International Forum in Malaysia on “Future City” Initiative

Exporting “Future City” to Asian Cities

Kitakyushu Asian Center for Low Carbon Society
City of Kitakyushu
Kitakyushu developing as the Green Growth City

OECD Green City Program Model City (June, 2011)
Together with Paris, Chicago, and Stockholm!
Report on Green Growth in 4 Cities

Eco-Model City (July, 2008)

Future City (December, 2011)
Kitakyushu Model for Exporting Future City

- Kitakyushu is developing the Kitakyushu Model (support tool) that systematically arranges information on the technologies and know-how of Kitakyushu from its experience in overcoming pollution to its quest as an environmental city.
- This model is the support tool to develop sustainable master plans that integrates waste, energy, water and sewage services, and environmental protection.

Organization of the Kitakyushu Model

Kitakyushu's Story
- Overcoming pollution
- History as green city
- Background of the Kitakyushu Model

Sustainable urban development (Sustainability Framework)

- Waste Management
- Energy Management
- Water Management
- Pollution Management

① Understand situation
② Develop strategies
③ Develop specific policies
④ Verify & measure policies
⑤ Orders & financing
Export of “Future City” & Development of Master Plan

**<4th Step>**
Overseas business development

**Group of companies involved with the Green City Master Plan⇒Overseas business development!**

**<3rd Step>**
Development of Green City Master Plan

- **City of Surabaya (Indonesia)**
  - Requests to the following companies for development of the Green City Master Plan using funds from JICA and Ministry of Foreign Affairs
    - **Waste Management**
      - Nishihara Corporation, Amita Corporation, Hitachi Zosen Corporation, NTT Data Institute of Management Consulting, Inc.
    - **Energy**
    - **Water & Sewage Management**
      - Matsuo Sekkei, Kitakyushu Water & Sewer Bureau, TOTO, Ishikawa Engineering
    - **Transportation**
      - Almec VPI

- **City of Haiphong (Viet Nam)**
  - Signed sister city cooperation agreement in April 2014
  - Members of the Kitakyushu Overseas Water Business Association sign contracts for U-BCF improvement project
  - Implementation of project to support the development of the Haiphong Green Growth Action Plan in FY 2014 (MOE JCM project)

- **Thailand**
  - MoU signed between Kitakyushu and Thailand Ministry of Industry
  - Talks between Mayor of Kitakyushu and Chair of the Thailand Office of the National Economic and Social Development Board ⇒ Start of dialogue with Thailand
  - Implementation of survey for the project to support the development of an industrial town in Rayong Province, Thailand in FY 2014 (municipal expenditure)

- **Iskandar Development Region, Malaysia (Pasir Gudang City (MPPG))**
  - Implementation of feasibility study on the formation of a large-scale GHG emissions reduction project in the Iskandar Development Region of Malaysia in FY 2014 (MOE JCM project)

**<2nd Step>**
Formation of project proposals by sector

**<1st Step>**
Basic research
“Green Sister City” between Surabaya and Kitakyushu

International cooperation of composting household waste was started from 2004

- 30% reduction of waste
- Street decorated with flower
- Improvement of public environmental awareness

Building a relationship of trust

“Green Sister City” agreement was signed in November 2012 between Surabaya and Kitakyushu
With the introduction of an intermediate treatment facility for recycling of waste, Surabaya is promoting the recycling of valuables such as plastic and metals and the composting of organic waste in order to reduce the amount of waste sent to final landfill. These activities are carried out in cooperation with waste pickers who make a living collecting valuables from waste under often difficult labor conditions.

Nishihara Corporation

Compost center (100 t/day)

Selling Compost to fertilizer factory
Cogeneration (Combined Heat & Power) in Industrial Estates

Nippon Steel & Sumikin Engineering, Fuji Electric etc.
Overseas development of Kitakyushu Smart Community Project

Co-generation
70MW + 20t/h
Approx. JPY 8.5 billion

Peripheral technologies
- Energy-saving support systems
- Stable supply of electricity, etc.

Japanese companies, trading companies

PLN

SPC

Investment

Electricity

Sales of electricity

Electricity

Steam

Energy savings, etc

PGN

Gas

Electricity

Seattle Industrial estates

SIER

JICA
Preparatory survey
(PPP infrastructure projects)
F/S

JCM
JICA overseas loans and investments
Business development
Drinking Water Supply

Ishikawa Engineering

Refill water (inexpensive, good quality, delicious drinking water) to be sold through cooperatives (150) made up of local communities (women’s groups)

Cooperative Department

Local Consumer Cooperative (Women’s association)

Factories

Offices

Schools

Local subsidiary of Ishikawa Engineering in Indonesia

Consumers

- Reduced health risks
  (tap water is not generally fit to drink)
- Reduced waste for drinking water
Promotion of Water-saving Equipment

TOTO Ltd.

