Green Frontier
環境モデル都市 北九州市

EROPA Tokyo Conference 2013

Expansion of Environmental Business throughout Asia by Intercity Cooperation

Kitakyushu Asian Center for Low Carbon Society

Ⅰ Quest for a Leading Runner of an Environment-friendly City

City located near to other Asian nations, rich in nature, and developed as a manufacturing area

Population: 977,000 (2010)

Area: 487.88 Km^2

GDP: 3,430 billion yen (2010)

Rich nature and branded food materials

Karst Plateau Hiraodai

Wakamatsuhoku Beach

Ouma Bamboo Shoots

Kanmon Straits Octopuses

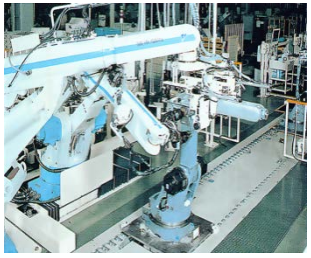
Kokura Beef

Buzen-Sea Oysters

Wakamatsu Special Tomatoes

Major companies in Kitakyushu area

Nippon Steel Corporation



Yasukawa Electric Corporation

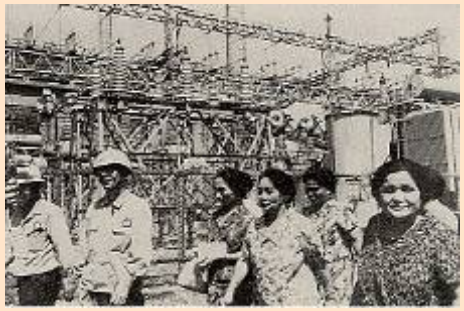
TOTO Ltd.

Mitsubishi Chemical Corporation

Toyota Motor Corporation · Nissan Motor Co., Ltd.

Mitsubishi Materials Corporation

Regional resources (Experience with overcoming pollution problems) (1)



Company visit by citizens

Citizens

Partnership

Government

Companies

Reinforcement of restrictions and supervision

Agreement to prevent pollution

Kitakyushu City with recovered environments

1960s

Present

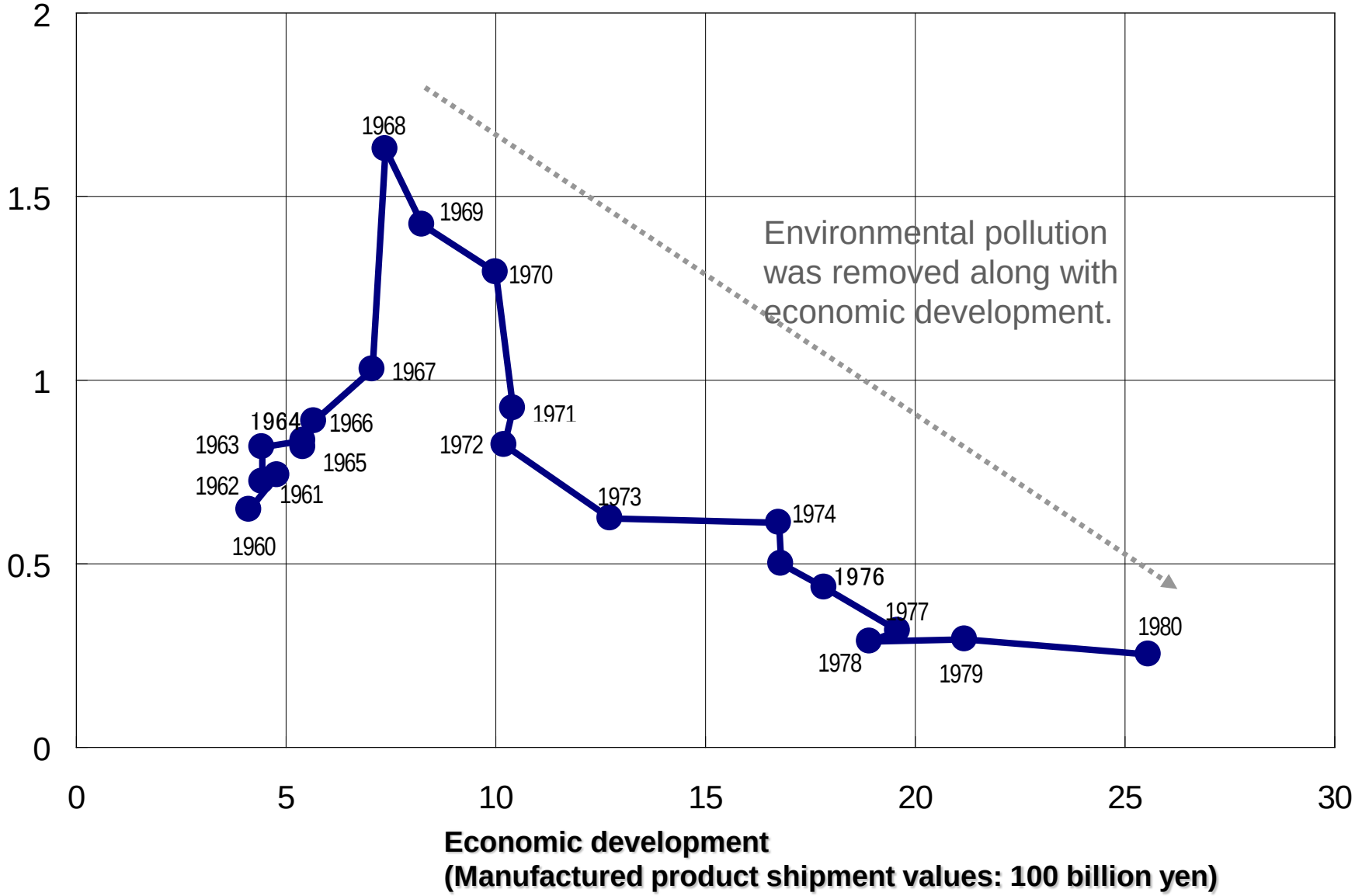
Solution of pollution problems is a starting point for international cooperation on environmental issues.

