

Solid Waste Management in Yokohama: Collaboration among Citizen, Private sector and Local Government

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YOKOHAMA URBAN SOLUTION ALLIANCE (YUSA)

YUSA at a Glance

2017

Founded



**Cooperation
Agreement**

31

Member Companies

Due to the rapid concentration of the population as a result of economic growth and urbanization, emerging countries are facing various urban issues.



The City of Yokohama was also faced with similar issues during the post-war period. By overcoming such issues, Yokohama was able to develop a sustainable and environmentally friendly city.

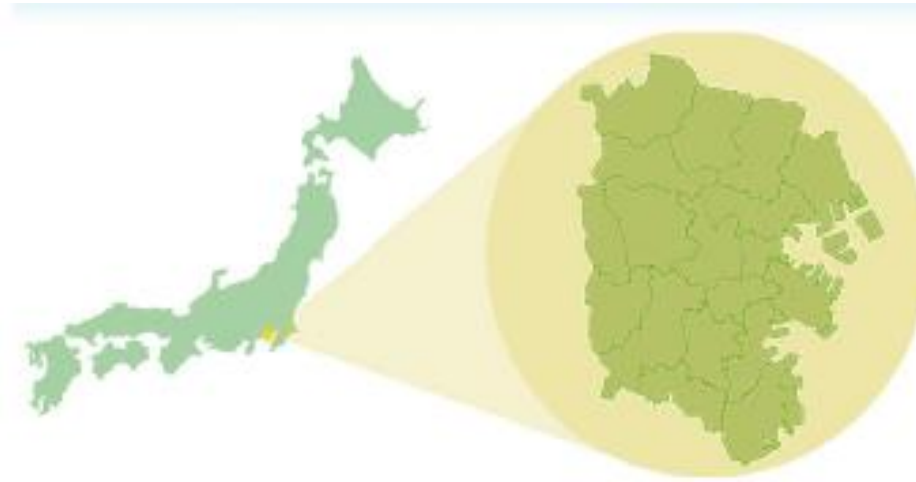


Agenda

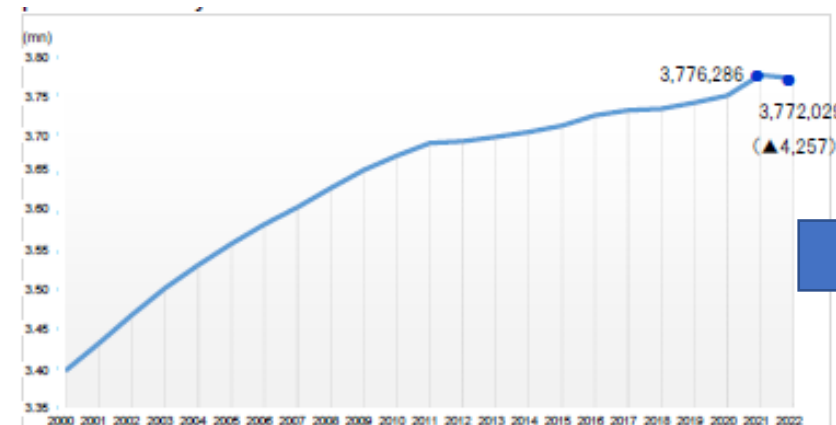
1. History of Solid Waste Management in Yokohama
2. Cooperation of citizen
3. Cooperation of private sector

City of Yokohama

Largest municipality with total population of about 3.77 million



- Population : 3,772,029
- Household: 1,766,617
- Area : 437.78km²
- Population density : 8,616
(As of January 2022)

