

Waste Management in Hong Kong

Sustainable Domestic Warriors

2019/2020

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01

Waste crisis in HK

What is Municipal Solid Waste (MSW)?

There are three sources of municipal solid waste in Hong Kong:

1. Domestic solid waste

waste comes from households and public areas including waste collected from residential buildings, litter bins, streets, marine areas and country parks.

2. Commercial waste

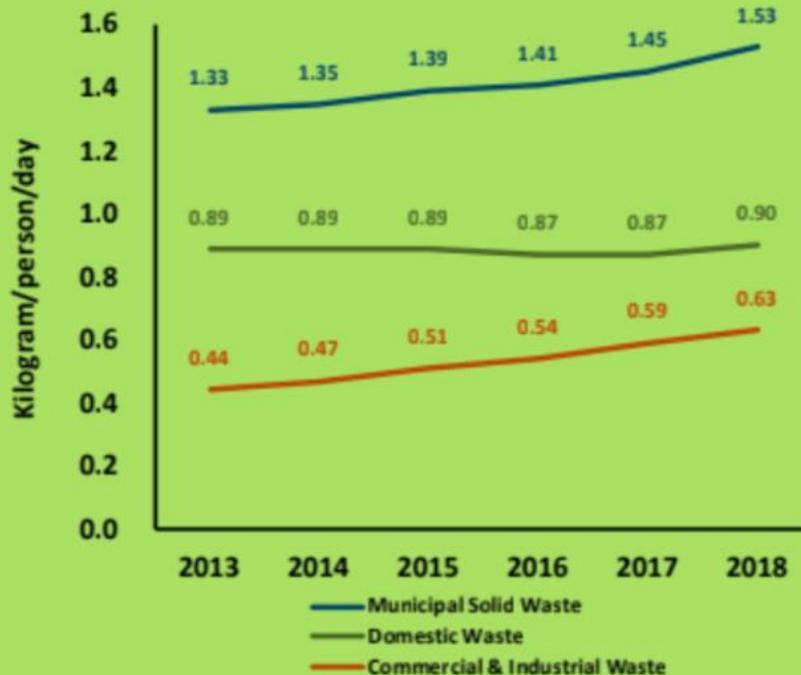
waste comes from shops, restaurants, hotels, offices, markets in private housing estates

3. Industrial solid waste

generated by all industrial activities, but does not include construction and demolition waste, chemical waste or other special waste.

Disposal rate of MSW

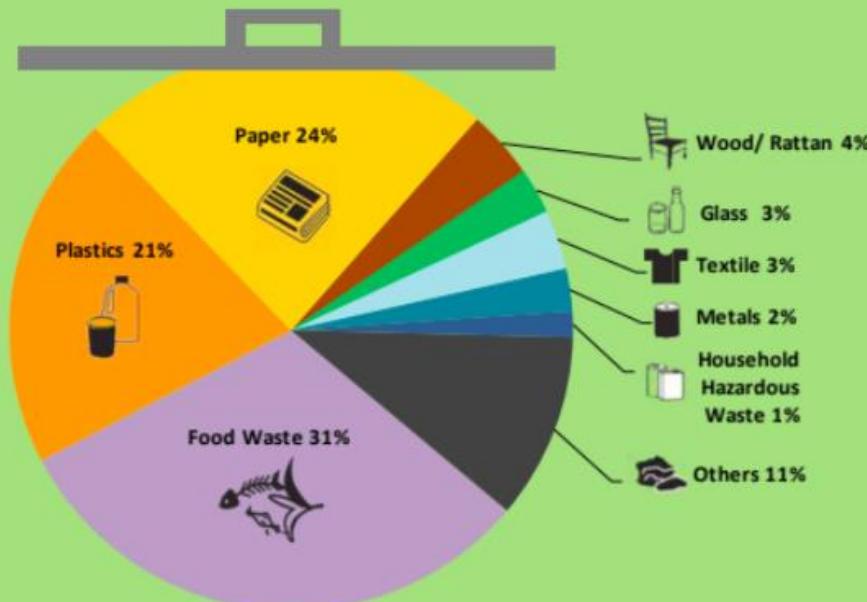
Per Capita Disposal Rate of MSW



- From 2013 to 2018, the disposed rate of MSW at landfills per capita rose from **1.33 kg** to **1.53 kg**.
- The average disposal rate of domestic waste is **0.90 kg/person/day** in **2018**

Composition of MSW disposed of at landfills

Composition of MSW Disposed of at Landfills in 2018



Total disposed quantity: 4.17 million tonnes

- The major component of MSW is **domestic waste**.
- **11,428 tones** of MSW landfilled each day, total **4.17 million tonnes** waste disposed in 2018
- The largest portion of disposed waste at landfills is **food waste (31%)**.
- The second portion of disposed waste is **paper (24%)**.
- The third portion of disposed waste is **plastic (21%)**.

