



# Towards Carbon Neutrality through city-to-city Collaboration

Environmental Mascots  
of Kitakyushu



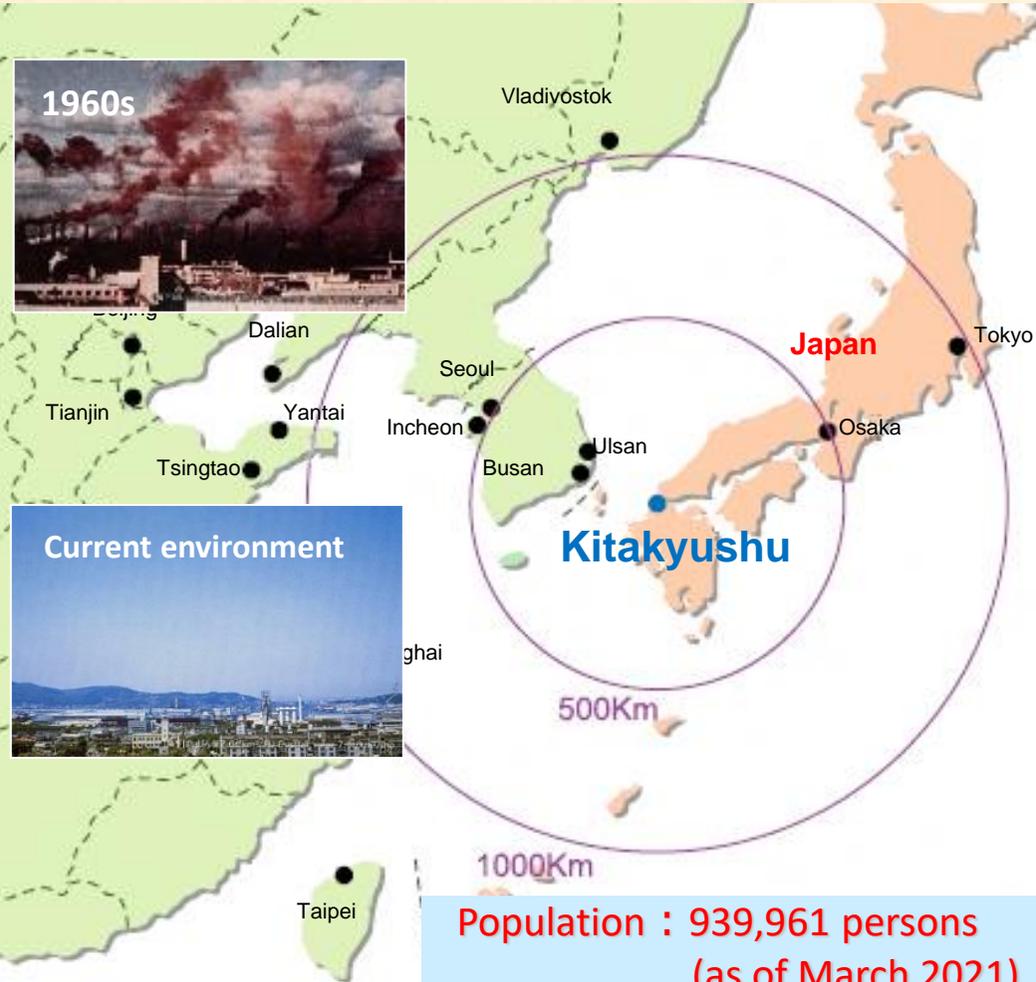
TEITAN & Black TEITAN



Feb 7 2024, City of Kitakyushu, JAPAN



# Introducing Kitakyushu City



**Population : 939,961 persons  
(as of March 2021)**

**Area : 491.95 Km<sup>2</sup>**

## Abundant nature and special local agricultural and marine products



Karst plateau and Hiraodai



Northern shore of Wakamatsu



Kokura Beef



Buzen sea oyster



Wakamatsu specialty tomato

## Representative Enterprises of Kitakyushu



Nippon Steel



Yaskawa Electric Corporation



TOTO



# Overcoming Environmental Pollution



1901



Imperial Steel Works

Developed as a steel industrial city

1950



1960

**Severe Problem**

**Blue Sea & Sky**

Present



## Pollution countermeasures with the trinity

**Initiatives taken by women's associations**



Creating documentary movies



Seminars with academicians

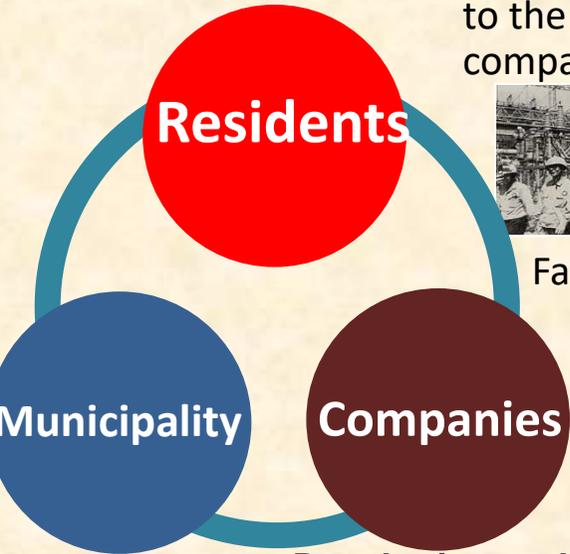


Environmental monitoring

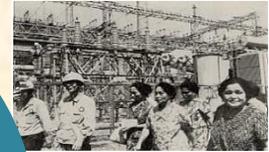
