Conférence sur les Changements Climatiques 2015

COP21/CMP11

Paris France





PARIS2015
UN CLIMATE CHANGE CONFERENCE
COP21·CMP11

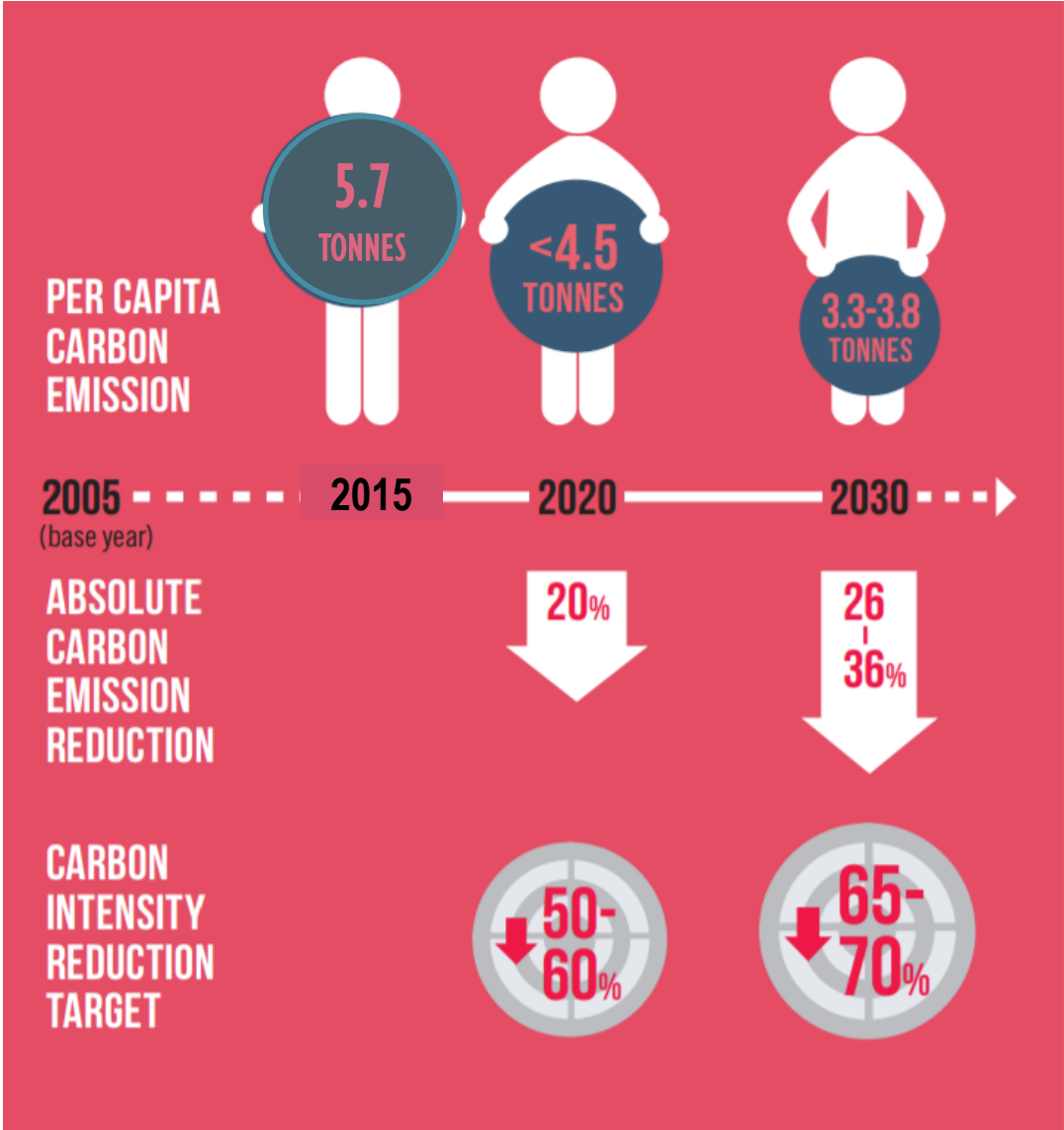


Hong Kong's Climate Action Plan 2030+

- ❖ Released on 20 January 2017
- ❖ Set out key measures on mitigation, adaptation and resilience to combat climate change
- ❖ Steering Committee on Climate Change
- ❖ Climate Change WG on Infrastructure