How many food waste produced in Hong Kong?



Each day, 3,662 tonnes of food waste is disposed = Weight of 250 double decked buses

(EPD, 2019)

Waste Disposal Method

Hong Kong had a population over **7 million**, the amount of municipal solid waste generated each year is numerous. In **2018, 5.95 million tonnes** MSW were generated, only **30%** materials recycled and more than half of MSW disposed at landfills.

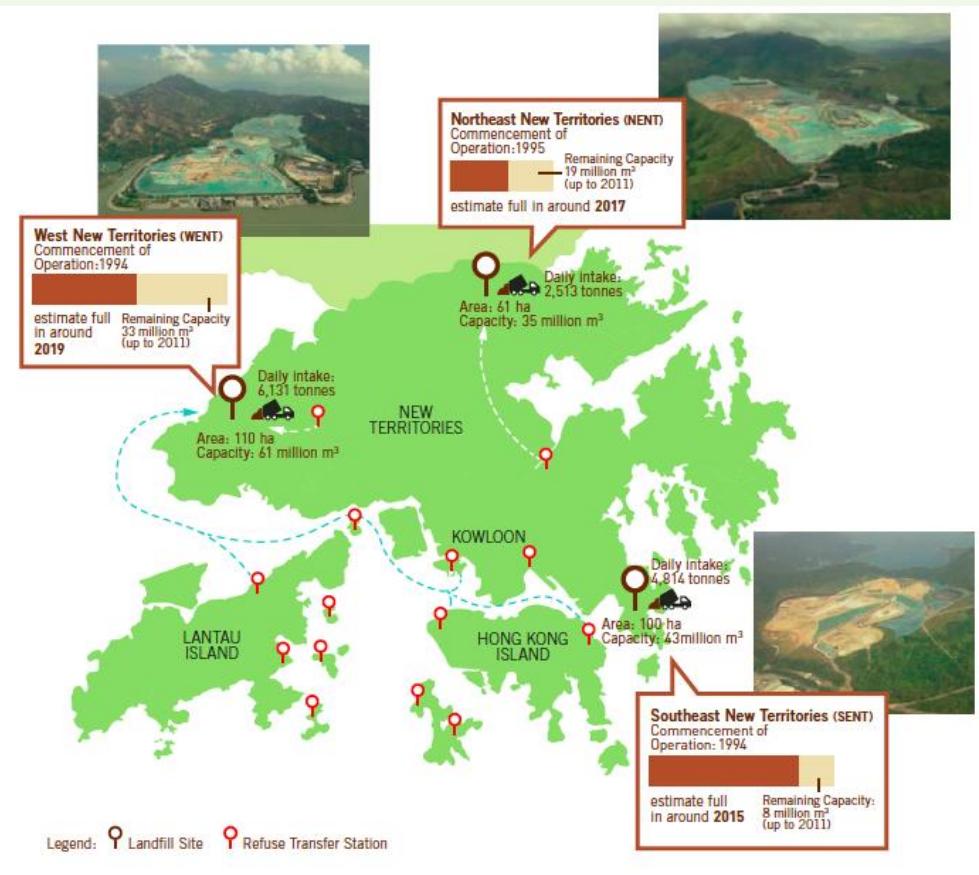
Disposal of Municipal waste, Construction waste, Special waste

- ❖ North East New Territories (NENT) Landfill at Ta Kwu Ling
- ❖ West New Territories (WENT) Landfill at Tuen Mun

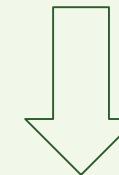
Disposal of Construction waste

- ❖ South East New Territories (SENT) Landfill at Tseung Kwan O

Future Landfill development



Three strategic landfills began operation in 1990s and nearly full capacities now, the EPD is undertaking NENT Landfill and WENT Landfill extension projects.



The expanded landfills estimated to meet the needs up to 2030s.

Hong Kong's landfills will be exhausted soon!