Establishing "Pollution Control Bureau" ahead of the country



Dredging of Dokai Bay



Writing postcards to the city and to companies



Factory tours

Developing and promoting environmental technology



Energy-saving production processes and pollution prevention facilities

pollution prevention agreements





# Experience in Environmental Technologies



## Cleaner Production (CP) Pollution Prevention (End of Pipe)

- CP**
- Evaluation and improvement of raw materials and fuel use
  - Improvement of production process
  - Thorough maintenance and management, training personnel, etc.
- ➔ **Reduction of pollutants, energy conservation, resource conservation**

End of Pipe



Electric dust collectors



Flue gas desulfurization equipment



Wastewater treatment

## Public-Private Partnership

## Recycling and Waste Management Kitakyushu Eco Town Project



Home appliances



Plastic bottles



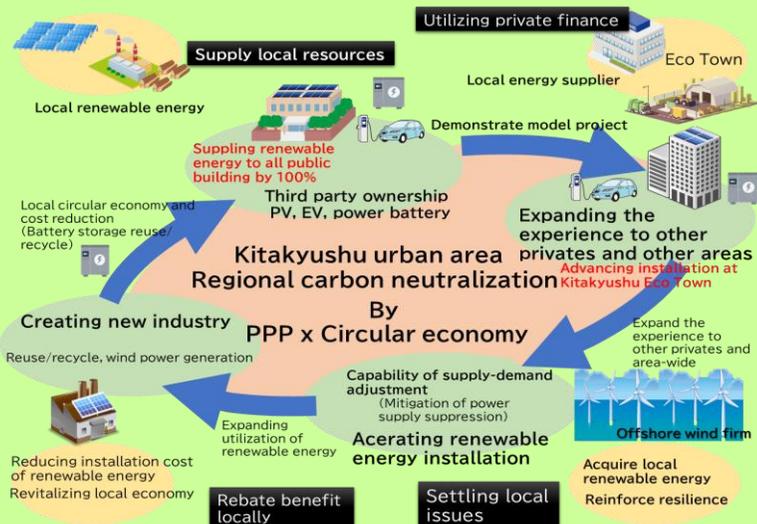
Cars



Office automation equipment

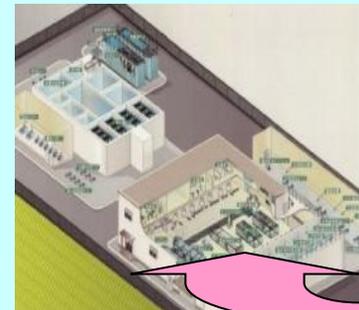
Japan's first and largest project to combine recycling and environmental industries