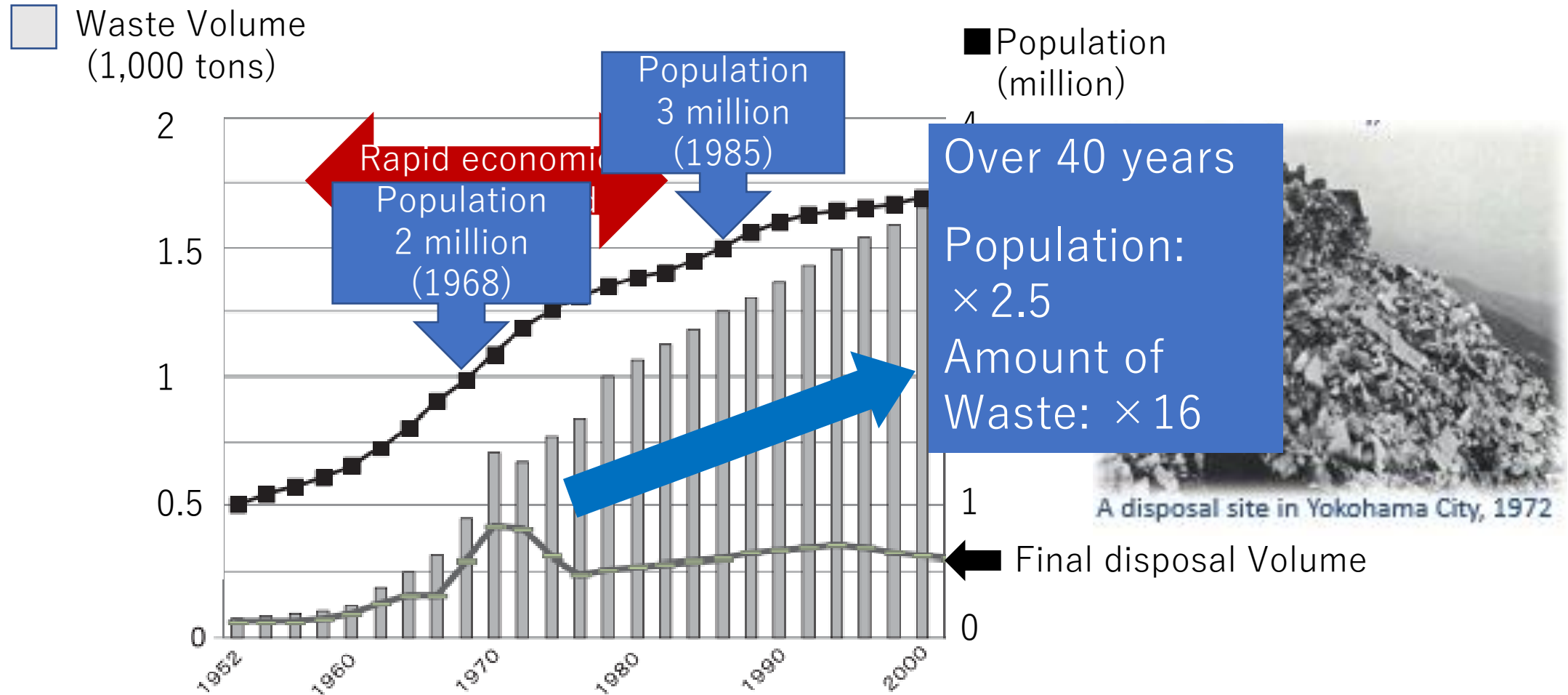


Yokohama's Population Trends (Estimated as of Jan 1, 2022)

In 2021, Yokohama's population dynamics reduced from its previous fiscal year for the first time since 1945

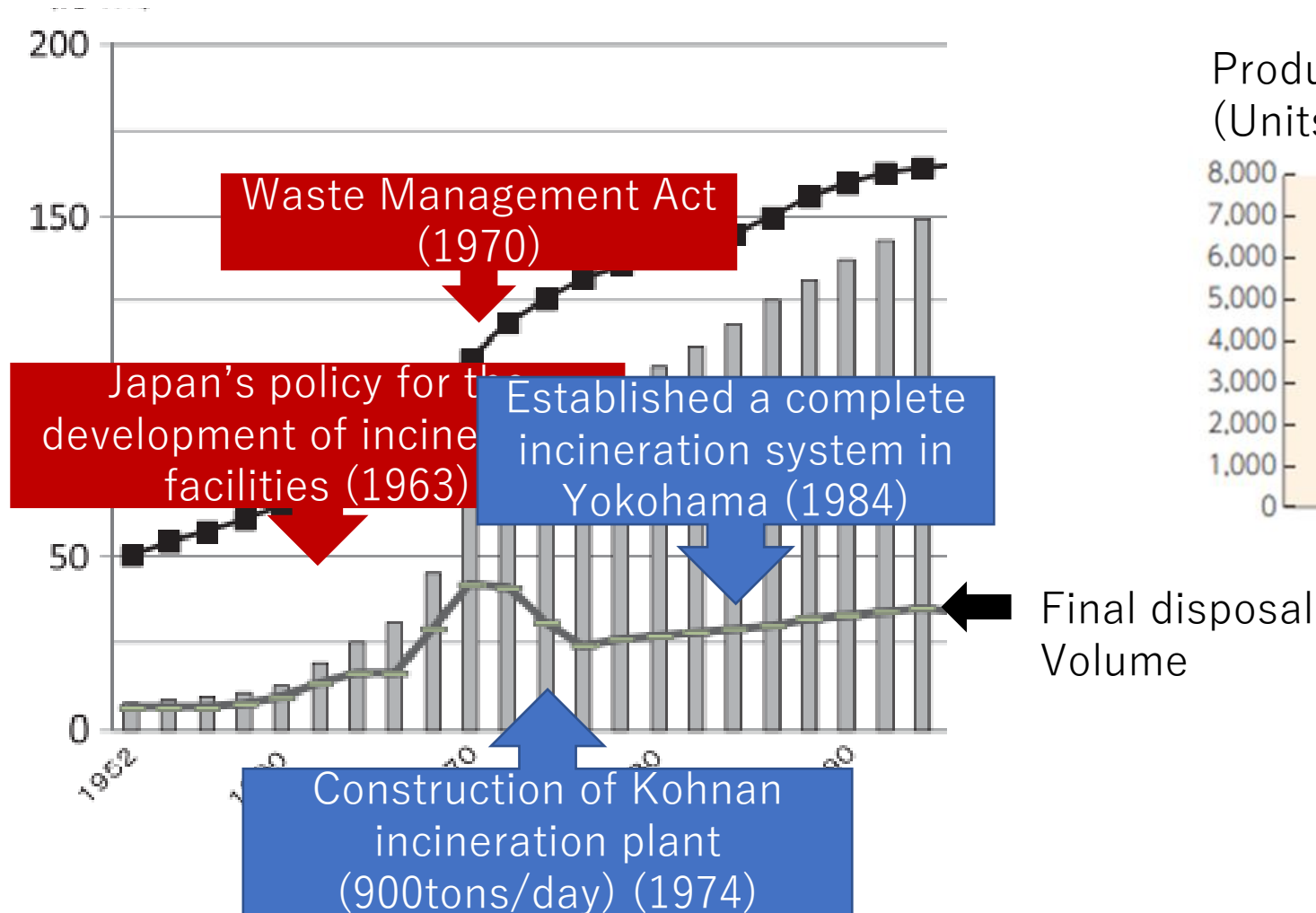
- Waste generation per capita : 839 g/day
- Recycling rate: 22.9%

