

Yokohama's Waste Management and International Technical Cooperation

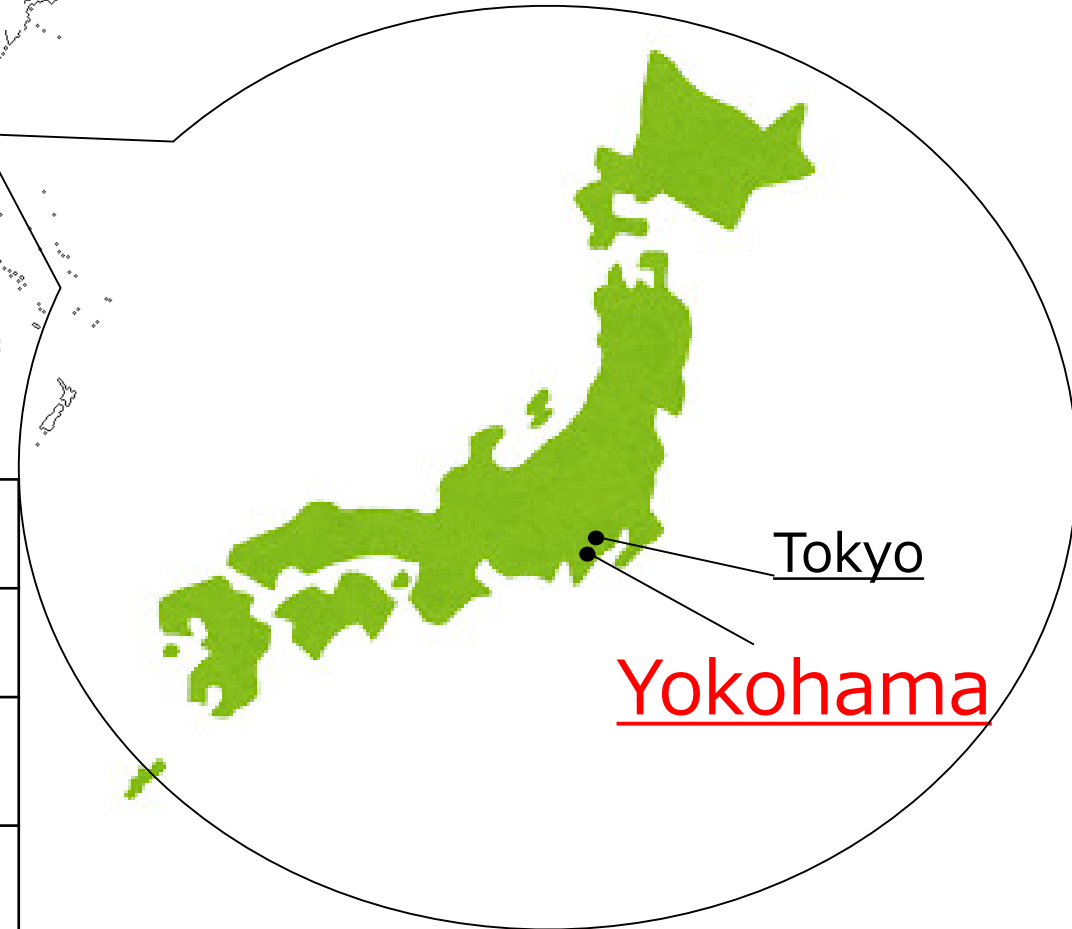
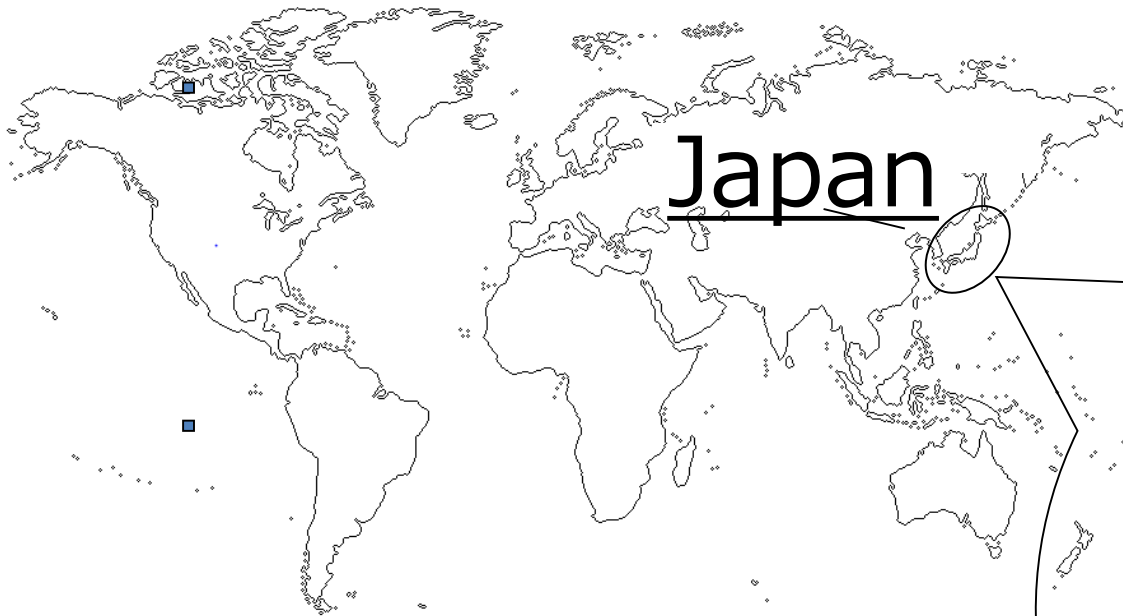
24th October, 2018