## Local Carbon Neutrality



## Water Business

**Water Plaza** : Plant demonstrating water recycling



Hiagari Sewage Treatment Plant

- Advanced desalination system
- Combines membrane treatment of sewage with seawater desalination





# Aiming for the Top Runner of SDGs



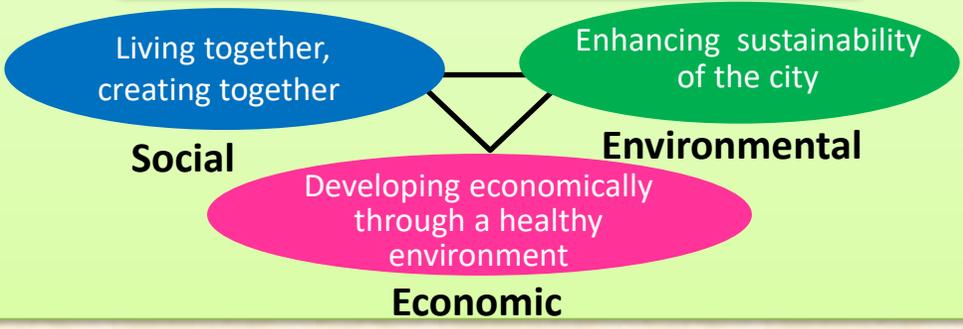
## Grand Design towards the Creation of a “World Capital of Sustainable Development” completed in 2004

**COMMITMENT OF THE RESIDENTS OF KITAKYUSHU TO ALL PEOPLE, THE EARTH AND FUTURE GENERATIONS, born after many discussions by citizen, NPOs, businesses, and administrations etc**



Period for development: 2 years  
Citizen's opinion: more than 1,000  
Holding of Citizens Forum: 2 times  
Examination meeting (34 members): General meeting 4 times, sectional meeting 10 times

**Basic Philosophy**  
Creation of a city with true wealth and prosperity, inherited by future generations



## Kitakyushu Basic Environmental Plan incorporating the SDGs (Nov. 2017)

Addressing various issues in Kitakyushu, Japan and the world from an environmental point of view



- Political goals
 - Basic objectives
 - Individual project measures



SDGs Future City Initiative by Gov. of Japan (Jun. 2018)