History of Solid Waste Management in Yokohama: Rapid economic growth period (1960s to 1970s)

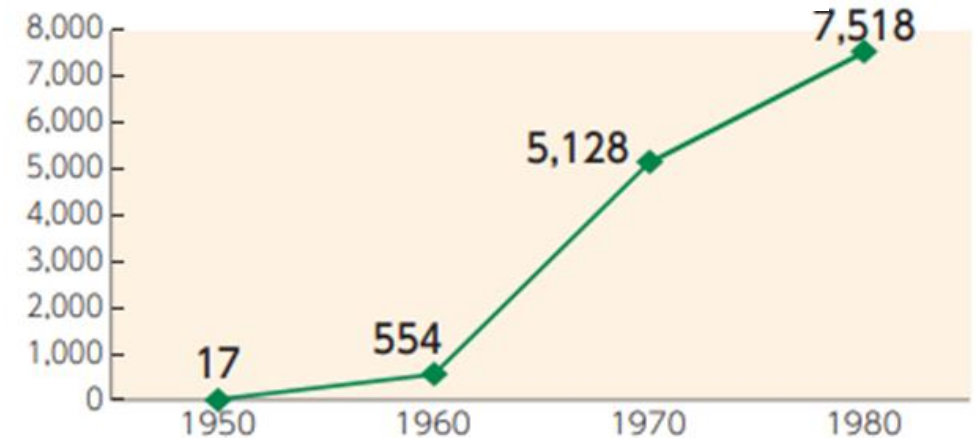


History of Solid Waste Management in Yokohama:

Promotion of proper waste management (1980s to early 1990s)



Production of plastics in Japan
(Units: 1,000 tons)



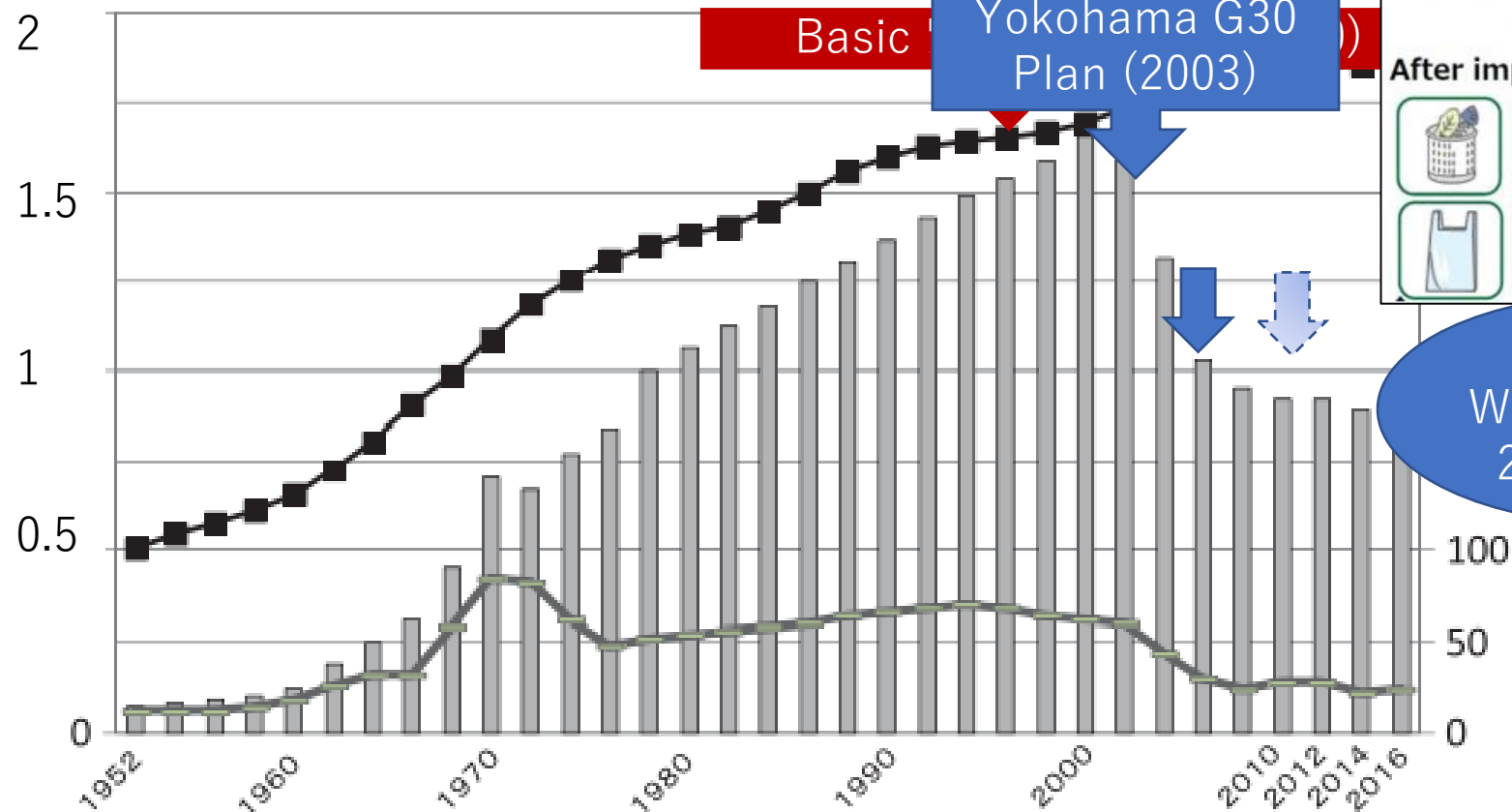
Source: Website of the Japan
Plastics Industry Federation