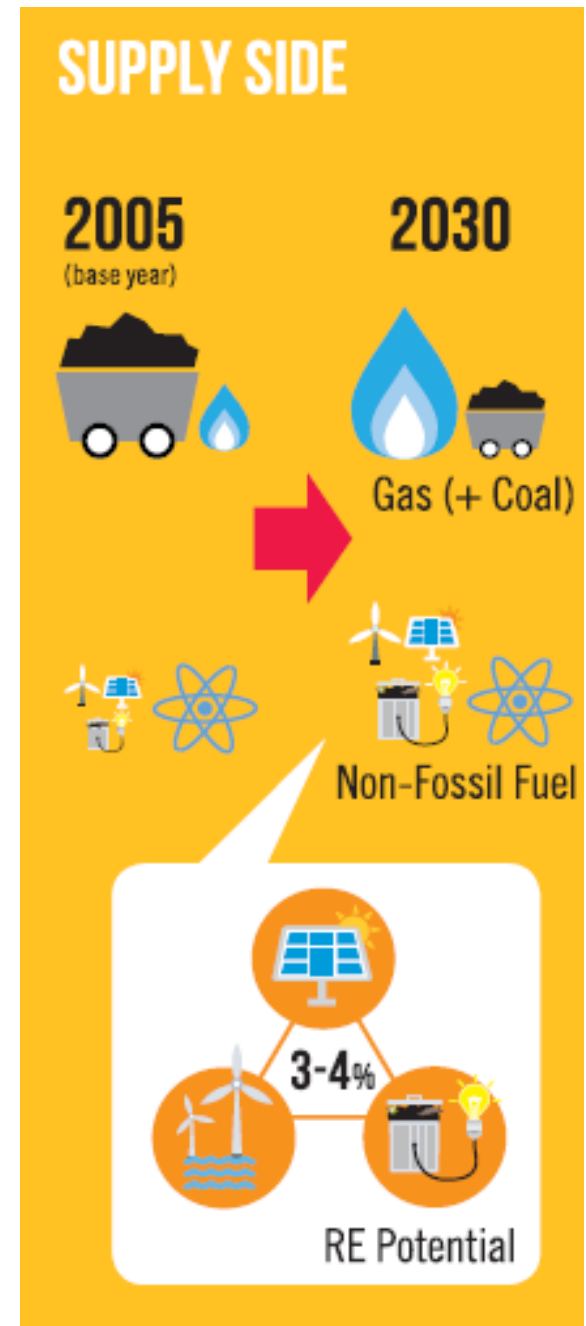


Our Target



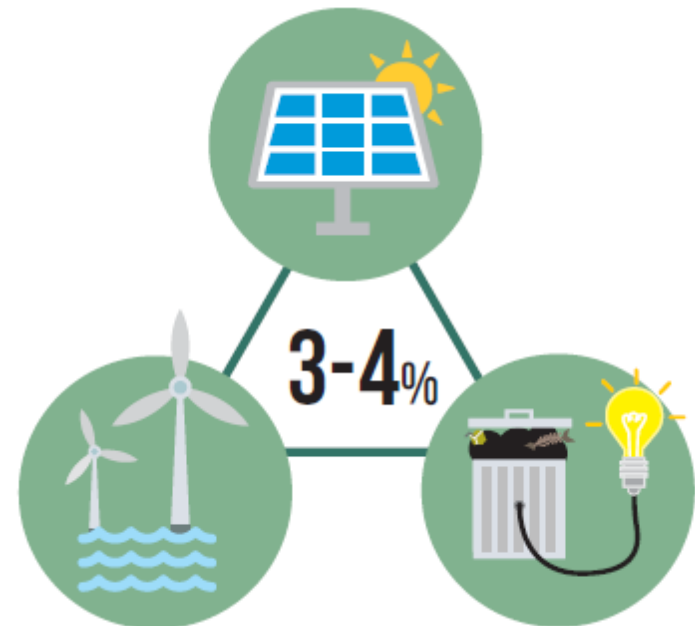
Fuel Mix

- Electricity generation accounts for about 70% of Hong Kong's carbon emission
- To achieve the new carbon intensity reduction target by
 - phasing down coal-fired electricity generation in the coming decade
 - replacing them with natural gas and non-fossil fuel sources






Renewable Energy

- ❖ The Paris Agreement highlighted the need for wider promotion of renewable energy (RE)
- ❖ Hong Kong has about 3-4% of realisable RE potentials arising from wind, solar and waste-to-energy that can be exploited between now and 2030