Rie KIMURA

**Director for Policy Coordination Division
Resources & Waste Recycling Bureau
City of Yokohama**

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Overview of Yokohama



Population	3.74 million
Area	435.3 km ²
Population density	8,590 persons/km ²
District	18 wards

(as of May 2018)

OUTLINE

1. *Training Program in Yokohama*

Sharing Yokohama's Experience

2. *City to City Collaboration*

- Da Nang City, Vietnam

- Cebu City, Philippines

Training Program in Yokohama



The First Training Program

- Participants thus far 20 officials from 15 countries
- The third Training Program February 2019



The Second Training Program



Yokohama's Expertise

- ✓ **Experience**
of Urban Problem Solving
- ✓ **Know-how**
of Waste Management Operations
- ✓ **Collaboration**
with both Citizens and Private Businesses





Yokohama's Expertise

Experience of Urban Problem Solving



Rapid Economic Growth



Affluent Life



Increase in traffic volume

Scenes from Yokohama (1970s)

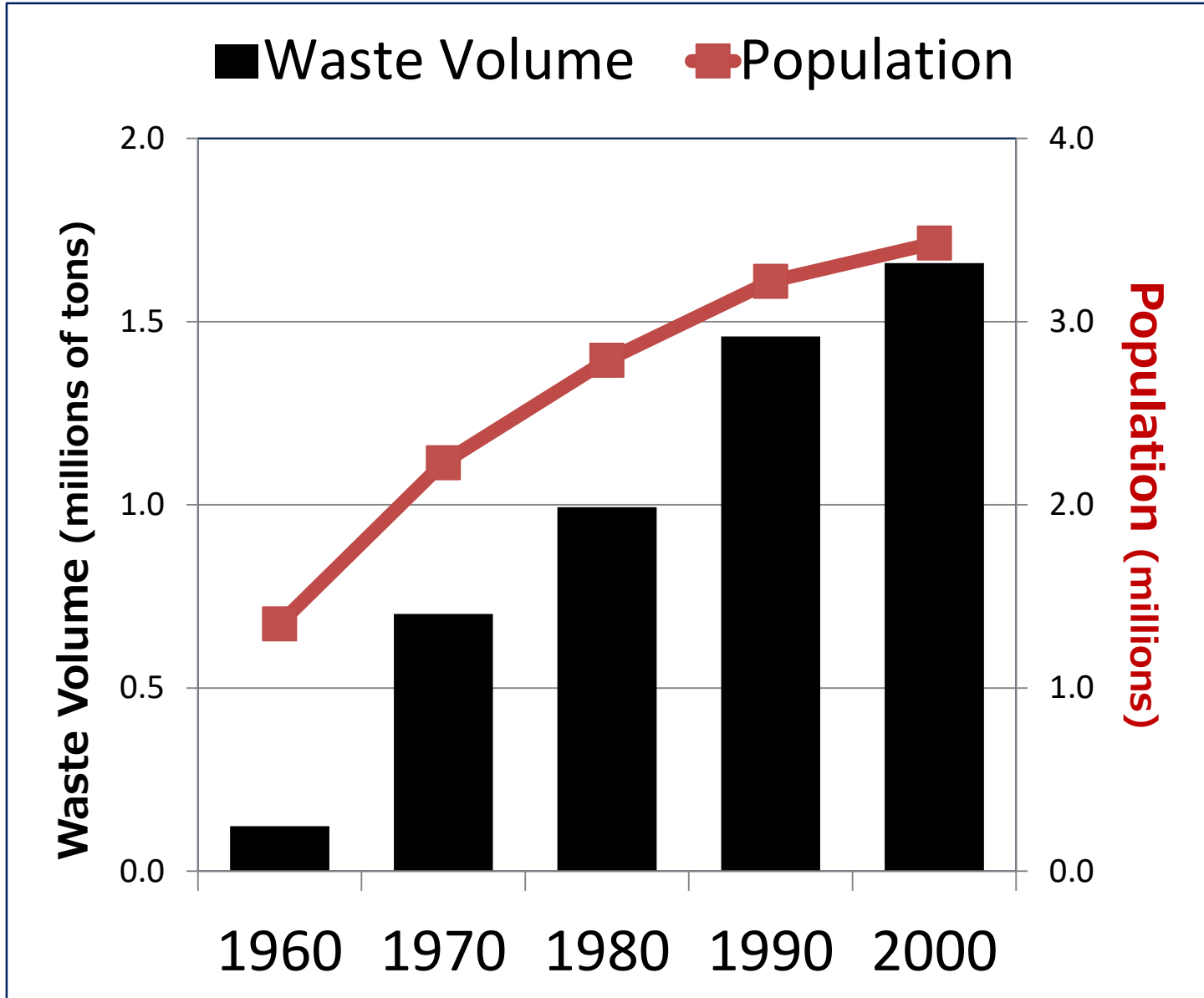


**Final Disposal Site
Overflowing with Waste**



**Increased Amount of
Large-Size Refuse**

Waste Volume and Population (1960s~2000s)