History of Solid Toward a sound

Recycling regulations
(Containers and Packaging Recycling
Act (1995)~Small Home Appliance
Recycling Act (2012))

Basic

Yokohama G30
Plan (2003)



Previously : **7types**



Separating 「Waste」 and 「Recyclables」

After implementation: **15 types**

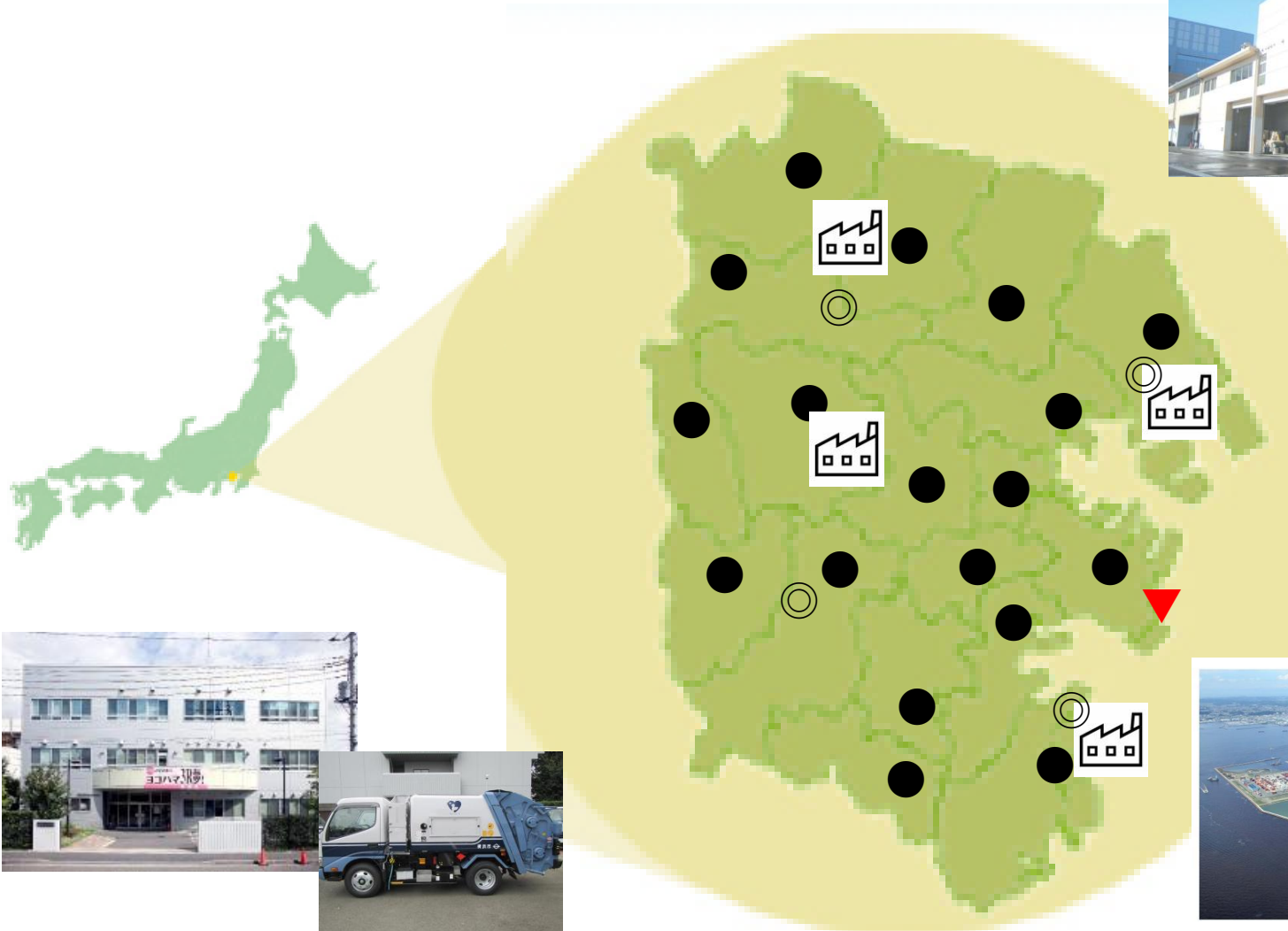


▲ 30%
Waste Volume
2003⇒2005

Two incineration
plants were closed

▲ \$756 million
Reconstruction cost

Current state of waste management in Yokohama: Waste treatment facilities



- 18 Collection offices
(1 per ward)
- 🏭 4 Incineration plants
(plus 1 backup)
- ◎ 4 Recycling centers
- disposal site
filled site)



Current state of waste management in Yokohama: Municipal waste treatment flow (2021)

Source: compiled based on figures of Jigyogaiyo, Resources and Waste Recycling Bureau, City of Yokohama, 2021