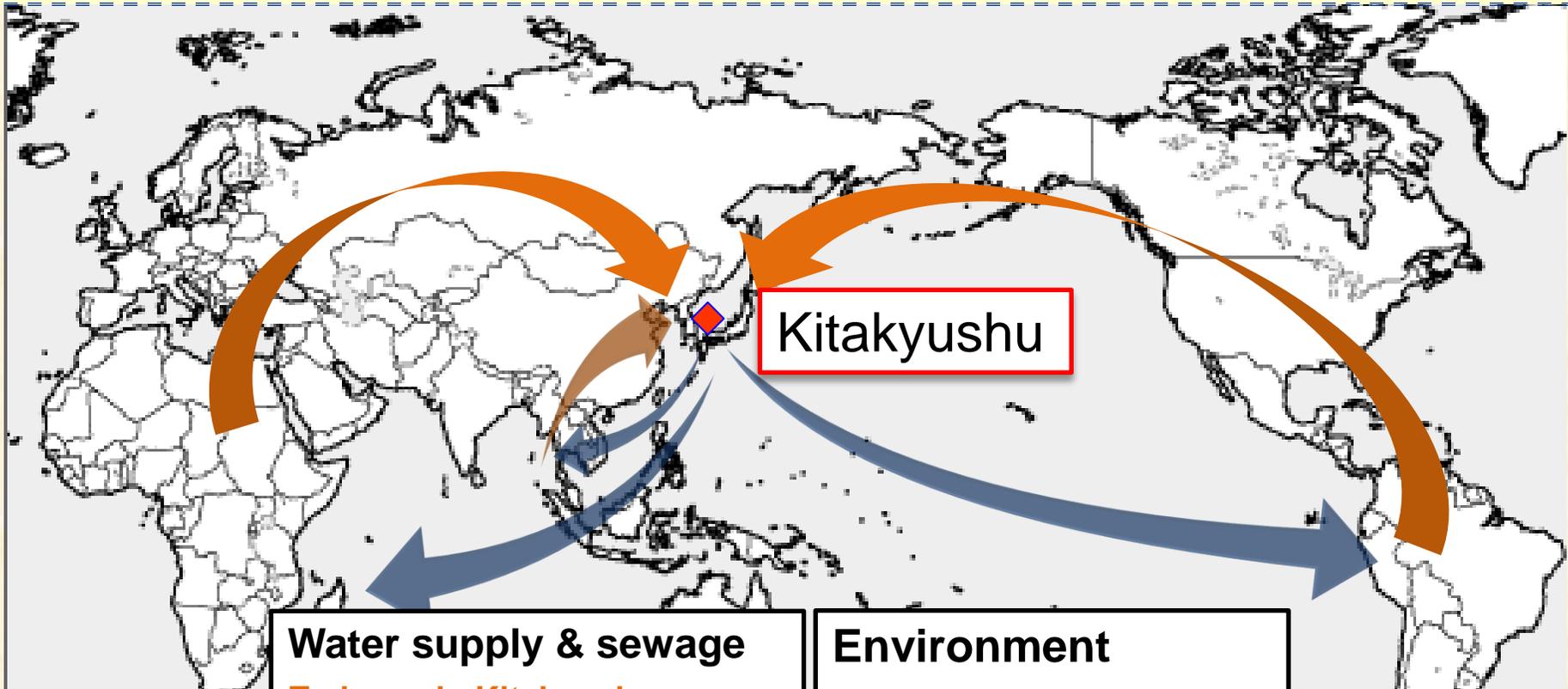
SDGs Pilot Model City for territorial approach by OECD (Apr. 2018)



# Providing Technology to Overcome Pollution to the World since 1980



Promoting **"international environmental cooperation" centered on human resource development** in order to utilize the environmental technology and know-how accumulated in Kitakyushu to improve the environment in developing countries.



## Water supply & sewage

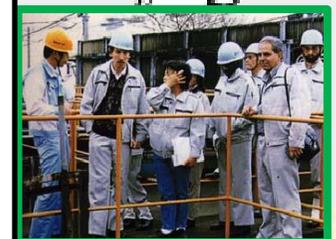
Trainees in Kitakyushu  
6,682 from 156 countries

Experts from Kitakyushu  
213 to 13 countries

## Environment

Trainees in Kitakyushu  
10,499 from 166 countries

Experts from Kitakyushu  
About 240 to 30 countries





# Kitakyushu Asia Center for Carbon Neutrality (Est. June 2010)



- Leverages environmental technologies developed in the experience of reducing pollution and the process of manufacturing
- Utilizes inter-city networks built through 40 years of international cooperation
- Consolidates the environmental technologies of Kitakyushu and Japan
- Helps local companies in Kitakyushu expand operations overseas and cities throughout Asia to become low-carbon societies by engaging **environmental businesses**

~ Three organizations collaborating to help environmental businesses expand worldwide ~



## City of Kitakyushu

Comprehensive, one-stop support for companies exporting environmental technology

President  
Hiroshi

Komiyama  
(former president of Tokyo Univ.)