Feed-in Tariff

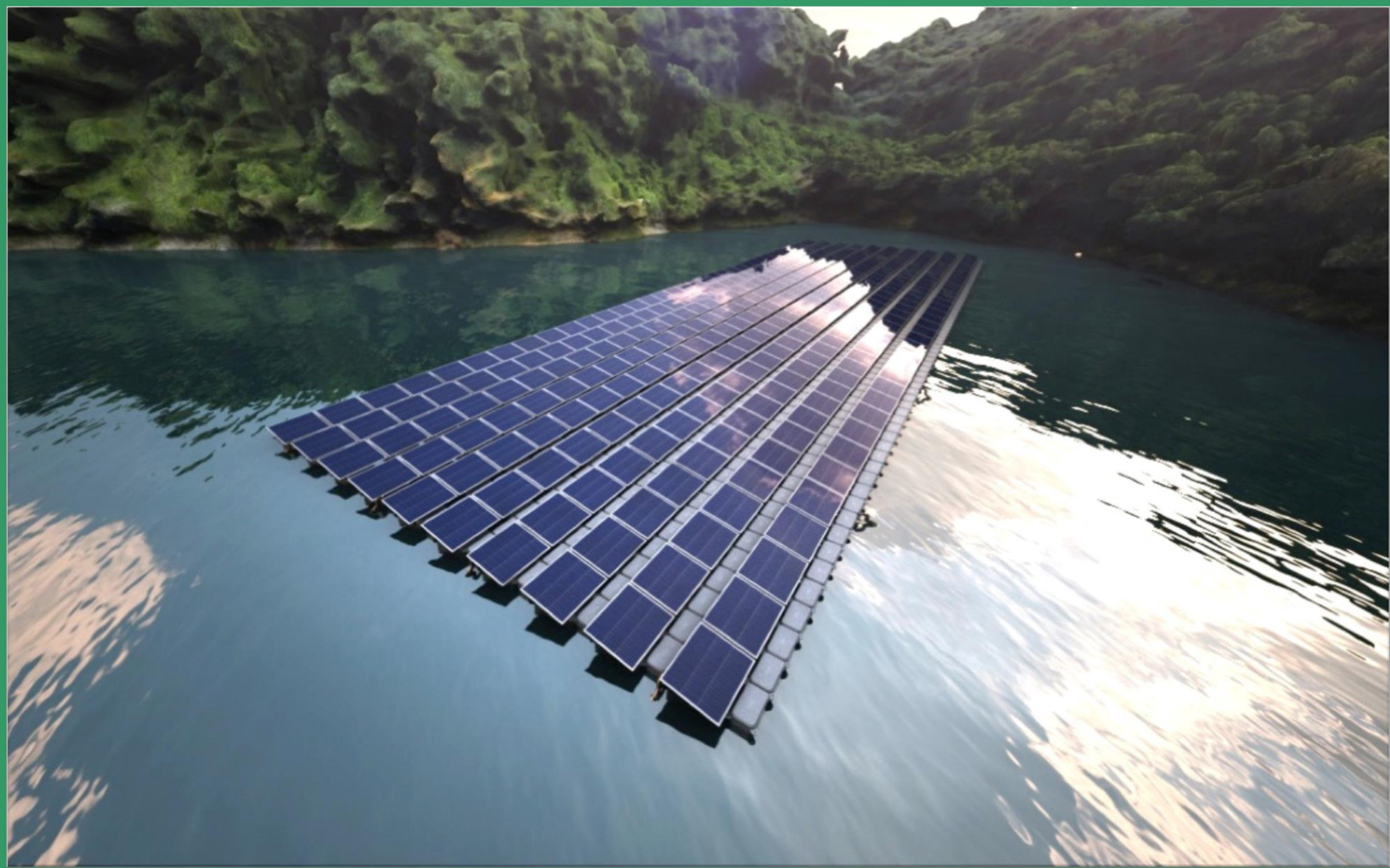
System Location	Installed Capacity and Estimated Generation	Applicable FiT Rate and Estimated Annual FiT Payment
 <p>Stilt houses at Tai O</p>	<p>6kW (about 60 panels) (about 100 m²) (at 3 stilt houses) 6,300kWh</p>	<p>HK\$5/kWh ~HK\$30,000</p>
 <p>Airport Police Station</p>	<p>16kW (about 100 panels) (about 200 m²) 16,800kWh</p>	<p>HK\$4/kWh ~HK\$67,000</p>
 <p>EMSD Headquarters</p>	<p>350kW (about 2,300 panels) (about 3,000 m²) 330,000kWh</p>	<p>HK\$3/kWh ~HK\$1,000,000</p>

New Ideas



New Ideas





**Organic Waste
Treatment
Facilities**



**T • Park Sludge
Treatment Plant**



**Integrated Waste
Management
Facility**



**Landfill Gas
Utilization**

Can Harbourfront Development Help?