**Total volume of
waste generated
1,178**

**Intermediate
treatment**



**Total volume of recycling
Household:257(30.7%)
Small business:66※**

※Including recyclables
collected from other cities

**Incineration
852**



**Direct final
disposal
3**



**Treatment
residue**



**Final disposal
124**

(Units: 1,000 tons/year)

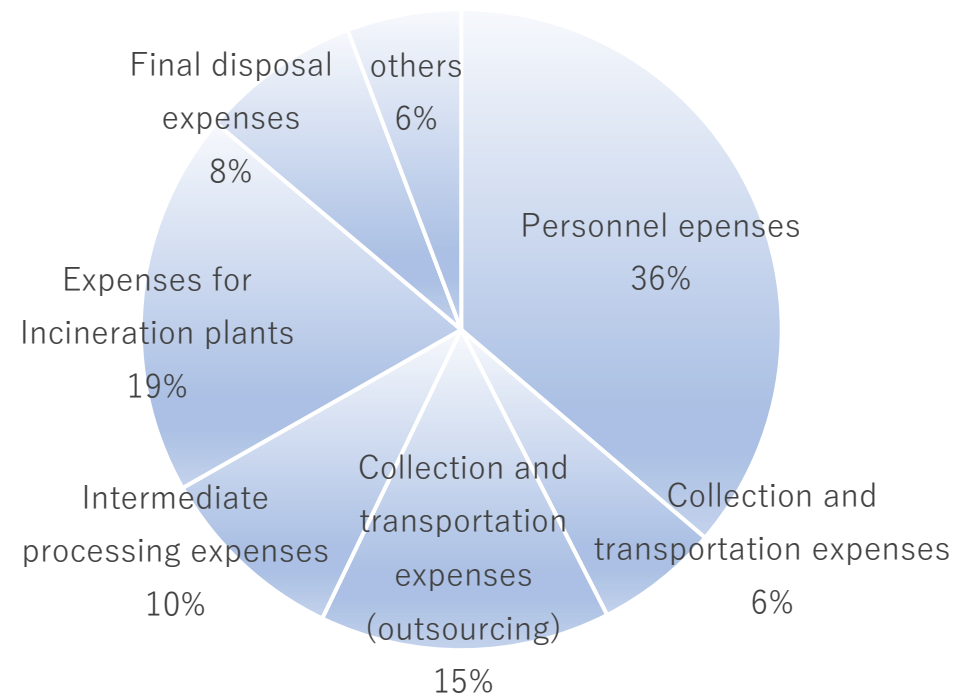
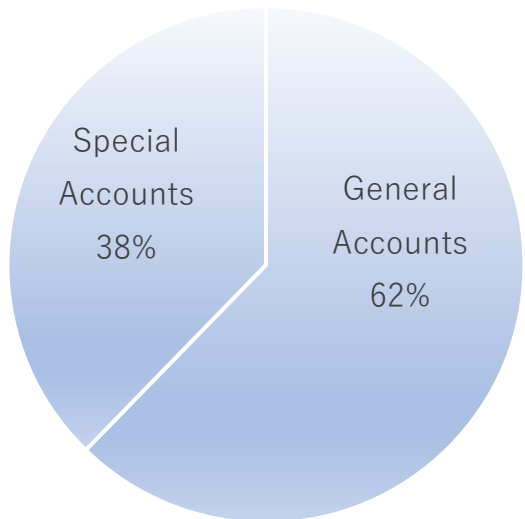
Current state of waste management in Yokohama: Waste management expenses (2022)

- Annual budget (Yokohama city) : \$ 8.5 billion
(Resources and Waste Recycling Bureau: 3%)
- Number of employees (Yokohama city) : 45,742
(Resources and Waste Recycling Bureau: 1,931)

Source: compiled based on figures of Jigyogaiyo, Resources and Waste Recycling Bureau, City of Yokohama, 2022

Expenditure of Resources and Waste Recycling Bureau


Revenue of Resources and Waste Recycling Bureau




Agenda

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Cooperation of citizens




Previously : 7 types



Separating 「Waste」 and 「Recyclables」

After implementation: 15 types



Caution!


- If possible, please remove non-plastic parts (such as metals and paper).
- Plastic Items (such as video cassettes, toys, and wash basins) → **Burnable Garbage**
- Please make it a priority to dispose of food trays at supermarkets and other retailers with storefront recycling stations.

What Does "Containers /Wrapping" Mean?

Containers and packaging (wrapping) that are no longer needed after taking out the products within.


Tips on Storing Plastic Containers/Packaging

Please reduce the volume by cutting them with a pair of scissors and stacking them or crushing them.



When placed in a garbage bag as is → When placed in a garbage bag after cutting and stacking


Let's separate properly and recycle!



Plastic Containers/Packaging

• Please use up all contents in tubes such as mayonnaise when disposing. No rinsing is necessary.

• Gently rinse or wipe off the insides of trays, cups, and bottles to remove any residue with leftover dishwater.



Source: compiled from the website of Resources and Waste Recycling Bureau, City of Yokohama

資源循環局
April 2018 Edition

Separation and Disposal of Garbage and Recyclables

G30 のその先へ ヨコハマ3R夢!

スリム

Everyone! Let's 3Rs

Reduce Reduce the garbage itself!

Reuse Use many times

Recycle Separate and use again as resources

Points for separating

Remember the categories: **Burnable garbage**, **Used paper**, and **Plastic containers/packaging**.