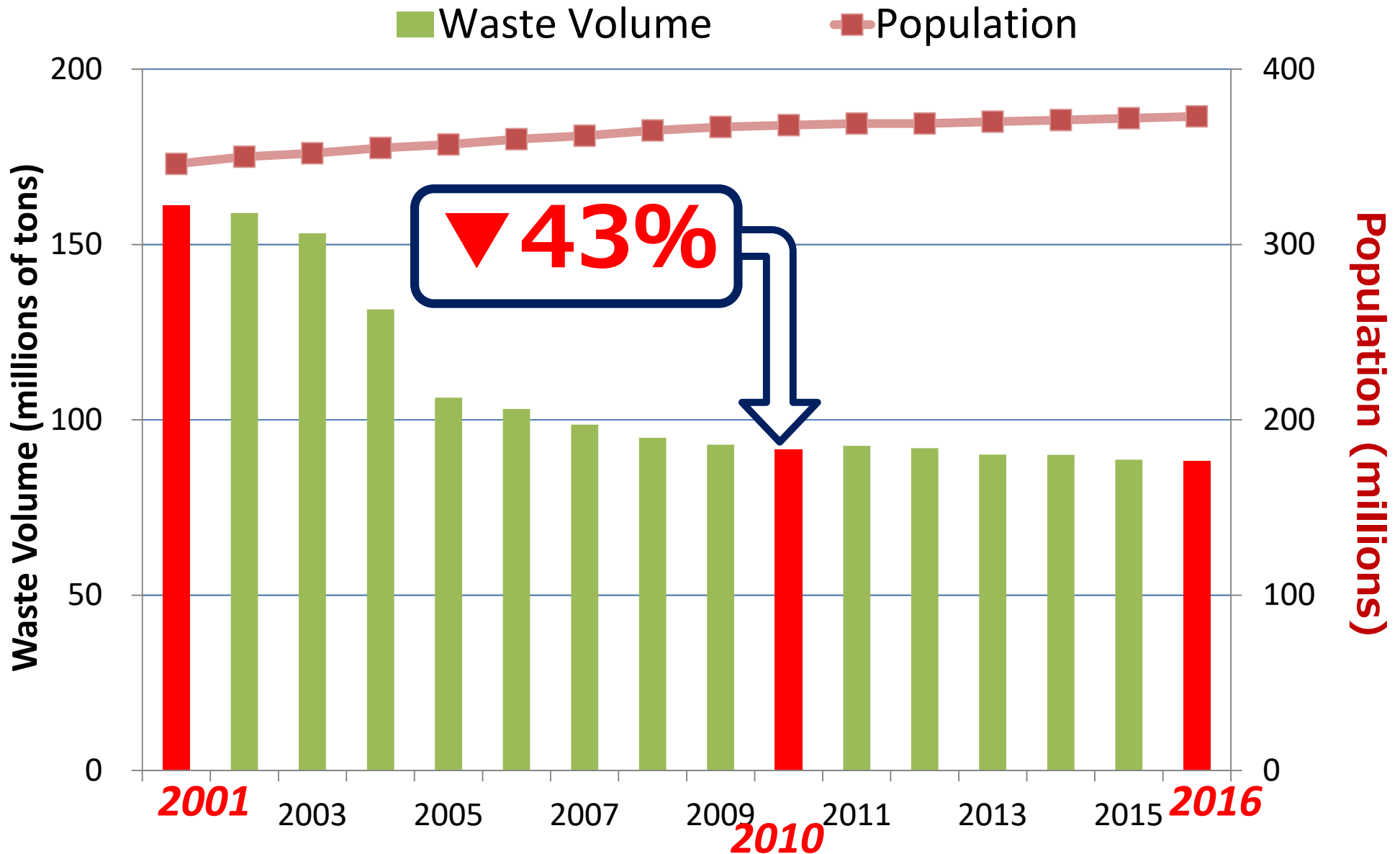


Over 40 years

Population:
× 2.5

Waste Volume:
× 16

Waste Volume and Population (2000s~)