International training and dispatch of experts to support the transfer of technology overseas

Promoting carbon neutrality throughout Asia”

Research on urban environmental issues and development of intercity networks



Kitakyushu International Techno-cooperative Association  
【KITA】 since 1980

Kitakyushu Urban Centre, Institute for Global Environmental Strategies  
【IGES】 since 1999



- ◆ 89 cities in 18 countries
- ◆ 267 projects
- ◆ Procured over 32 billion yen (as of the end of FY2022)



# Resource Recycling of Marine Plastic Waste in Thailand



Contributing to both tourism promotion and marine plastic countermeasures

**SEA Circular Initiatives**

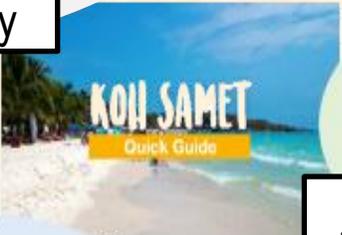
- Reduction of plastic products brought to the island
- PET to PET recycling by Coca-Cola



## Use & Consumption

- Build a self-sustainable circulation system of the island by utilizing recycled oil, charcoal, water, and salt manufactured on the island
- Promote island tourism by actively tackling plastic problems

Hotel owner, ferry company



## Collection

- Collect waste plastic, including marine litter
- Improve waste management

Strengthen cooperation on marine plastic management

Rayong Province

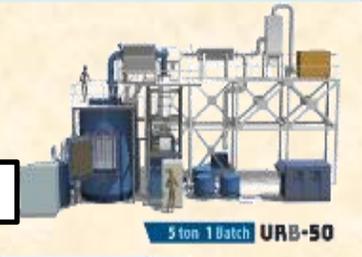
City-to-City

Collaboration



## Recycling System

- Convert system from plastics and organic waste to oil and charcoal, using superheated steam



One World Japan, Co. Ltd.

**Monitoring & Verification** **IGES** Institute for Global Environmental Strategies (補給)

**MOU with AEPW and UNEP**

- Build on the concept of plastic neutrality through recycling activities, and examine and develop methods for monitoring and verifying the amount of plastic treated



# Building a Decarbonized District Model in Haiphong (Industrial park, Sightseeing spot, etc.)



## Kitakyushu's know-how to expand decarbonized energy

Local consumption of locally produced energy

Utilization and recycling of storage batteries

Formulation of an action plan for green growth

Introduction of energy-saving and high-efficiency equipment



Joint Cooperation Plan toward Carbon Neutrality between Japan and Vietnam, Nov. 24, 2021

