

# MARKET REPORT

## WASTE MANAGEMENT

Hong Kong  
Sep 2021



Ministry of Foreign Affairs  
and International Cooperation

**ITCA**   
ITALIAN TRADE AGENCY

*02 BACKGROUND ON WASTE IN HONG KONG*

*05 COUNTRY COMPARISON*

*06 PAST POLICIES*

*07 OBSTACLES*

*08 TARGETS*

*09 WASTE BLUEPRINT FOR HONG KONG 2035*

*12 FOOD WASTE*

*13 PLASTIC WASTE*

*16 OVERALL CONSTRUCTION WASTE*

*18 SPECIAL WASTE*

*21 COMPARISON ON THE LATEST DATA*

*22 USEFUL LINKS*



# BACKGROUND ON WASTE IN HONG KONG



Hong Kong is situated on the southern coast of China and its territory consists of Hong Kong Island, Kowloon Peninsula and the New Territories, including more than 250 outlying islands.

- The total area size is about 1,100 sq km.
- Population size: ~ 7.5 million
- One of the most densely populated places in the world with land population density of about 6,400 persons per square kilometre.

In Hong Kong, Solid waste comprises of:

- 1. municipal solid waste (MSW),
- 2. overall construction waste,
- 3. special waste.



In 2019, the total quantity of solid waste disposed of at the strategic landfills was 5.71 million tonnes. The average daily quantity was **15,637 tonnes per day** (tpd)

- Of the 11,057 tonnes of MSW landfilled each day in 2019, some **3,353 tonnes (30% of MSW) were food waste.**
- The second largest constituent of MSW was **waste paper.** Some **2,704 tonnes per day** (24% of MSW) were disposed of at landfills in 2019
- The third largest constituent of MSW was **waste plastics,** with a daily disposal quantity of **2,320 tonnes per day** (21% of MSW) in 2019

There is limited land resource in Hong Kong. Landfills, which is an essential element of any sustainable waste management chain, need notable land resource on the other hand.

Hong Kong's capacity to consume raw or recycled materials in local production is relatively limited under its economic structure, compared to countries that rely heavily on primary or secondary industries to sustain and promote their economies.

As a result, **about 90% of MSW recyclables locally recovered are exported for recycling outside Hong Kong.**

Hong Kong is navigating towards **Waste-to-energy**, which is the process by which the energy content of wastes is converted into heat or electricity using various types of technologies.

- Landfill gas utilization
- Anaerobic digestion
- Thermal treatment with energy recovery.

**Waste-to-energy provides an alternative way for disposal of MSW, other than landfill.**



# BY COMPARISON

## ITALY

Material recovery accounted for the largest share of municipal solid waste treatment in Italy in 2019, at 29 percent. On the other hand, 21 percent of municipal waste collected in the country was sent to landfills for disposal, while 18 percent was incinerated.

### Recycling in Italy

The recycling rate of municipal waste in Italy has been steadily increasing over the past decade. The recycling rate stood at 31 percent in 2010, but by 2019 Italy had achieved a recycling rate of 51.3 percent. This was one of the highest recycling rates of municipal waste in the EU, and slightly above the average. The EU set a target of a 50 percent recycling rate by 2020, which Italy has already surpassed.

### Landfills

Although recycling has increased in Italy, landfilling is still a common waste disposal method. The volume of waste sent to landfills in Italy has decreased significantly in recent years, falling from 11.7 million metric tons in 2012 to 6.3 million metric tons by 2019. These reductions coincide with the number of MSW landfill sites in Italy declining over the years.

## SINGAPORE

**In 2020, about 5.88 million tonnes of solid waste was generated, of which 3.04 million tonnes was recycled.** Waste generated by the non-domestic and domestic sectors both saw a reduction in 2020 – from 5.37 million tonnes and 1.87 million tonnes respectively in 2019, to 4.12 million tonnes and 1.76 million tonnes in 2020.

### 93% of Singapore's daily rubbish is incinerated at its 4 incinerators

The recycling rate decreased from 59 percent in 2019 to 52 percent in 2020 as the Public Waste Collectors (PWCs) were halted during the pandemic.