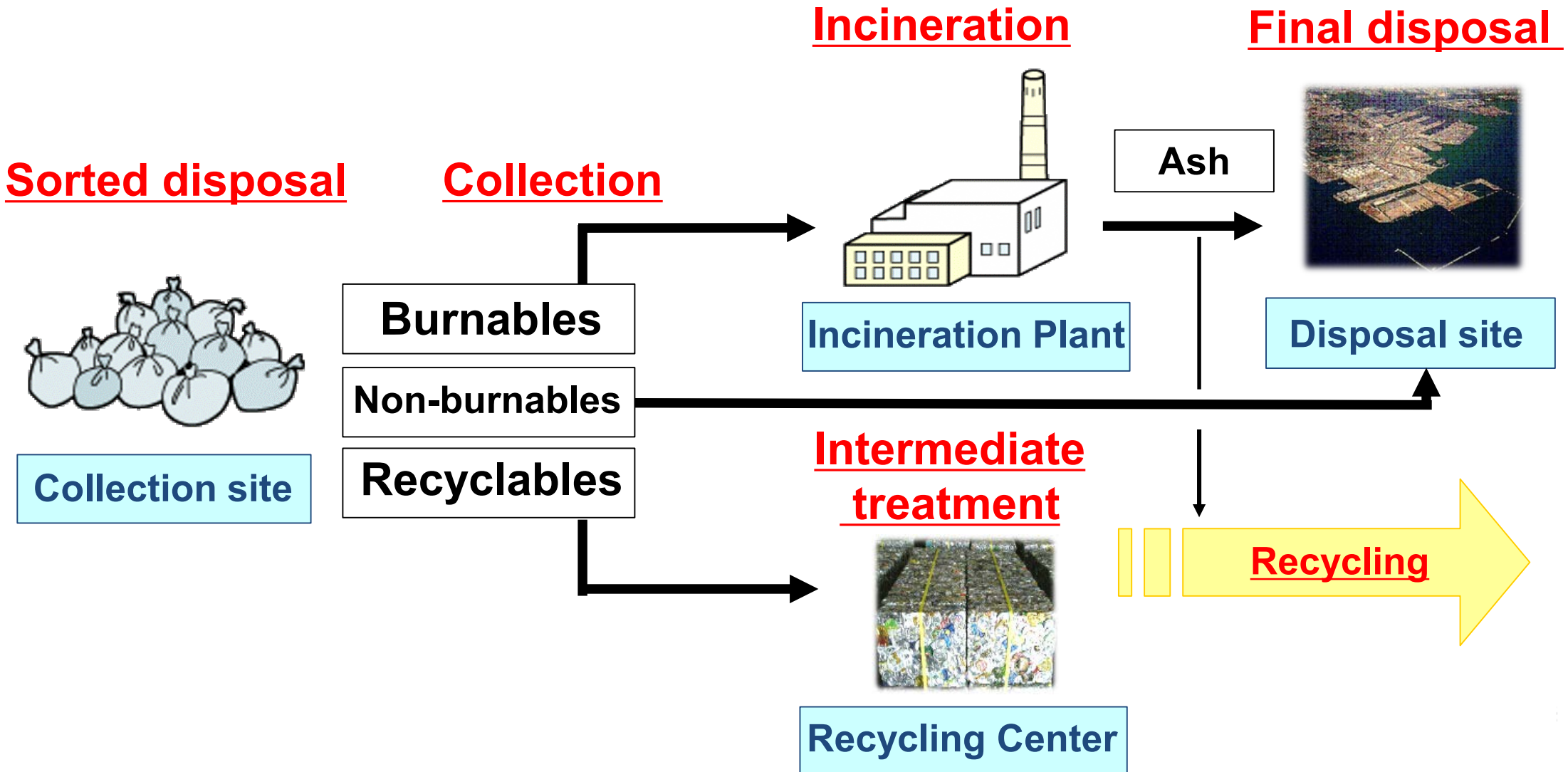


Yokohama's Expertise

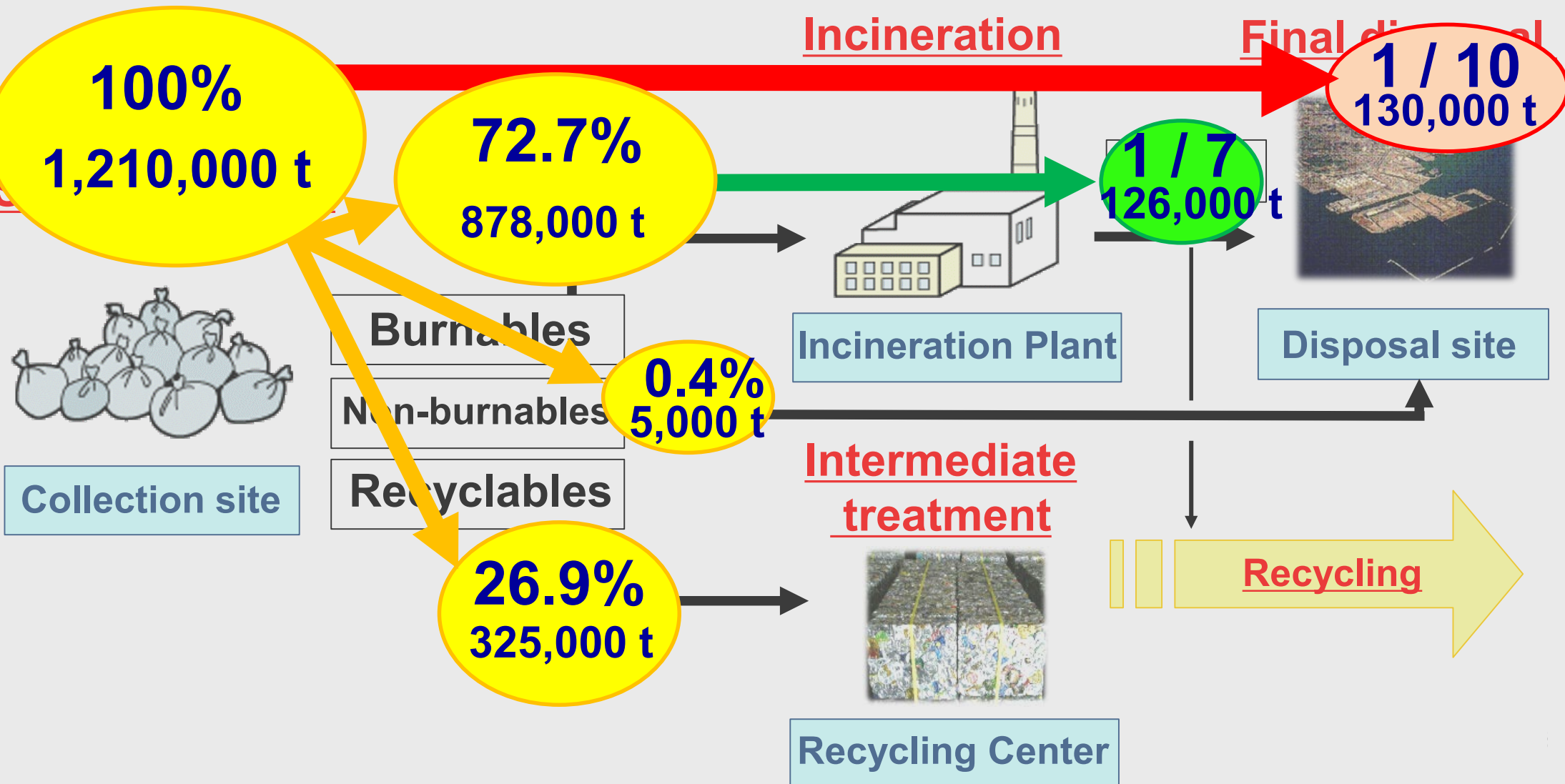
Know-how of Waste Management Operations



Flow of Waste & Resources



Reduction of Waste & Resources



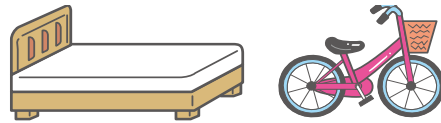
Sorted Disposal

Sorting Categories: 10 categories, 15 types

Burnables



Oversized waste



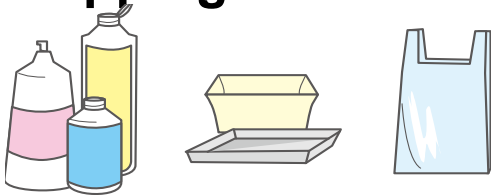
Cans, glass bottles, plastic bottles



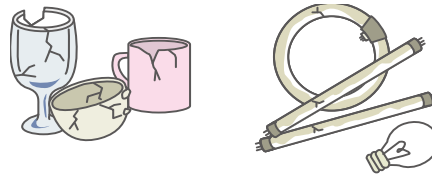
Small metal items



Plastic containers/wrapping



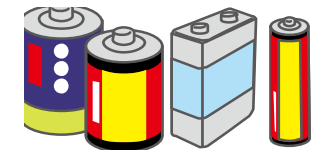
Non-burnables



Spray cans



Used batteries

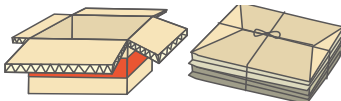


Paper

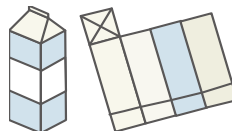
Newspapers



Cardboard



Cartons



Magazines/ other paper



Clothes/Fabrics



Collection Sites



74,000
Collection Sites



The First Training Program



The Second Training Program



Collection and Transportation



The First Training Program

The Collection Office in each of the 18 wards collects household waste

Garbage Trucks	900
Staff Members	1,000



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Average Garbage Truck (2 t)

Intermediate Treatment (Incineration)



The First Training Program



The Second Training Program

Kanazawa Plant

Year of Construction	2001
Capacity	1,200 tons/day
Power Generation	35,000 kW
Construction Cost	569million \$



Intermediate Treatment (Recycling)



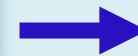
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Plastic Bottles