Customized and deployed

## Haiphong

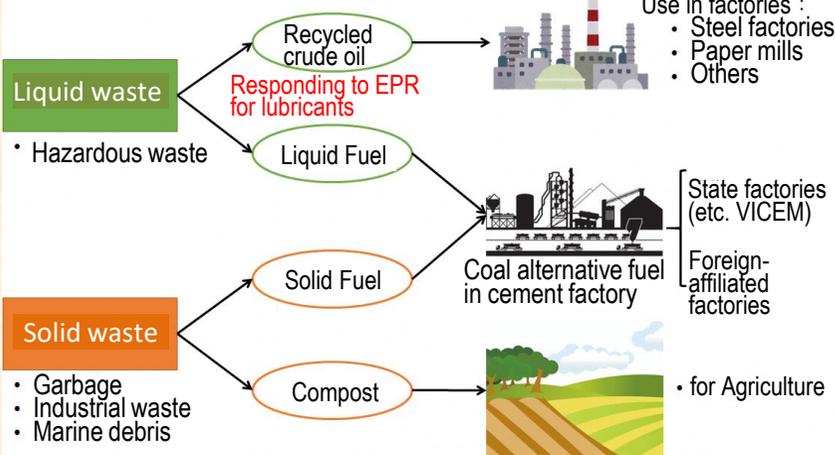
Introduction of solar power generation

Introduction of energy-saving manufacturing equipment

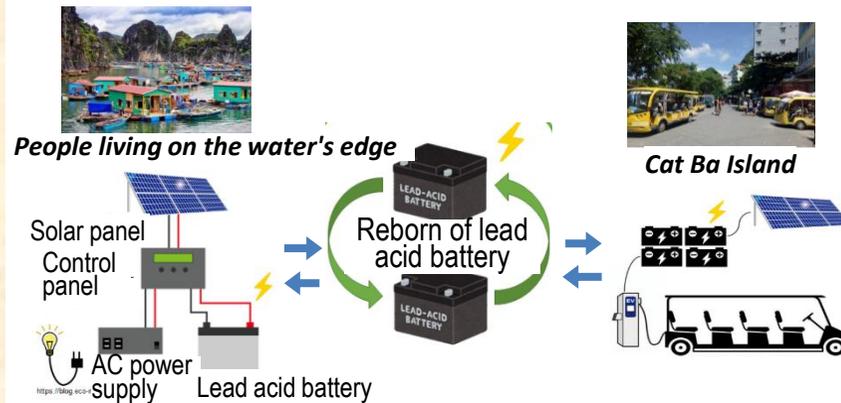
Utilizing unused energy

Sharing know-how for decarbonization

Ex.: Use of unused energy



Ex.: Utilization of renewable energy on Cat Ba Island



Expand all over Vietnam



# Peatland Fire Countermeasures Using Nature-friendly Technology



## “We Are Tomodachi” on Japanese Government official website in English

<https://www.japan.go.jp/tomodachi/2019/autumn-winter2019/wildfires.html>

Giant Kobe earthquake of 1995  
• Fire hydrant failure  
• No access for large firefighting trucks



Medium- and small-size industries, government, and academia in Kitakyushu collaborated to develop fire extinguishing agent using less water



Pursue the possibility of overseas expansion through international firefighting training, etc.



Field tests on peatland fires in Indonesia, then overseas



**Shabondama Soap Co., Ltd., soap-based firefighting foam “Miracle Foam”**



Firefighting technical training in Kitakyushu



Demonstration on Kalimantan Island

- Naturally sourced soap that does not use synthetic surfactants
- Less harmful to plant growth after fire extinguishing because of only binding with Ca and Mg
- Effective as a global water-saving measure because it can be used with less water



**CO<sub>2</sub> reduction by contributing to REDD+**



# Waste Treatment



## Waste separation and composting / Surabaya, Indonesia



Pollution at landfill site  
(Before project implementation)

Improve  
ment



Expert from Kitakyushu provides guidance on how to compost food waste



Compost used for greening communities



Green Sister City since 2017  
✧ Dr. (H.C.) Ir. TRI RISMALARINI, Minister of Social Affairs (left)