COVID-19-related trade restrictions also contributed to the low recycling rate of paper. COVID-19 also affected export trade of other waste streams such as ferrous metals, glass waste, scrap tyres, etc.

## Past Policies

### "Hong Kong's Climate Action Plan 2030+"

Launched in 2017



#### **Don't be a Big Waster"**

- One of the Government's largest public awareness campaigns in food waste reduction.
- The target was to reduce food waste by 40% sent to landfill by 2022.
- This requires everyone to reduce per capita food waste through their everyday actions.

#### **The Energy Saving Plan for Hong Kong's Built Environment 2015~2025+ (Energy Saving Plan)**

- Strengthening its guidelines for government buildings to upgrade the target of electricity consumption powered by Renewable Energy in new schools and educational buildings from the existing 1% to 1.5%;
- Upgraded the Renewable Energy target in new open space and public park projects from 15% of general public lighting to 25%;
- The energy arising from sludge treatment was already used and landfill gas usage is being expanded.
- Collects and produces biodiesel from waste cooking
- Energy will be captured from the first organic waste treatment plant opened at the end of 2017, and a second plant was commissioned by 2021.
  - (T • PARK Sewage Treatment Works)
- A large scale WTE plant to treat general MSW is expected to be operational by 2024, which can supply about 480 GWh of surplus electricity each year that equates to the usage of about 100,000 households.

**By 2024, the above mentioned projects are expected to provide about 1% of Hong Kong's total electricity needs.**

## Obstacles

The waste disposal levy, which was included in the 2017 plan and passed to the legislative council committee in 2018, was ultimately passed on August 26, 2021. The passage of the key bill in waste management took **nearly 4 years of time**.

After an 18-month preparatory period, households and businesses **will pay a charge for their rubbish**, either through purchasing specially sized bags or paying based on the weight of the rubbish taken to disposal facilities

### *Cost*

The costs of collecting small amounts of waste plastics and food waste from widely distributed sources are **relatively high**.

The government needs to take **proactive actions** to support the recycling industry in order to maintain its operation

### *Recycling Market*

#### **Downturn of external recycling market**

Requires the Government's assistance in facilitating the construction of recycling facilities, steering the market towards higher value-added products, and identifying stable market outlets.

### *Behaviour and habits*

It is necessary for members of the community to **change the culture and their behaviour, and develop the habit of practising waste separation at source**.

**Quantity-based waste charging?**



## Targets in the Mainland



- Xie Zhenhua (China's top climate change negotiator)
  - Economic development and environment conservation are the central government's policy highlights for the Greater Bay Area development
  - Drawing up measures to reduce carbon emissions in the area.
- The plan is part of the central government's efforts to fulfill the country's aim to slash carbon dioxide emission intensity **by up to 65 percent by 2030 over 2005 levels.**
- The central government has pledged to invest 41 trillion yuan (US\$6.5 trillion) from 2005 to 2030 in the low-carbon energy sector, creating jobs for more than 69 million people.

## Targets in Hong Kong

### 2020 Chief Executive Policy Address

- Hong Kong to become carbon neutral by 2050, together with the Clean Air Plan and Waste Blueprint for 2035.
- The government will aim to achieve **carbon neutrality** through a variety of means,
  - Exploring new environmentally-friendly technology
  - Enhancing the energy efficiency of buildings
  - Promoting zero-carbon vehicle
  - Building large-scale waste-to-energy facilities.
- Align itself with The Paris Agreement





# WASTE BLUEPRINT FOR HONG KONG 2035

The Government announced the "Waste Blueprint for Hong Kong 2035" in February this year, setting out the vision of "Waste Reduction-Resources Circulation-Zero Landfill", and outlining the strategies, goals and measures to meet the challenges of waste management up to 2035.

- \$1 billion to the Recycling Fund to further support the upgrading and transformation of the recycling trade.
- Benefit more than 1 000 recycling enterprises,
- Help develop a circular economy.

## Medium-term Targets

By implementing charging for disposal of MSW, to gradually reduce the per capita MSW disposal by 40-45% and increase the recovery rate to about 55%

## Long-term Targets

By developing adequate waste-to energy facilities, to move away from the reliance on landfills in the long-run.