Get a box ready for each category

Separate garbage as you discard

Burnable garbage box

- Food scraps
- Small household appliances
- Plastic items
- Foil, soaked or greasy paper

Used paper box

- Paper other than newspaper, magazines, cardboard or disk covers
- Wrapping paper / mount, etc.
- Envelopes, memo paper, etc.
- Please bundle newspaper, magazines, cardboard and drink cartons separately.

Plastic containers / packaging box

Please rinse lightly

- Bottles
- Tubes
- Cups and packages trays
- Nets
- Caps and lids
- Plastic bags (plastic wrap)
- Cushioning material

Resources & Waste Recycling Bureau
<http://www.city.yokohama.lg.jp/shigen/>

If you don't speak Japanese, please find a Japanese speaking person or call 045-642-2124 (Monday, 10:00-17:00) or 045-642-2124 (Monday, 10:00-17:00) in English, Chinese, or Spanish.

Cooperation of citizens

Awareness raising programs and voluntary activities by citizens

Environmental
education for children



Cleanup activities



Group collection
of recyclables



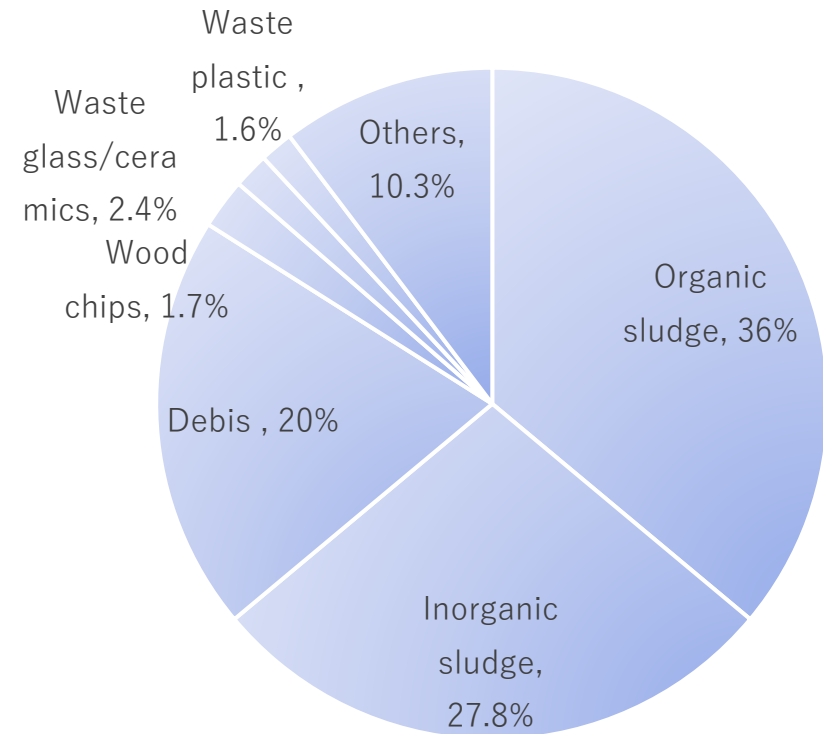
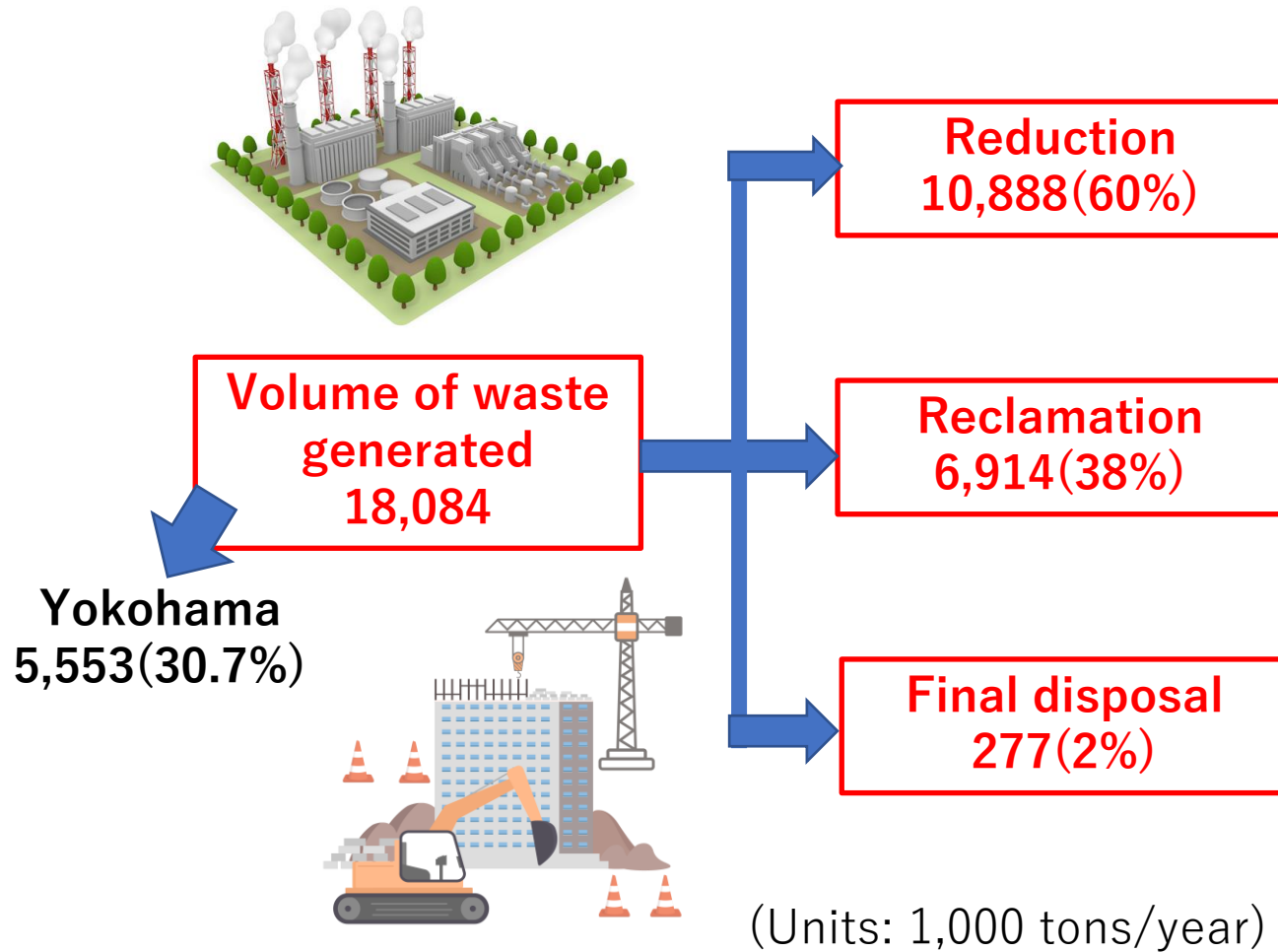
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Categorization of waste: Industrial waste