North East New Territories Landfill Extension

02

Waste Management Policy in HK

Waste management policy in HK

Mandatory Producer Responsibility Schemes

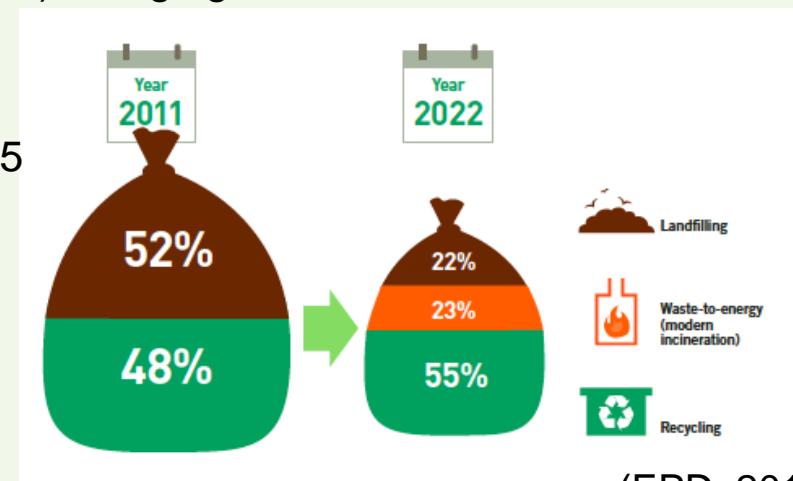
- Plastic Shopping Bag Charging (implemented from 2015)
- PRS on Waste Electrical and Electronic Equipment (implemented from 2018)

Policy under planning

- Introduction of Municipal Solid Waste (MSW) charging

Waste Recovery Targets

- EPD target the recycling rate increase to 55 % in 2022, 23% waste transfer to energy.



Plastic Shopping Bag Charging

From **2015**, Full Implementation of the Plastic Shopping Bag Charging:

- Plastic shopping bag was banned on free distribution at all points of retail sales in the territory.
- Retailers should charge at least **50 cents** for each PSB provided to consumers
- Exemptions on PSB use for food hygiene reasons



(EPD, 2020a)

Plastic Shopping Bag Charging



(EPD, 2020a)

Definition of plastic shopping bag covered under Plastic Shopping Bag Charging

1. Plastic Shopping Bag



2. Paper bags



(EPD, 2020a)

Definition of plastic shopping bag covered under Plastic Shopping Bag Charging

3. Non-woven bags



(EPD, 2020a)

Plastic Bags Subject to Charge?



Waste electrical and electronic equipment (WEEE)

The Producer Responsibility Scheme on Waste Electrical and Electronic Equipment covering the regulated electrical equipment (REE) (i.e. air-conditioners, refrigerators, washing machines, televisions, computers, printers, scanners and monitors) is implemented from 2018.

Statutory free removal service is arranged by sellers when you purchase new REE.



Proper Recycling of
Regulated Electrical Equipment
Turning Waste into Resources



Waste electrical and electronic equipment (WEEE)

E-waste collection :

Collection hotline (2676 8888)

You can make an appointment with the Government's recycling service operator, WEEE·PARK, for free door-to-door collection service.

Community Green Stations

You may send the old REE to the Community Green Stations or the public place collection points. CGSs will transfer the collected waste REE to WEEE·PARK for handling.



(EPD, 2020b)

Introduction of Municipal Solid Waste Charging

In line with the “polluter-pays” principle, charges are based on the quantity of waste generated, so that people become more aware that waste disposal comes at a cost. With reference to the experiences of other major cities, municipal solid waste (MSW) charging is an effective tool to achieve waste reduction.

Aims: To create financial incentives to drive behavioral changes in waste generation and hence reduce overall waste disposal.

How to charge ?

For the household waste, the residents have to use designated garbage bags (various sizes available). The oversized waste should be affixed with an "designated label". The price of "designated labels" will be set at a uniform rate of \$11 each.



Price at \$0.11 per litre

9 sizes, t-shirt and flat-top designs



(EPD, 2020c)

03

Domestic Waste Recycling

Why recycling is important?

Recycling enable the materials to reuse multiple times therefore extending their lifecycle.

Conserve
natural
resources

Recycle the
valuable
materials

Reduce
demand of
landfill

Benefit of recycling

1. Recycling reduces carbon emission

Adopting recyclable materials in the manufacturing process reduce carbon footprint than virgin materials as recycled materials doesn't need extraction, refinement, transportation compared to virgin materials.