Harbourfront Development

Help promote new energy transport?

- **Dedicate charging stations?**
- **Clean vehicle zones?**

Help Waste Reduction?

- **No single use plastics in shops and restaurants?**
- **Can refuse be prevented from entering the sea?**
- **Facilitate waste reduction and separation?**
- **More drinking water dispensers?**
- **Use more renewable and recyclable materials?**



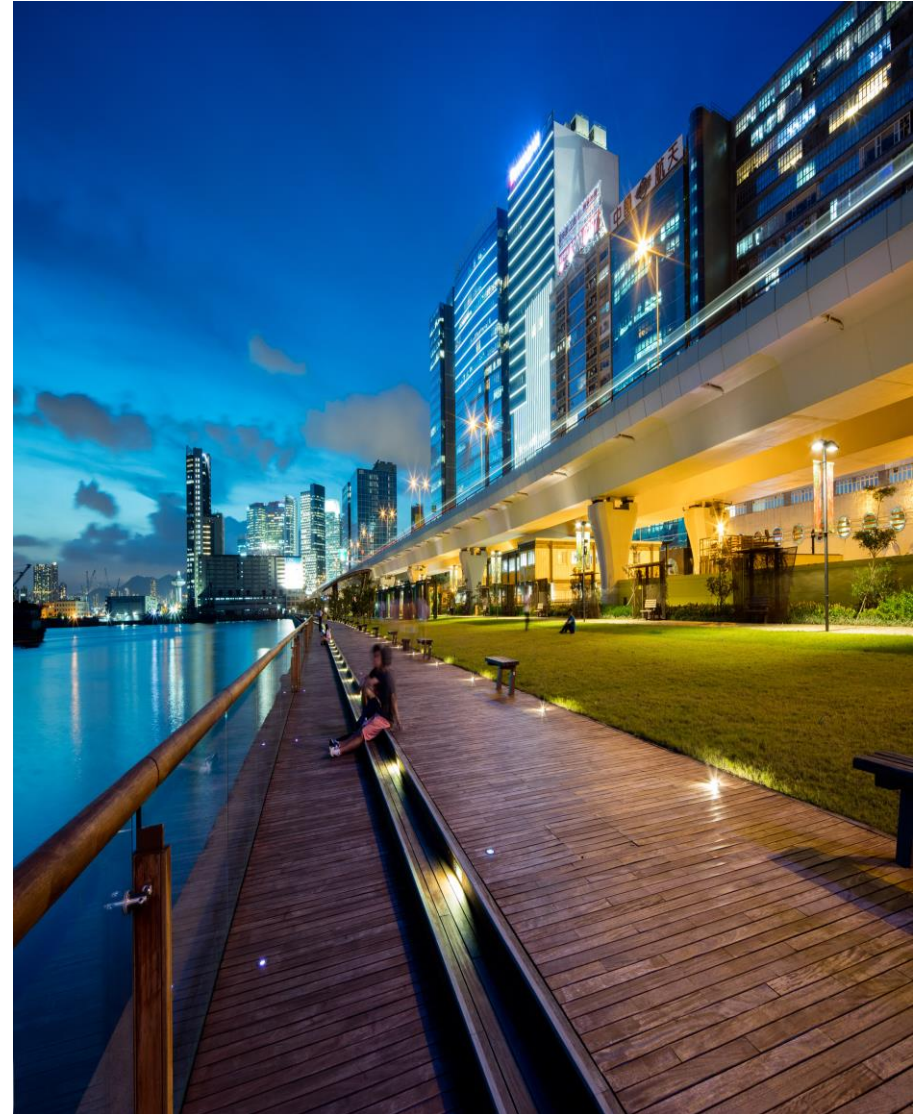
Harbourfront Development

Lower carbon and more energy Efficient?

- More PV panels and wind energy?
- Optimise climatic effects from sun and wind in design?
- Low carbon construction - carbon footprint evaluation?
- Low carbon operation through smart technologies and sensors?

Design cater for climate change?

- Structural requirement?
- Design to be resilient?
- What about vegetation?



An aerial photograph of a city, likely Hong Kong, showing a dense urban area with numerous high-rise apartment buildings. In the foreground, a large, lush green park with a winding river or stream flows through it. The city is situated on a hillside overlooking the sea, with a large island visible in the distance. The text "Thank You" is overlaid in the center of the image.

Thank You