

# *Zero Carbon City International Forum*

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## ***Kitakyushu's efforts leading a transition toward a sustainable Asia by a PPP model***

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The City of Kitakyushu supports the Sustainable Development Goals (SDGs).



Environment Bureau, City of Kitakyushu

# 1. History ~ Development featuring a balance between the environment and economy via the power of the local community



<1950s to present> Kitakyushu overcame pollution through the power of its local community and now contributes globally based on its experience (know-how)



1960s

“We Want Our Blue Skies Back”

movement by **residents (women’s associations)**



**Overcoming pollution** through collaboration among industry, government, academia and the public.



**Point!!**

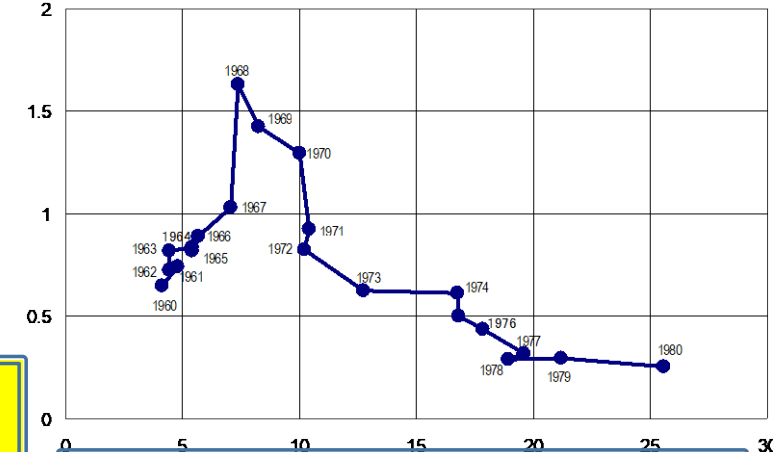
**International cooperation** with cities overseas using Kitakyushu's experience in overcoming pollution.

International recognition

○ **UNEP’s Global 500 award**

○ **UN Local Government Honours**

Environmental Pollution (mg-SO3/100 c m<sup>3</sup>/day)



**Balance between economic development while reducing environmental impacts**



# 3. Asian Center for Low Carbon Society

~Kitakyushu's hub for environmental business in Asia~



## 2010 Kitakyushu Asian Center for Low Carbon Society established

Center's aims ⇒ Respond to the needs of Asian cities

*“not simply to export technology, but to create green cities”*

**Collective strength as a top environmental city (City of Kitakyushu)**



**Experience overcoming pollution**



**Visionary social systems**  
(Kitakyushu Eco-Town, etc.)



**Superior environmental technologies**

**Respond to diverse needs of Asian cities and companies**

Eco-cities, smart cities, other

Made-to-order system  
**for export to cities**

Reduce greenhouse gases  
**through JCM**

Asian region as the location for the  
**creation of a base for demonstrations and the development of human resources**