- [Waste Management Act \(1970\)](#) defined responsibility of waste-generating business operators to manage industrial waste.
- [Business operators are responsible for](#) properly managing waste, reducing waste through recycling and developing products that can be easily managed when they are processed as waste.
- [Six recycling regulations](#): Containers and Packaging Recycling Act, Home Appliance Recycling Act, Food Recycling Act, Construction Recycling Act, Automobile Recycling Act and Small Home Appliance Recycling Act.
- Containers and Packaging Recycling Act (1995) adopted [the concept of extended producer responsibility \(EPR\)](#) for the first time in Japan.

Industrial waste treatment flow in Kanagawa prefecture (2019)



Industrial waste by type of waste

Cooperation of private sector

KAWASAKI PET Bottle Recycling Plant

Recycling used PET bottle as raw material for recycled PET products.



J&T Recycling Corporation

Business description:

Total recycling business: industrial waste treatment, general waste treatment on commission, environmental measurement certification

Total logistics business: industrial waste collection and transportation, general waste collection and transportation, general freight transportation



Kawasaki PET Bottle Recycling Plant



(1) Debaler



(2) Revolving screen (trommel)



(3) Bottle crusher



(4) Flake washing equipment



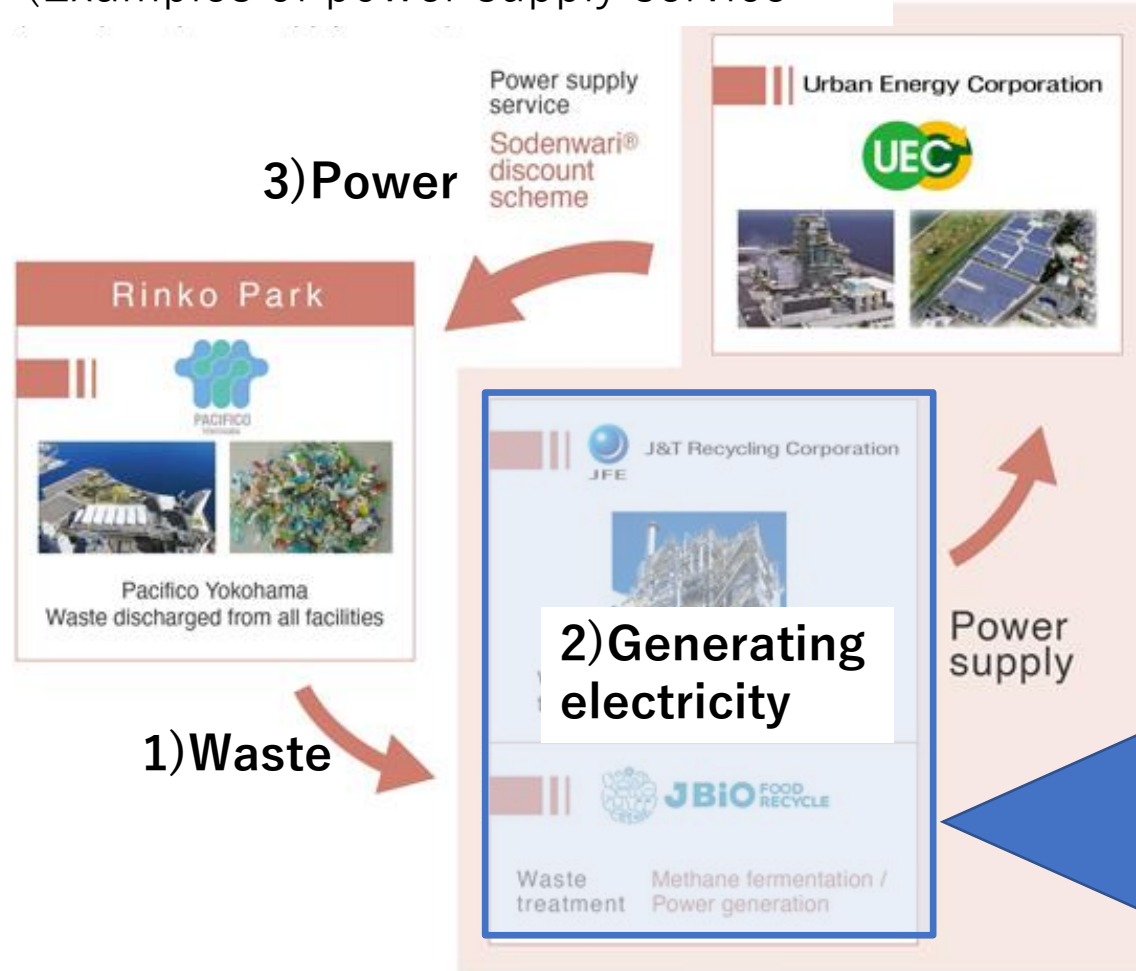
Examples of recycling products

Source: compiled from the website of J&T Recycling corporation

Cooperation of private sector

Incineration/Power generation

(Examples of power supply service)



J&T Recycling Corporation

Incinerator:

Kawasaki Eco Clean

Treatment capacity: 219.9t/day

Types of waste:

1) Industrial waste

oil, acid, alkali, sludge, plastics, paper, textile, rubber, metal, animal and plant residue, glass and ceramic

2) Specially-managed industrial waste

oil, sludge, alkali, medical waste



JBiO FOOD RECYCLE