Transferring the experience of overcoming pollution problems so that developing nations need not repeat the same mistake

Balance of environmental policies and economic policies in Kitakyushu City

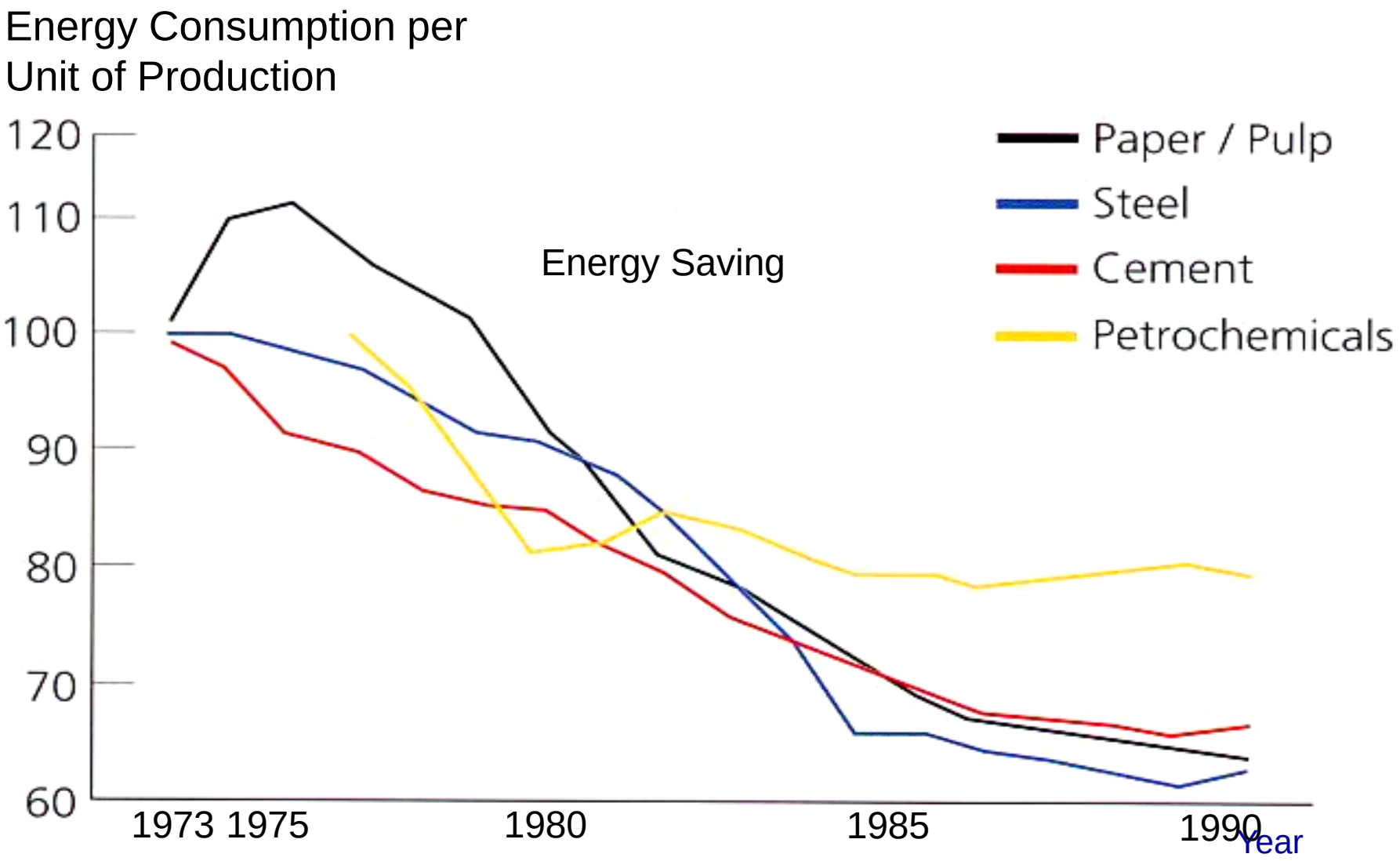
Environmental pollution (Sulfur oxides)
(mg-SO3/100 cm²/day)