Fiber

Final Disposal



**Shinmeidai
Final Disposal Site**



**Minami-Honmoku
Final Disposal Site**



The First Training Program



The Second Training Program



Yokohama's Expertise

Collaboration

with both citizens and Private Businesses



Environmental Education



The Second Training Program



Educational Material on the Environment



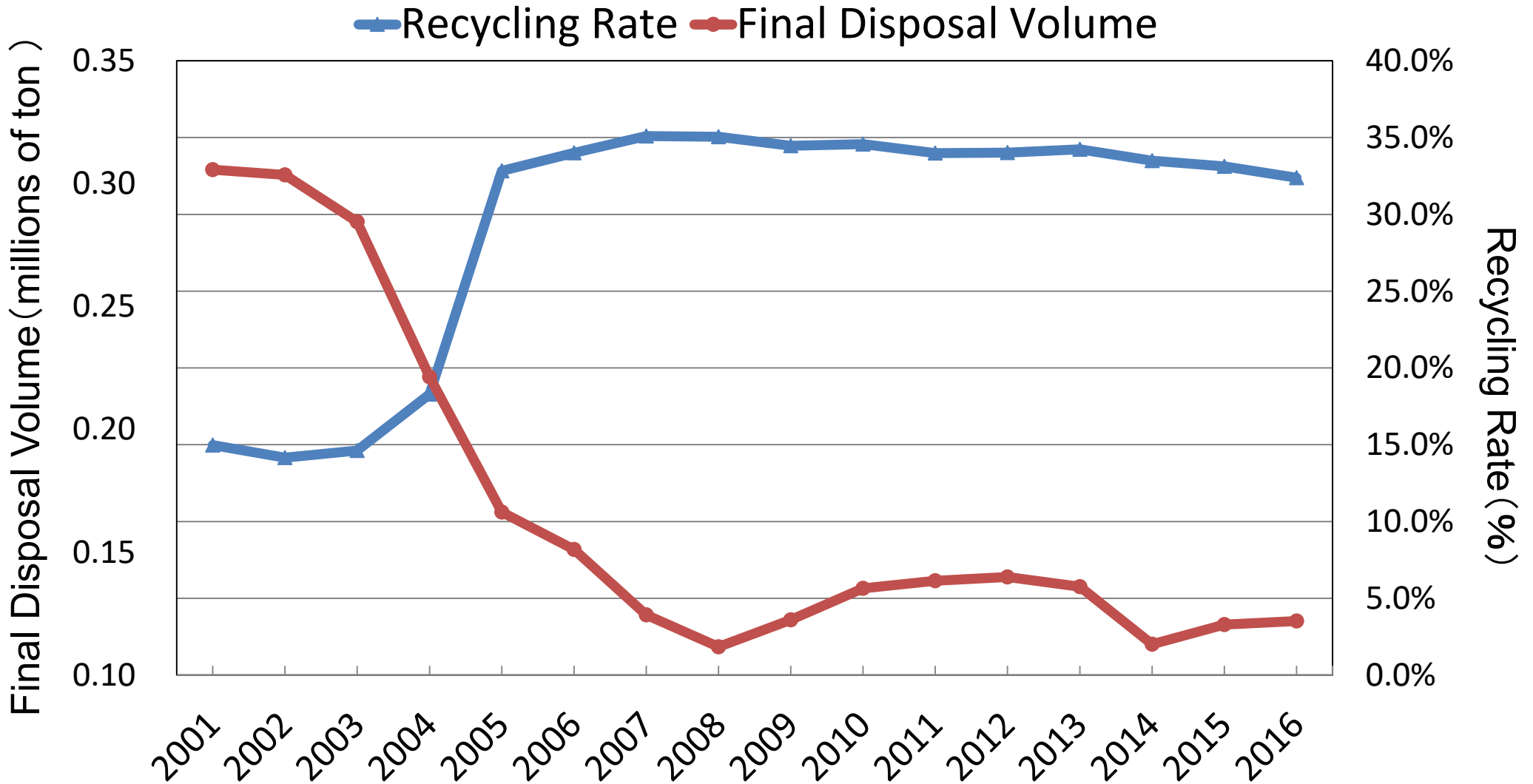
Waste Sorting Game

Recycling technology

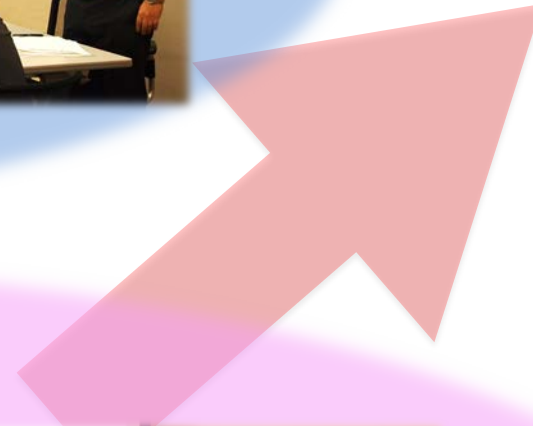


The First Training Program

Recycling Rate & Final Disposal Volume



Presentation of Action Plans



A Scene from the Plan Presentations

1. *Training Program in Yokohama*

Sharing Yokohama's Experience

2. **City to City Collaboration**

- *Da Nang City, Vietnam*

- *Cebu City, Philippines*

JICA Partnership Program: Solid Waste Management Project for Promoting segregation and recycling in Da Nang City

Period : March 2017 ~ March 2020

Output:

- 1) Develop action plans in targeted model areas
- 2) Improve citizen awareness of how to separate waste
- 3) Implement waste management and recycling systems