# WASTE BLUEPRINT FOR HONG KONG 2035

## Reduce and Recycle 2.0" Campaign

- Launched in June 2020, this two-year territory-wide promotional campaign aims to encourage the public to practise waste reduction and recycling.
- The first phase
  - Introducing the eight types of recyclables and the community recycling network.
  - Social Media Promotions
  - Easy-to-play augmented reality game
  - A new Chatbot function for quick information regarding our local recycling network.
- More publicity initiatives to promote recycling of plastics and food waste will be rolled out under other phases of the Campaign.



## O. PARK 1 & O. PARK 2

- **O-PARK1**
  - Commenced operation in **July 2018**
  - Anaerobic digestion technology that can convert **200 tonnes of food waste into electricity each day**.
  - **Self-sustaining**
  - **Surplus electricity is exported to the power grid**
  - Supporting the electricity need of about 3 000 households annually.
  - Around 85 000 tonnes of food waste have been transformed into energy so far.
- **O-PARK2**
  - Currently under construction and **scheduled to commence operation by 2023**
  - Can transform up to 300 tonnes of food waste into electricity each day.
  - Supporting the electricity need of about 5 000 households annually





# WASTE BLUEPRINT FOR HONG KONG 2035

## Waste Separation

- more adequate recycling outlets
- 18 district recycling network

## Recycling Stations

- A total of nine stations



Green @ Kwun Tong



Green @ Sha Tin

## Recycling Stores

- A total of 22 stores across all 18 districts of the territory
- Located in densely populated areas, especially those where single-block buildings and “3-nil buildings”



The new look of Recycling Stores



Members of the public put the recyclables into the collection boxes of Recycling Stores



The GREEN\$ smart card which allows the public to redeem gifts by earning GREEN\$

## Recycling Spots

- Over 100 spots operate as kerb-side collection booths on a weekly basis at designated time and locations



EPD sets up over 100 recycling spots over the territory on a weekly basis at designated time and locations since the fourth quarter of 2020

## Community Smart Recycling Vehicle

- Launched in September 2020
- Tours around various districts to promote waste reduction messages





# FOOD WASTE

## GOVERNMENT

- **Reduce food waste at source**
  - education programmes detailed on the platform Food Wise HK.
  - Edible Food donations will be supported through an NGO network.
- Up to 200 tonnes (only) of food waste collected daily will be treated at the Organic Resources Recovery Centre (ORRC) where some food will be turned into compost.
- **Biogas** will also be extracted for energy use.
- **2 more planned Organic Waste Treatment Facilities** that when built will process a further 500 tonnes of food waste per day. When the incinerator is operational much of the food waste will end up in there.
- **New incinerator near Shek Kwu Chau island** (south of Lantau Island). Integrated Waste Management Facility (IWMF) with a maximum treatment capacity of 3,000 tonnes per day will be completed by 2024.

## PRIVATE

- **Zero-waste grocery chain in Hong Kong, Slowood,**
  - Provides plastic-free and zero-waste organic groceries
  - Bring your own containers, weigh what you want and take it home.
  - Declared that it will stop stocking fish products in its stores, citing “Seaspiracy”—a recently released Netflix documentary about the environmental impact of fishing—for its decision.
- **Phenix by OnTheList**
  - A new platform which will allow Hong Kong residents to grab perfectly good food with huge discounts from F&B businesses that would otherwise discard these items.





## PLASTIC WASTE

Research in 2019 by Greenpeace East Asia and Education University reveals that Hong Kong's seas are being swamped by plastic pollution caused by the city's packaging habits.

### A 11-fold increase in plastic pollution in just 3 years.

61% of the plastic debris collected in the study was from polystyrene, and 18% from polythene, the plastic in our shopping bags and plastic bottles. According to the researchers, the results demonstrate the plastic packaging problem in Hong Kong.

A total of about 12,000 tonnes of floating refuse and about 4,000 tonnes of domestic refuse from vessels are collected annually.