Source: “Survey on the Japanese Experience” by the World Bank



Economic development
(Manufactured product shipment values: 100 billion yen)

Activities of Industrial Sector : Cleaner Production



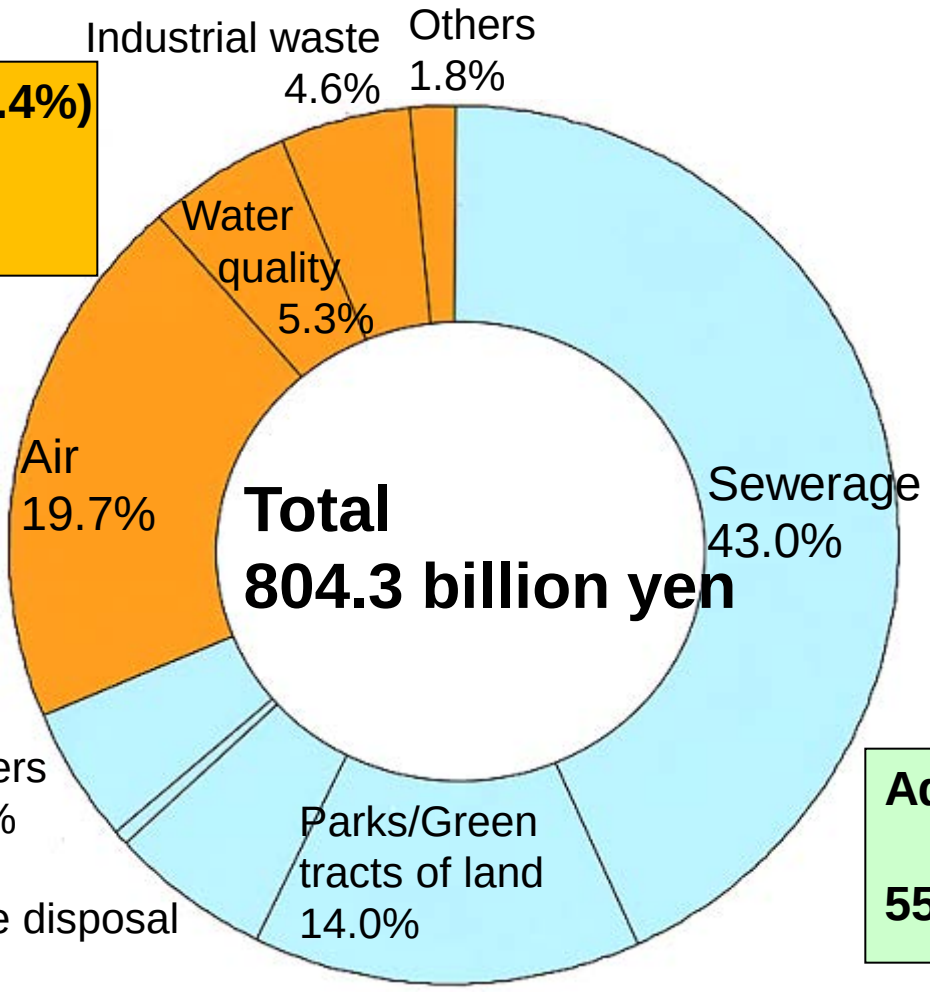
Saving Energy in Industrial Sector in Kitakyushu

Expenses spent by the City of Kitakyushu for measures against environmental pollution

(1972-1991)

Private Sector (31.4%)

252.6 billion yen



Administration (68.6%)

551.7 billion yen

Regional resources (Development of international cooperation on environmental issues) (2)

Partnership with other Asian nations for mutual prosperity

Accepted trainees: 7,059 persons from 146 nations; Dispatched specialists: 166 persons to 25 nations
Promotion of cooperation networking between Asian cities and environmental improvement projects

UN ESCAP Ministerial Conference on Environment and Development (2000)

Contribution to environmental improvements in Dalian, China
(Dalian City received the Global 500 Award in 2001.)