Activities under JICA Partnership Program



Training program in Yokohama



Inspection of facilities



Kickoff Meeting in Model Area



Bins for each recyclable



Survey by questionnaire



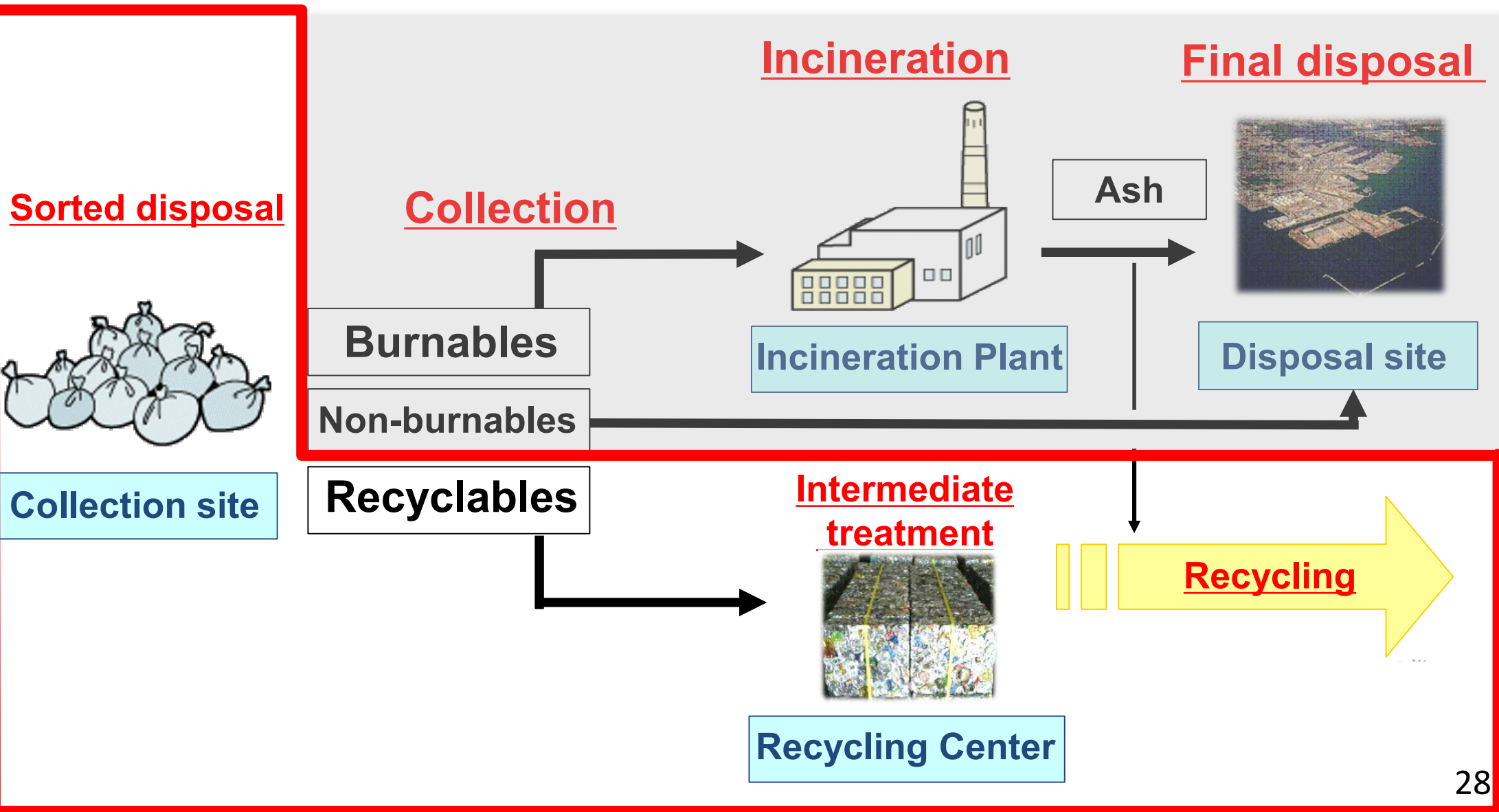
Waste Composition Survey



Waste sorting leaflet



Flow of Waste & Resources



Commercial plant for waste plastic recycling inaugurated in May 2017 by GUUN Co., Ltd.

Land Area : Appx. 6,600m²

Building Area : Appx. 2,400m²

Capacity : 50 tons/day (80 tons/day in Maximum)

Workers : 15 persons (at start)

Recycling Materials : Low-value Plastic (Bags, Package films, Styrene forms, Laminate papers, etc.)