## GOVERNMENT

- Two mandatory producer responsibility schemes (PRS) in place so far.
  - **Plastic Shopping Bag Charging Scheme**
  - **PRS on Waste Electrical and Electronic Equipment (WEEE).**
- Formalising the PRS on Glass Beverage Containers in addition.
- Launched a three-month public consultation March 2021 on a "**producer responsibility scheme**" for plastic beverage containers.
- **Reverse vending machine (RVM)** trials taking place across Hong Kong
  - Allow the consumer to return their plastic beverage bottles (and some liquid cartons) to vending machines, providing the returnee with an incentive such as value on their Octopus or coupons for shopping.



# PLASTIC WASTE

## MICROBEADS

- Plastic microbeads are contributing to the increasing flow of plastic into our oceans.
- Commissioned a consultancy paper on the issue of microbeads in personal care and cosmetic products (PCCP) in April 2018.
  - Accepted the recommendation to implement a voluntary scheme **for the phase out of microbeads in PCCP.**
- **Initial plan to establish a "Microbead-free Charter" for implementing a voluntary phase-out scheme in 2021.**
  - set their **own targets and timetables** for reducing or ceasing the production, importation and sale of PCCPs containing microbeads and strive to achieve the targets within the set timeframe.
  - **will follow up on the participants' phase-out progress, and conduct sample surveys and product testing.**

## PRIVATE

- Using waste found in the Shing Mun River and elsewhere in Hong Kong, designers Howard Chung and Irene Cheng created 12 benches for Sha Tin Town Hall
- In 2018 almost 17 million plastic items, or 40,000 items daily, were found to be drained into the ocean via the Shing Mun River, mostly being food packaging, cutleries, and household plastic bottles.
- In collaboration with local community organizations in Shatin, HIR Studio worked for a period of two months collecting household plastics that were discarded during popular weekend events.





# PLASTIC WASTE

## PRIVATE

### Watsons Hong Kong (Partnering with P&G)



- “Plastic Reborn”, a new territory-wide plastic container recycling campaign.
- Will provide convenient collection points across the city
- Work with Hong Kong-based circular economy service **The Loops** to send plastic personal care containers to a local recycling facility in Tuen Mun.
- to “take the lead in driving the circular economy from the retail market”.

### Masks

- Hong Kong-based independent face mask brand Maskology has announced a new partnership with environmental nonprofit A Plastic Ocean Foundation to begin developing biodegradable disposable face masks.
- The collaboration hopes to be able to tackle the burden the pandemic has had on the world’s plastic waste crisis.



### Fabrics

- In 2018, the Hong Kong Research Institute of Textiles and Apparel, in collaboration with the H&M Foundation, developed a hydrothermal separation treatment (the Green Machine) which could fully separate and recycle cotton and polyester blends into new fibres and cellulose powder.
- The H&M Foundation and the Innovation & Technology Fund are co-investing some US\$100 million in HKRITA from 2021 to 2025 to develop and commercialise other sustainable technologies



## OVERALL CONSTRUCTION WASTE

### ECOPARK



Hong Kong's first recycling-business park, is a facility of the Environmental Protection Department specially constructed for the recycling industry.

- To promote the turning of waste into resources by returning recyclable materials to the production line and the consumption loop, promoting the development of the local environmental and recycling industry.
- 12 lots of EcoPark have been leased for the recycling of **waste cooking oil, waste metals, waste wood, waste electrical and electronic equipment (WEEE), waste plastics, waste batteries, construction and demolition waste, waste glass, waste rubber tyres and food waste.**

### Y - PARK



- To be commence operation in late 2021
- A handling capacity of around 11,000 tonnes of yard waste in the first year (i.e. 30 tonnes per day)
- Gradually increased to an annual average of around 22,000 tonnes (i.e. 60 tonnes per day).
- The yard waste collected will be screened, sorted and treated for transforming into various useful materials such as compost. Some wood materials will also be provided to relevant industries to support their operations.