## Introduction of W-to-E facilities (2015–) / Davao, Philippines

Decision on Grant Aid by the Japanese Government in 2018



Pollution at landfill site

Ongoing



Trash scattered around the city



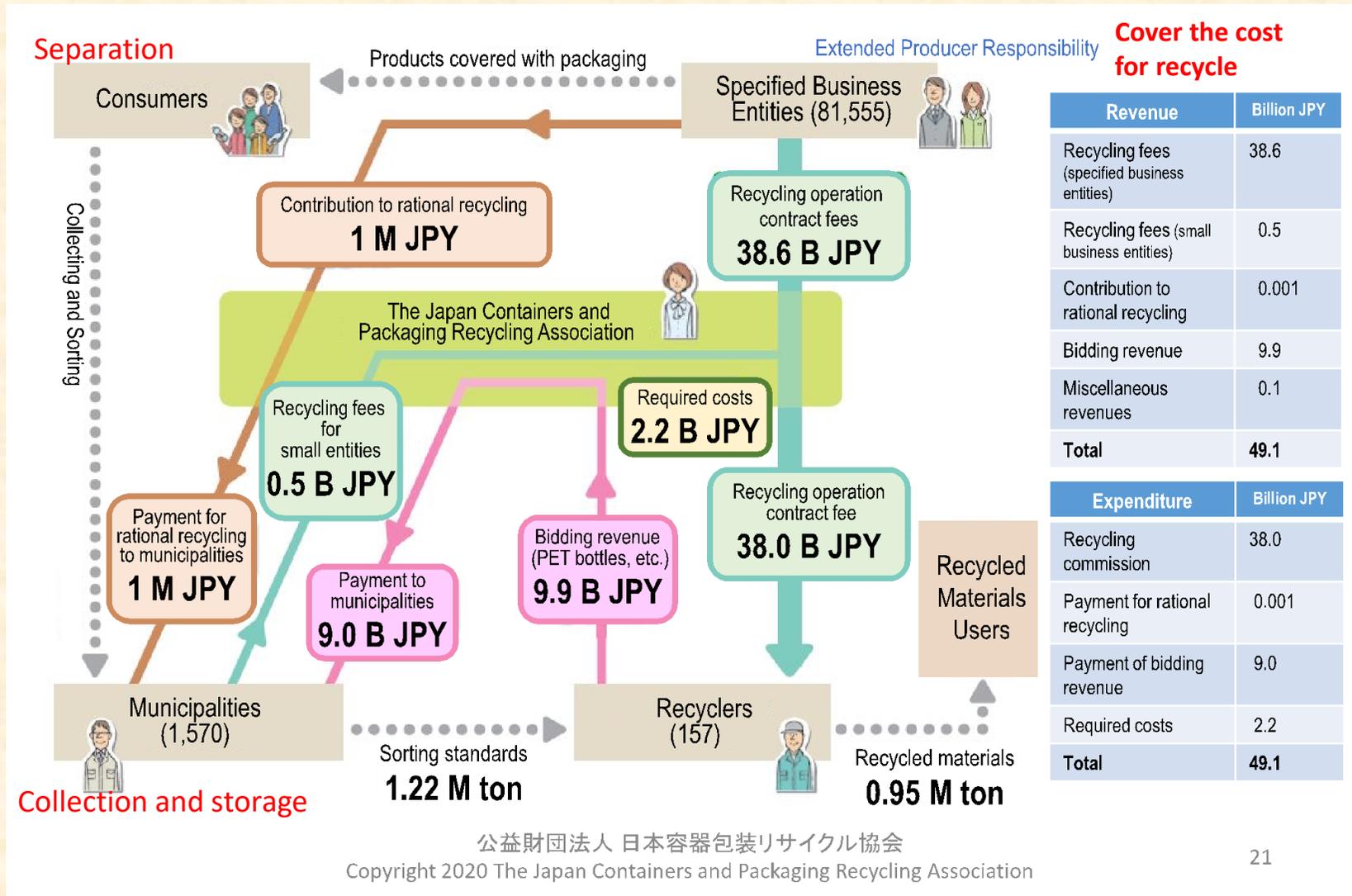
Artist's rendition of waste power generation facility



Green Sister City since 2017  
✧ Vice President of Philippine Sara Duterte (left)



# Waste containers and packages recycle system in Japan





# Cooperative Relationships with International Relevant Organizations



## Japan International Cooperation Agency



Comprehensive agreement to promote international strategies and cooperation for the development of eco-friendly cities, Feb. 2013

## UN Industrial Development Organization



Mutual cooperation for the purpose of achieving a low-carbon society, June 2010

## THE World Bank



THE WORLD BANK  
Tokyo  
Development  
Learning  
Center



City Partnership Program about "Green growth" and "Waste management", Mar. 2017

## Japan Bank for International Cooperation



Mutual cooperation related to climate change policy and water infrastructure, Dec. 2009

## UNEP (UN Environment Programme)



Cooperation to build a collaborative framework to bear on plastic pollution in Southeast Asia, Aug. 2019.