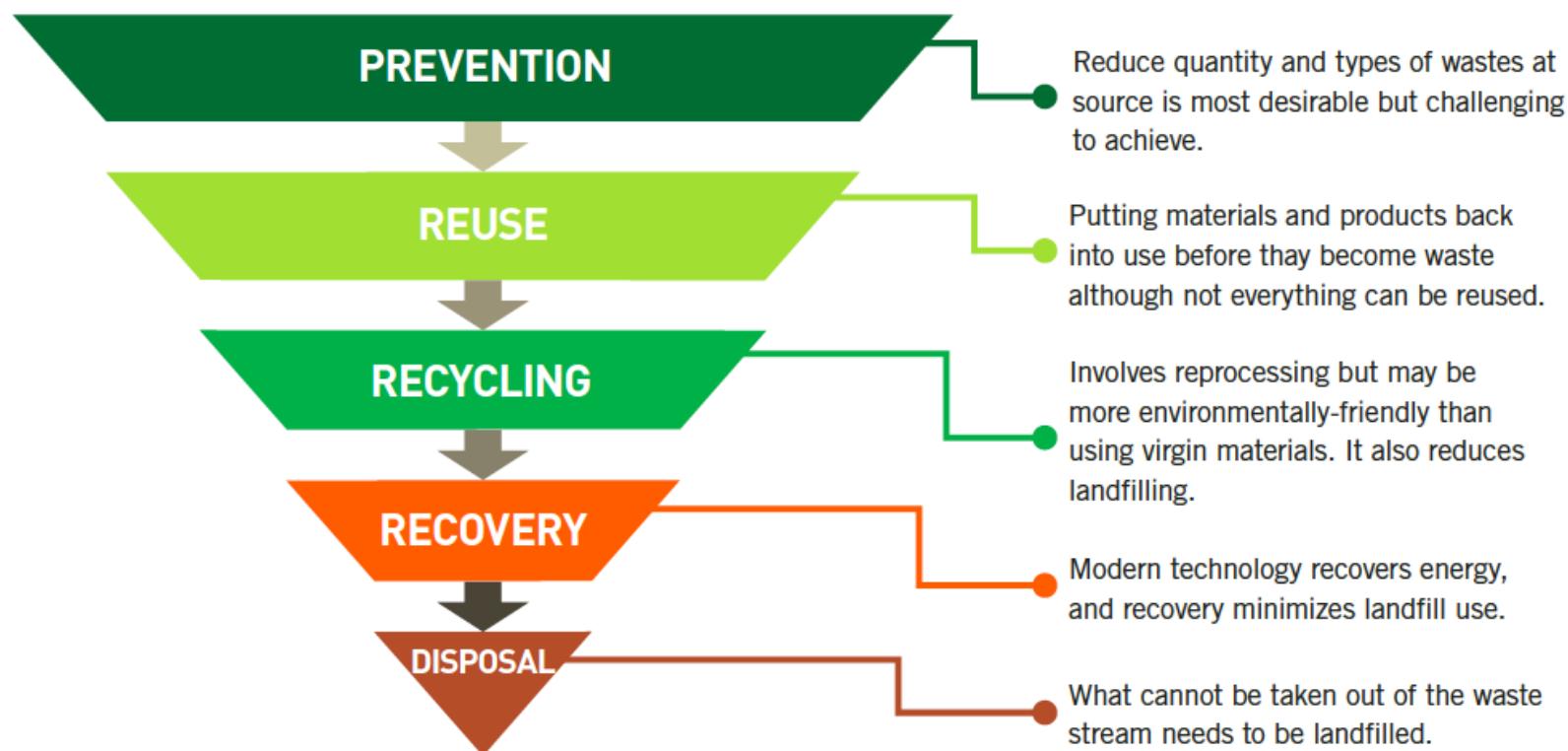
2. Recycling reduces need for landfills

In 2018, the total quantity of solid waste disposed of at the strategic landfills was 5.86 million tonnes. The shortage of land impacts the new location for landfills needed in the future. Methane gas produced in landfills which is a potent greenhouse gas compared to CO₂.