# OVERALL CONSTRUCTION WASTE

## BEAM PLUS EXISTING BUILDINGS

- Created by Hong Kong Green Building Council
- Measures the actual performance of a building and evaluates its facility management practices.
  - Management
  - Energy Use
  - Indoor Environmental Quality
  - Materials and Waste Aspects
- Advantages of joining:
  - Implement new initiatives that improve a building's energy efficiency and environmental performance;
  - Enhance the performance of existing buildings of all ages;
  - Contribute towards the target of the Government's latest Energy Saving Plan.





## SPECIAL WASTE

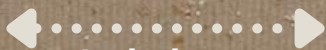
Special waste refers to the following items:

- Chemical waste,
- Clinical waste,
- Animal carcasses,
- Livestock waste,
- Radioactive waste,
- Grease trap waste
- Waterworks/sewage sludges.

Hong Kong produce close to 3 million cubic meters of sewage, which results in approximately 1,200 tonnes of sludge every day.



### T·PARK



#### A sludge waste treatment facility to cope with special waste

- **4 incineration in the facility.**
  - Advanced incineration technology to ensure efficient and reliable treatment of sludge.
  - T·PARK can handle a maximum capacity of 2,000 tonnes of sludge per day.
  - The heat energy generated from the incineration process is recovered and turned into electricity that can **support the needs of the entire facility.**
  - **When running at full capacity, it can produce up to 2 megawatts (MW) of surplus electricity** for the public power grid



## SPECIAL WASTE

### *Food Waste/Sewage Sludge Anaerobic Co-digestion Trial Scheme*

Improving **nutrient balance and biogas yield** in anaerobic digestion at sewage treatment facilities and can contribute to diverting food waste from landfills.



GENERATE BIOGAS AS AN **ENERGY SOURCE** TO PRODUCE ELECTRICITY FOR THE SEWAGE TREATMENT FACILITIES' INTERNAL CONSUMPTION.

2019: Constructed at the existing **Shuen Wan Leachate Pre-treatment Works** at Tai Po

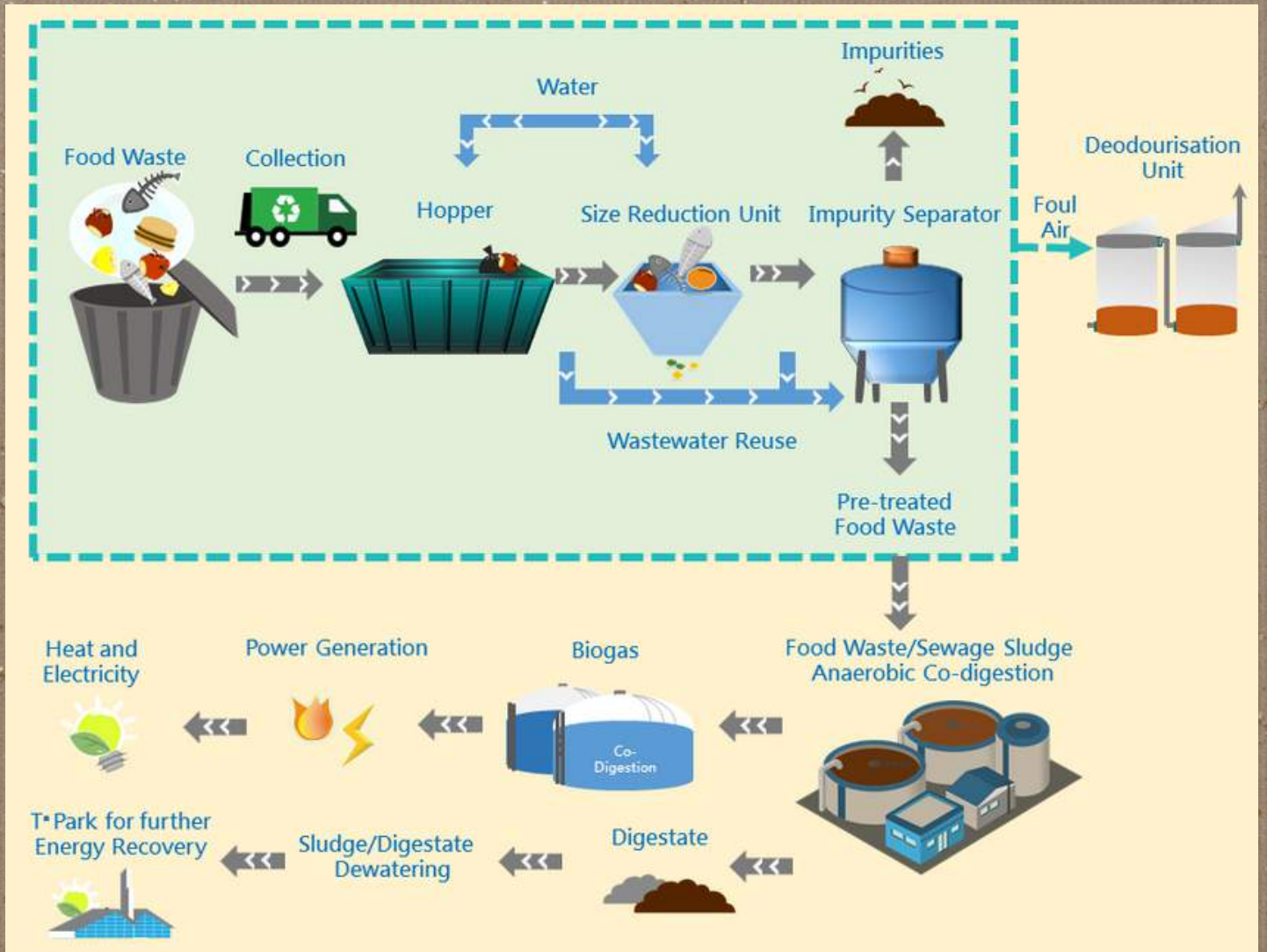
- a maximum of 50 tonnes per day of pre-treated food waste to the Tai Po Sewage Treatment Works for food waste/sewage sludge anaerobic co-digestion