J Bio Food Recycle Corporation

Food recycling
business through
biogasification



Cooperation of private sector



Takematsu Shoji Co., LTD

【Facility information】



Shin-Isogo recycle factory



Torihamam paper recycle factory



Ecocle Factory

Source: compiled from the website of Takematsu Shoji Co., Ltd.

【 Business 】

General waste collection

Industrial waste collection

Waste recycling, Paper recycling

Secondhand products business



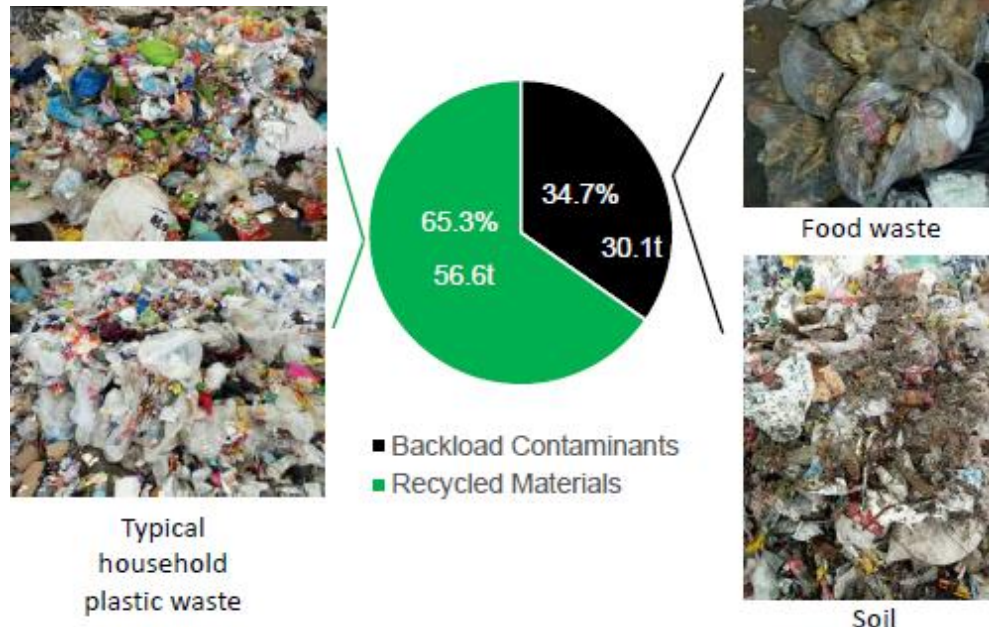
Workshops for upcycling

International cooperation: Recycling waste plastic as fuel and establishing circular economy

Source: compiled from the website of Yokohama City

- Construction of the waste plastic recycling plant in Consolacion City, Cebu. (2017)
- An ordinance enacted by Mandaue City to separate the collection of waste into four types (2018)

Mandaue City's quality of plastic waste
as of September 2018



GUUN Co. Ltd. Philippine Branch
Processing capacity: 50-75 tons/day

- **Expanded area for waste collection (Barangay) ※
10 (2018) ⇒ 27 (2019)**
※a small territorial and administrative district
- **Recycling ratio
65.3% (2018) ⇒ 85% (2019)**

International cooperation: Recycling waste plastic as fuel and establishing circular economy

Shift to sustainable waste management



Preventing flood



Mitigation of global warming

CO₂ reduction : **11,299 tonsCO₂/a**
≡ A-type heavy oil consumed
209 units of 20KI Truck lorry



Creating job opportunities, enhancing education



Company overview

- Foundation: 2001
- Number of employees:
104 in GUUN, including 31 in Philippine Branch
- Business line:
 - ① Production of “Fluff Fuel” from waste plastic
 - ② Production of wood chips for biomass fuel & Ind.
raw material from wood waste
 - ③ Waste management consultation

If you are interested in Yokohama's waste management,
the next step would be to visit Yokohama.
Please see how waste is actually managed and recycled.

Contact



info@yusa.yokohama





Thank you very much
for your attention