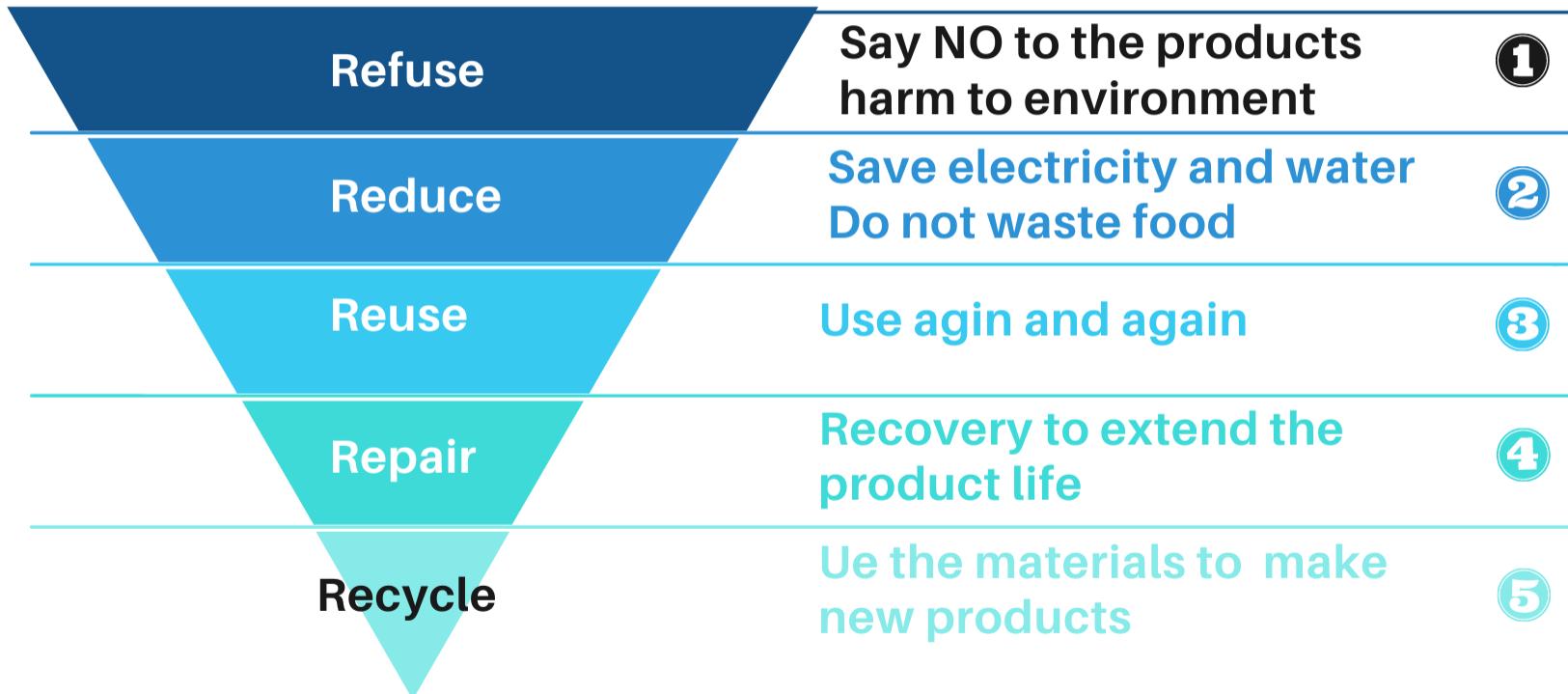
3. Recycling protects the environment

Recycling separated useful materials from waste stream, hence lowering the chance leaking out to environment.

Waste Management Hierarchy



5R Principle



Source Separation of Domestic Waste

Recycling materials:

1. Aluminum metal cans
2. Paper
3. Plastic
4. Metals
5. Glass
6. Cardboard
7. Polyfoam





04

Recycling Facilities in HK

Waste Management Facilities in Hong Kong



Community Green Station



CGSs operated by non-profit-making organisations with government funding

Aims: To enhance environmental education and assist local communities in the collection of various recyclables, thereby enabling green living to take root at the community level.

Functions of Community Green Stations

- ❖ The main function of CGSs is to provide support to waste reduction and recycling programmes at the community level, including collaboration with different stakeholders to collect low-value recyclables and enhance the community collection network.
- ❖ Such collaboration may allow members of the public to get involved in waste reduction and recycling in person and help implement other source separation initiatives.
- ❖ CGSs also promote environmental education with various publicity and public education programmes that target at local residents of different status and background.
- ❖ Organised either on-site or outside the CGS facility, these programmes aim to instill a green living culture into the community from different perspectives, particularly waste reduction and recycling.

O · PARK1



The first organic resources recovery centre, located at Siu Ho Wan of North Lantau adopts anaerobic digestion technology to convert food waste into biogas for electricity generation.

The centre is capable of handling **200 tonnes** of food waste per day, about **14 million kWh** of electricity can be exported to the grid per year, which is equivalent to the power consumption of **3,000** households. Also, the residues from the process can be produced as compost for landscaping and agriculture use.



T · PARK

A sludge treatment plant located at Nim Wan Tuen Mun demonstrated the benefits of green architecture and sustainable use of resources in Hong Kong. It capable 2000 tonnes of sludge daily from sewage treatment facilities.

The facility self generated heat energy, electricity, water management. The surplus power could be exported to 4,000 households.

The design of T-park combines a variety of advanced technologies with recreational, educational and ecological features.



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