2022: Construction at the existing **Sha Tin Sewage Treatment Works**



# SPECIAL WASTE

## Food Waste/Sewage Sludge Anaerobic Co-digestion Trial Scheme





# COMPARISON ON THE LATEST DATA

## More work needed to be done regarding the sector.

In 2017,

### 5.66 million tonnes.

The average daily quantity was 16,096 tonnes per day (tpd)

- **Food waste** 3,662 tonnes per day.
- **Waste paper**. 2,532 tonnes per day.
- **Waste plastics**, 2,124 tonnes per day.

In 2018

### 5.87 million tonnes.

The average daily quantity was 16,096 tonnes per day (tpd)

- 
- **Food waste** 3,565 tonnes per day.
  - **Waste paper**. 2,702 tonnes per day.
  - **Waste plastics**, 2,343 tonnes per day.

In 2019,

### 5.71 million tonnes.

The average daily quantity was 15,637 tonnes per day (tpd)

- 
- **Food waste** 3,353 tonnes per day.
  - **Waste paper**. 2,704 tonnes per day.
  - **Waste plastics**, 2,320 tonnes per day.



## USEFUL LINKS

2021-02 – Environment Bureau

The Waste Blueprint for Hong Kong 2035

[https://www.enb.gov.hk/sites/default/files/pdf/waste\\_blueprint\\_2035\\_eng.pdf](https://www.enb.gov.hk/sites/default/files/pdf/waste_blueprint_2035_eng.pdf)

2021-03-17 - reply by the Secretary for the Environment, Mr Wong Kam-sing to Hon Martin Liao in the Legislative Council