Funding : JCM Scheme by Ministry of Environment, Japan

Start to Work : May, 2017



Yokohama's Cooperation with Cebu City

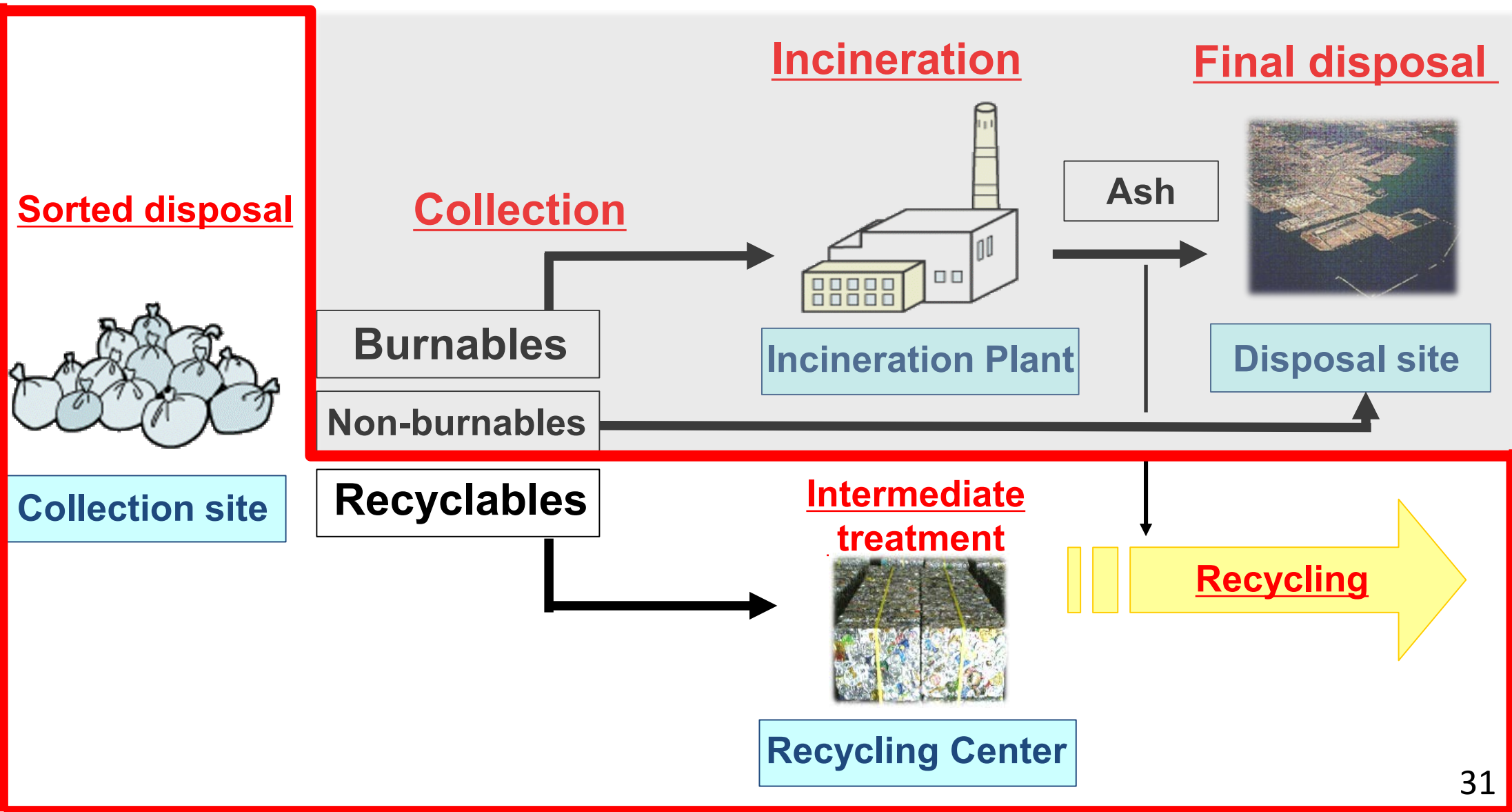


Inayawan landfill site, Cebu City

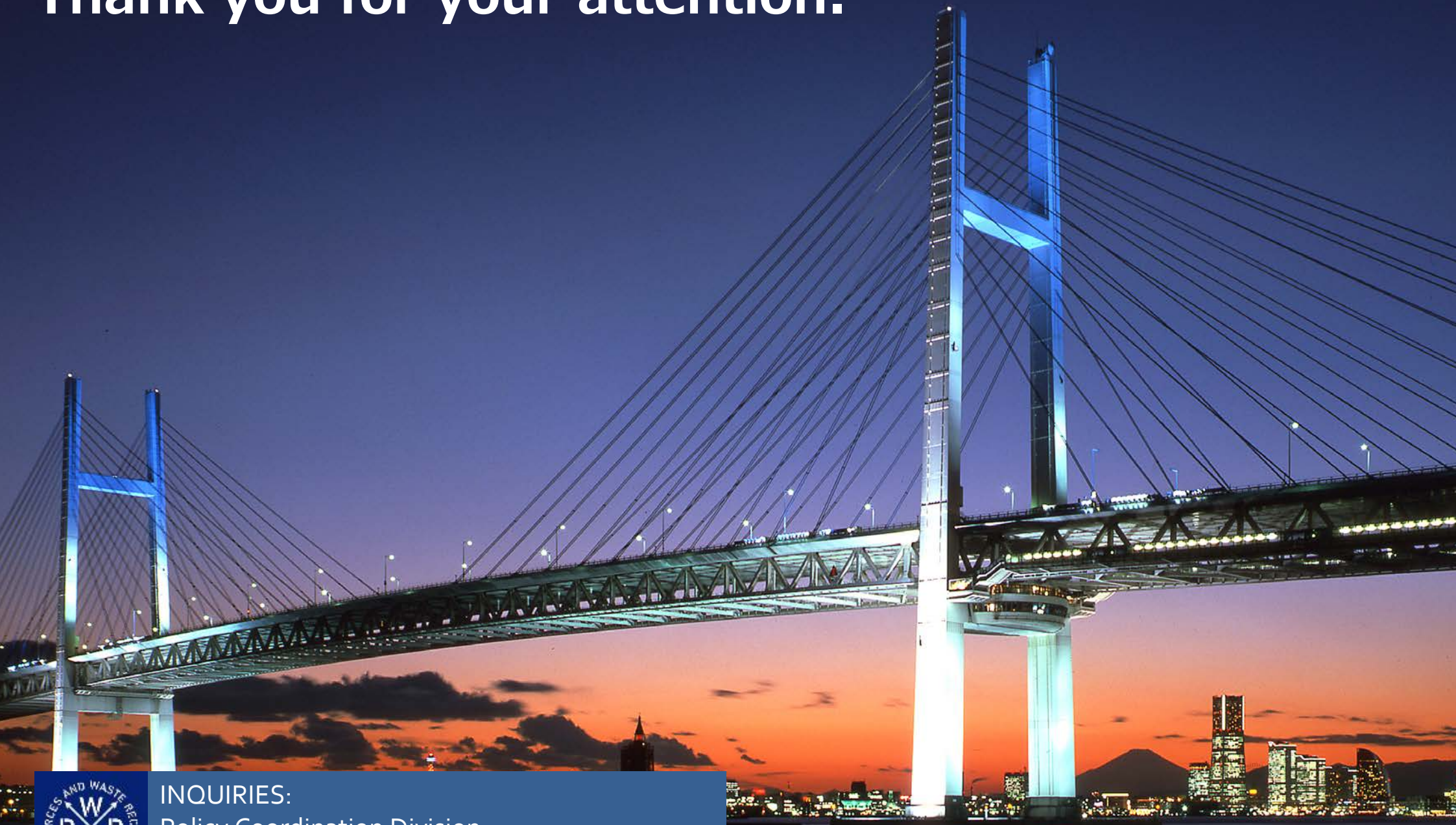
Commercial plant for waste plastic recycling
by GUUN Co., Ltd.



Flow of Waste & Resources



Thank you for your attention.



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