**Hub for environmental business in Asia**

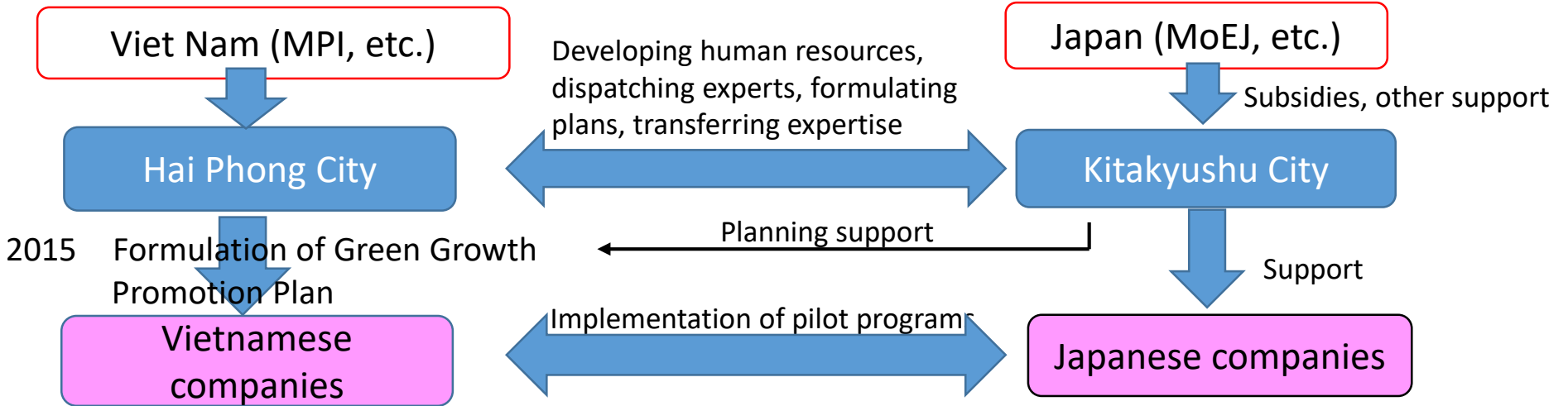
# 4. Case study : Hai Phong, Viet nam

## ~ Promotion of pilot projects based on the "Green Growth Promotion Plan"

- Kitakyushu provided support to Hai Phong in drawing up a Green Growth Promotion Plan based on the national Green Growth Strategy of the Vietnamese government.
- As indicated in the promotion plan, fifteen pilot projects are being implemented in seven areas, including waste management, energy, water supply and sewage, and transportation in collaboration between the cities of Hai Phong and Kitakyushu, as well as companies in Viet Nam and Japan.



2014 Signing sister city agreement



### Examples of pilot projects



Solar power generation



Electric bus



Treatment of wastewater with high concentrations of organic matter



Composting of organic waste



Development of eco-industrial parks in industrial estates

# 5. K-MRV

## ~ Visualizing the Degree of Contribution through the K-MRV Project ~



### ① City needs

#### ■ Key areas for technology export

- ① Energy management
- ② Water business
- ③ Recycling, waste management
- ④ Cleaner production and pollution control

Introduction of waste heat recovery power generation system at a cement plant  
Reduction of approximately 40,000 tons of CO<sub>2</sub> emissions annually



### ④ Quantify reductions in greenhouse gas emissions from low-carbon projects

#### Kitakyushu New Low-Carbon Measurement, Reporting and Verification Mechanism (K-MRV)

The amount of greenhouse gas emissions that can be reduced through the implementation of each project is measured through a certified system (K-MRV) by external experts, in order to **visualize the level of contribution.**

### ② Project formulation

- Investigate causes
- ↓
- Consider solutions
- ↓
- Survey industrial composition in surrounding area
- ↓
- Consider marketability
- ↓
- Review project methodology