Promoting a post-epidemic green recovery of the economy

<https://www.info.gov.hk/gia/general/202103/17/P2021031700411.htm>

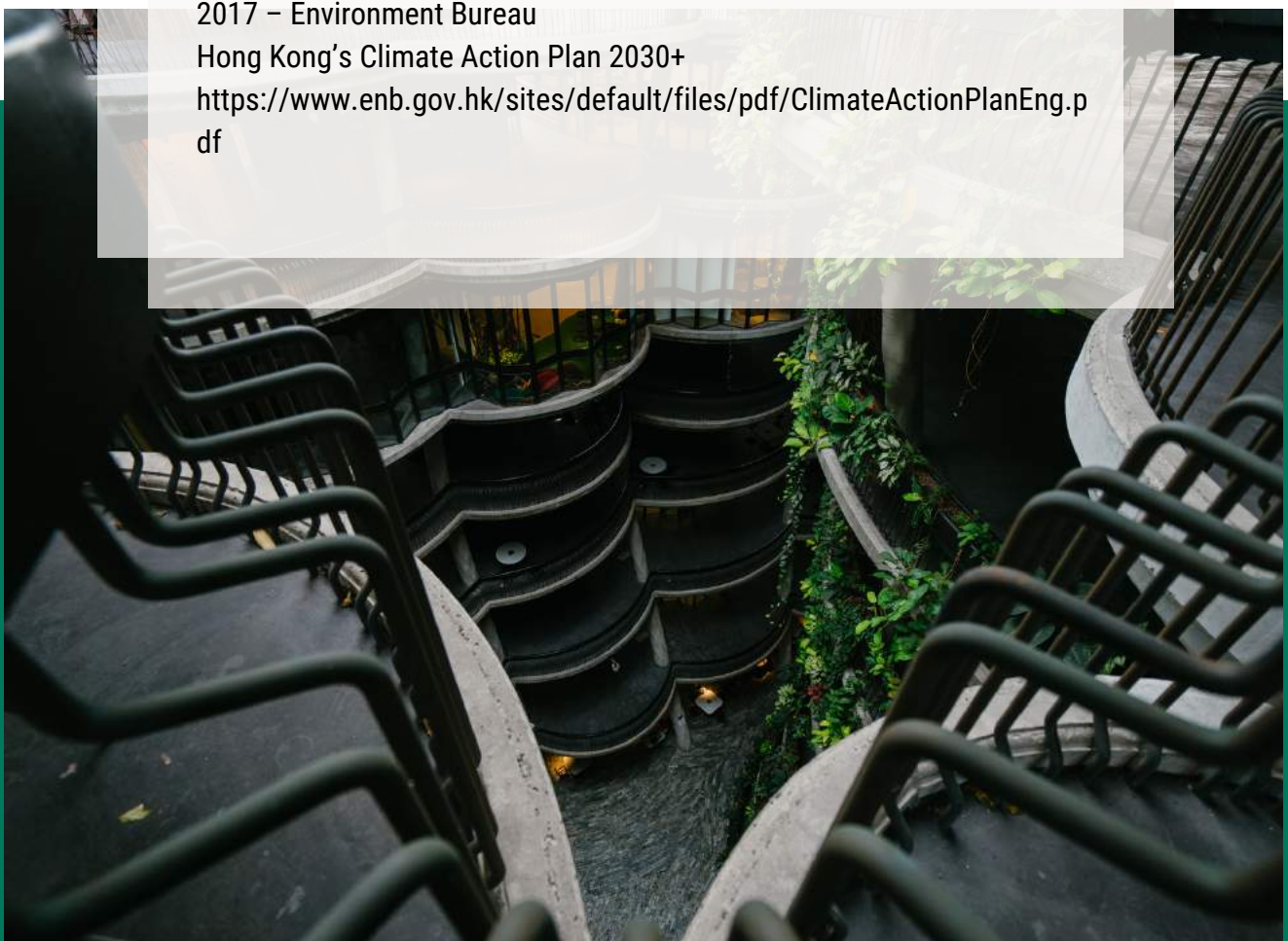
Public Consultation-Producer Responsibility Scheme on Plastic Beverage Container

<https://www.pprs.hk/files/con-doc-en.pdf>

2017 – Environment Bureau

Hong Kong's Climate Action Plan 2030+

<https://www.enb.gov.hk/sites/default/files/pdf/ClimateActionPlanEng.pdf>







**ITALIAN TRADE AGENCY**

**ICE - Italian Trade Commission  
Hong Kong**

---

T. +852 2846 6500

F. +852 2868 4779

Email. [hongkong@ice.it](mailto:hongkong@ice.it)  
[www.ice.it](http://www.ice.it)

Italian Trade Agency



@ITAtradeagency



ITA - Italian Trade Agency



@itatradeagency