## Japan Overseas Infrastructure Investment Corporation for Transport & Urban Development



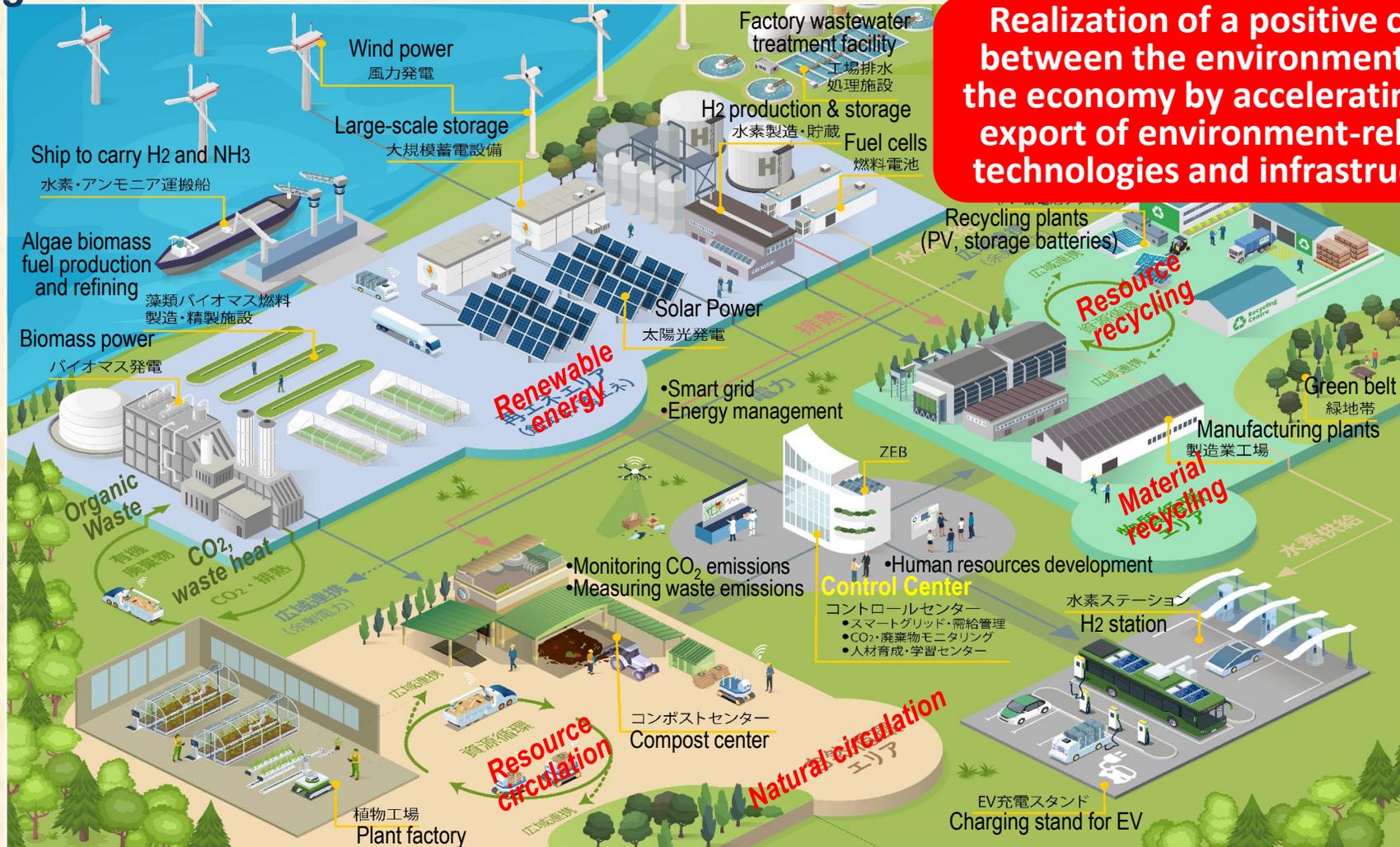
MOU of developing overseas business in the fields of urban areas such as waste management, clean energy, and water business, Jul. 2022



# Two "zeros" and economic growth toward 2050



## \* Image of Green Industrial Park



**Realization of a positive cycle between the environment and the economy by accelerating the export of environment-related technologies and infrastructure**