### ③ Project implementation (Establish business)

# 6. Creating a Zero-Carbon City through a Virtuous Cycle for the Environment and Economy

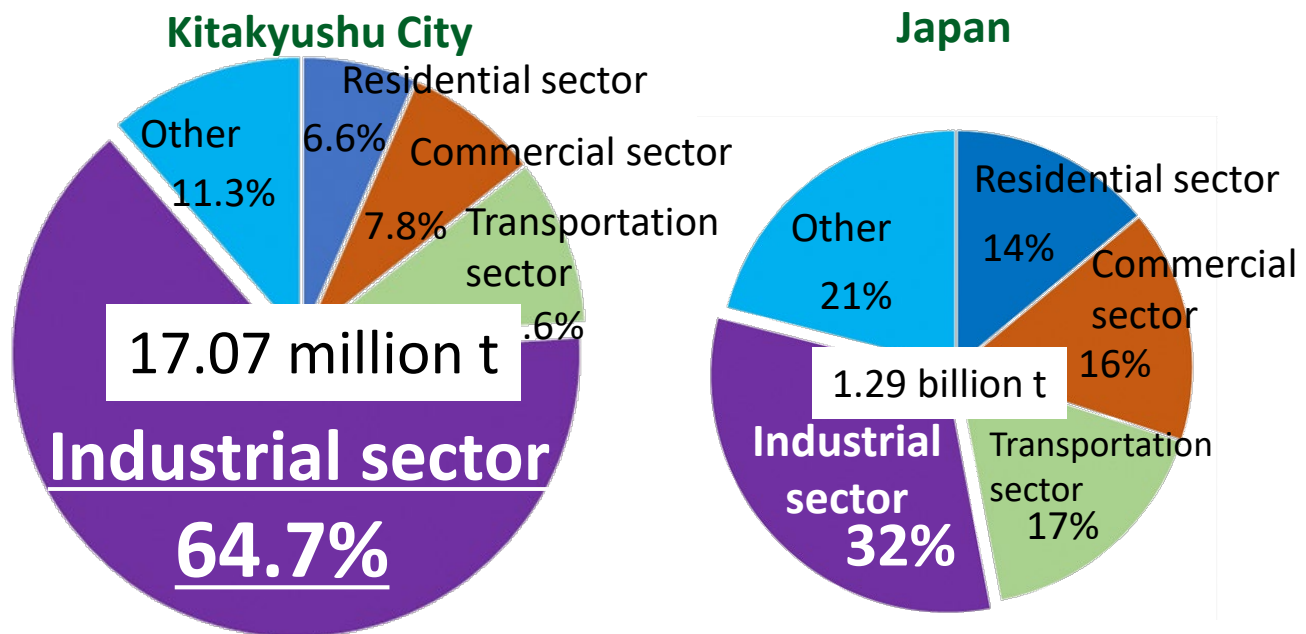


- The "realization of a decarbonized society" is a major challenge for the industrial city of Kitakyushu
- Responses to global warming will transform the industrial, economic and social structure, leading to significant growth



➔ **Creation of a "virtuous cycle for the environment and economy" in an industrial city = Aim to develop the "Kitakyushu Model" for deployment in Japan and overseas**

## GHG emissions (2017)



## 5 Pillars to Achieve Zero-Carbon

- I Decarbonize energy
- II Promote innovation
- III Transform lifestyles
- IV Develop resilient cities capable of adapting to climate change
- V Contribute to the global society

➔ **Formulate the Kitakyushu Green Growth Strategy (in 2021)**

**(1) Strategically secure decarbonized energy**

① Wind power	Maximize the use of the only base port in western Japan to develop a comprehensive base for wind-power related industries
② Storage batteries	Build an electricity storage system to supply renewable energy in a stable and efficient manner at low cost
③ Hydrogen	Establish a production and import base for CO <sub>2</sub> -free hydrogen using surplus wind power

**(2) Support the early achievement of innovations**  
Develop human resources in collaboration with industry, academia and the government and support corporate activities from a system and financial perspective in collaboration with the national government

Source: Created based on National Institute for Environmental Strategies website

# 7. Expanded Use of Renewable Energy Using the Kitakyushu Model for 100% Renewable Energy



What is the “Kitakyushu Model for 100% Renewable Energy”?

- Roadmap to expand the use of renewable energy in the city
- Step 1 to be achieved by **FY 2025**. Step 2 and 3 will follow to further expand the use of renewable energy

Step 1

【100% renewable electricity (supply of local renewable energy)】



Local renewable energy (including refuse plants)

Kitakyushu Power, other



Supply 100% renewable energy



City-owned facilities

Step 2

【Autonomous energy facilities (solar panels + storage batteries, third-party model)】

\*Phased introduction starting with facilities that can be installed



City-owned facilities Storage battery

Transform electricity service structure from **“ownership to use (owned by a third party)”**

By controlling storage batteries (i.e., storing electricity when electricity costs are low ⇔ using electricity stored in the battery when costs are high), surplus electricity generated inside facilities and at renewable energy power plants can be effectively used to reduce electricity costs.

Step 3

【Autonomous energy facility PLUS (Step 2 + energy-efficient equipment, third-party model)】

\*New construction and renovation of facilities



City-owned facilities Storage battery

Transform electricity service structure from **“ownership to use (owned by a third party)”**

Additional introduction of energy-efficient equipment in Step 2 to reduce energy consumption and minimize the consumption of renewable energy.



*Thank you for your kind attention.*

**Contact Kitakyushu for the key to  
your environmental problems.**

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