Studies carried out on CO$_2$ reduction effects through the introduction of water-saving equipment (toilets and showers) in Surabaya, etc.

Connection between water use and energy

- Air-in shower
- Ultra-water-saving toilet

Pump
Energy consumed in water supply

STP
Energy consumed to treat sewage

Purification center
Energy consumed to purify and supply water

Electricity consumed in water supply

Electricity consumed to purify and supply water
Hohkohsya Co., Ltd.: Manufacturing began in Thailand.

CCFLs used in liquid crystal panel backlights offer the energy savings of LEDs, produce less heat than LEDs, and light up wide areas like fluorescent lamps. Lower costs are achieved through the addition of Hohkohsya’s proprietary circuit board technology.

Aim at promoting low-energy lighting of hotels & office buildings in Surabaya.
Exporting “Future City” to Surabaya

Development of a green city master plan
Comprehensive urban development plan that incorporates the formation of a social system and the training of human resources in urban development

Reinforcing the foundation that is the source of growth
(local governmental strength, civic-mindedness, technological strength)

Waste treatment
Maintenance/improvement of sewage systems
Co-generation and energy saving
Purification of tap water

Studies on quantification techniques to reduce CO₂ emissions

Application of Kitakyushu Model
Kitakyushu City systematically arranges information on the technologies and know-how of Kitakyushu from its experience in overcoming pollution to its quest as an environmental city

Intercity Cooperation (Learning together/mutually enhancing & intensifying linkages/expanding cooperation)
Haiphong City aims at realizing actively “Green Port City”.

Haiphong City made “Green Growth Strategy Action Plan” (GGS・AP).

- Basic directions
- Roles of each administrative department

Application of Kitakyushu Model applying sustainable urban development know-how overseas

Support for Haiphong City Green Growth Promotion Plan

The Goal of Haiphong City

Green Port City

Leading other cities to Green Cities

Sister City Agreement between Kitakyushu and Haiphong concluded in April 2014
Promoting the Eco-Industrial Town Concept

This project is Thailand’s national project under the leadership of Ministry of Industry (MOI). Its theme is “symbiosis between industrial zone and community”

Changing “Map Ta Phut Industrial Complex” & “IRPC Industrial Zone” in Rayong Province into eco-friendly industrial complex

Repositioning industrial estates as Eco-Towns

Circulate resources and energy between tenant factories

Centralized management of utilities

Waste & sewage

Electricity & heat

Creating “smart” industrial estates

Cities can become even better because of factories (industrial estates)

- Zero emissions (no landfilling)
- Cleaner production

MOU among DIW, IRPC, & Kitakyushu (Dec. 2014)

IRPC Industrial Zone
Supporting Pasir Gudang to become a Smart City

Pasir Gudang City is located in the Iskandar Development Region which has developed since 1980s. This region is second largest industrial area to the Kuala Lumpur Region in Malaysia.

**Aiming for the Green & Healthy City**

1. **Green Industry**
   - Cleaner Production
   - Efficient energy management
   - Pollution prevention (wastewater/waste gas measures)
   - Recycle industrial waste
   - Manufacture eco-products

2. **Solid Waste Management**
   - Reduce urban waste (emission stages)
   - Promote recycling
   - Proper treatment of waste (waste-to-energy)
   - Secure final disposal sites
   - Illegal dumping prevention measures

3. **Carbon Sequestration**
   - Promote spread of public transport systems
   - Introduce low-emission vehicles
   - Energy-saving homes and offices
   - Introduce renewable energies
   - Climate change measures

4. **Green Community**
   - Urban greening
   - Protect the natural environment
   - Environmental education & learning
   - Practice eco-lifestyles
   - Develop monitoring systems

**Kitakyushu Model**

Offering solutions
In addition to international environmental cooperation, when it comes to international environmental business development, our hope is to see the advancement of a uniquely Japanese approach, different from that of other countries, that will respect and bring joy to local residents.

Asian cities
Mitigate pollution and improve quality of life while reducing CO$_2$

Kitakyushu
Rejuvenate communities through overseas environmental business development primarily by Kitakyushu companies.