Exchanged memorandum for cooperation on eco-town with Tianjin City
(At the Prime Minister's official residence)

Water supply project at Phnom Penh

Air pollution survey in Mongolia

Driving forward the waste composting project with Surabaya City, Indonesia
(Adopted by over 20,000 families)

Regional resources (Excellent environmental technologies and social system) (3)

Electric Power Development Co., Ltd.
Coal gasification technology (EAGLE)

Mitsubishi Chemical Corporation
Thin organic photovoltaic panels

Yasukawa Electric Corporation
Energy-saving inverters

TOTO Ltd.
Solid oxide fuel cells (SOFC)

Kitakyushu Eco-Town

Automobile recycling

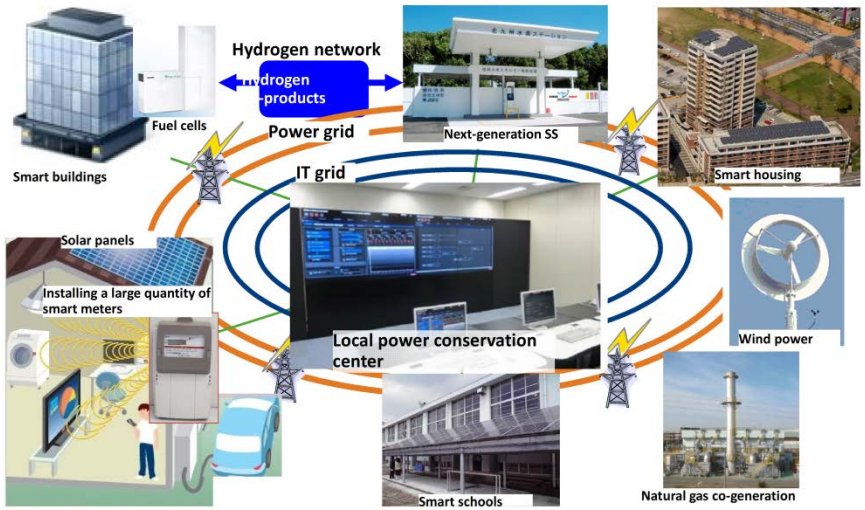
Home appliance recycling

Water Plaza Kitakyushu

Sewage water membrane treatment system

Seawater desalination system

Kitakyushu Smart Community Development Project



City of Kitakyushu's Environmental Policy ～Green Frontier～

1901

Government-run **Yawata Steel Works**

We have developed as an **Industrial City**

Industrial Wastewater

Exhaust Emission

1950

Aggravation of Pollution Problems

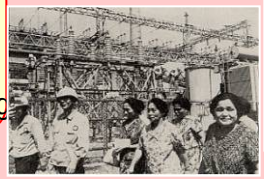
Women's Movement against Environmental Pollution

1960's

Pollution Control Policy

City Government
Organizational Arrangement, Ordinance, and Pollution Control Agreement with Companies

Private Enterprise
Cleaner Production
Improvement of Production Process
Treatment of Pollutant, Tree Planting



Overcoming Environmental Pollution

1980's

Establishment of "KITA" (1980)

KITA: Kitakyushu International Techno-cooperative Association

Local Diplomacy Policy

Environmental International Cooperation (1988～)

Agenda 21 Kitakyushu (1996)

Kitakyushu Eco-Town(1998)
Environmental Preservation and Industrial Promotion

Resource-Circulating Society Policy

Reduction of Domestic Waste by Introducing New System and Citizen Participation (First one at Designated Cities)

2002

Decision of Establishing PCB Treatment Facility (2001)

Johannesburg Summit (2002) identified **Kitakyushu Initiative for a Clean Environment**

Sustainable Society Policy

Grand design on **World Capital of Sustainable Development** (2004)

Implementation and Evaluation of Practical Activities

2008

Low Carbon Society Policy

Eco-Model City
Green Frontier plan(2009)

Green Growth Model City selected by OECD (2011)

Creation of Local and Global Sustainable Society

Ⅱ　Outline of Kitakyushu Asian Center for Low Carbon Society

Kitakyushu Asian Center for Low Carbon Society

Kitakyushu Asian Center for Low Carbon Society opened in June 2010.

Utilization of the environmental technologies developed through the solution of pollution problems and manufacturing processes, and the inter-city network established by international cooperation in the past

Accumulating environmental technologies in Kitakyushu City and throughout Japan, for building low carbon societies in Asia through environmental business skills

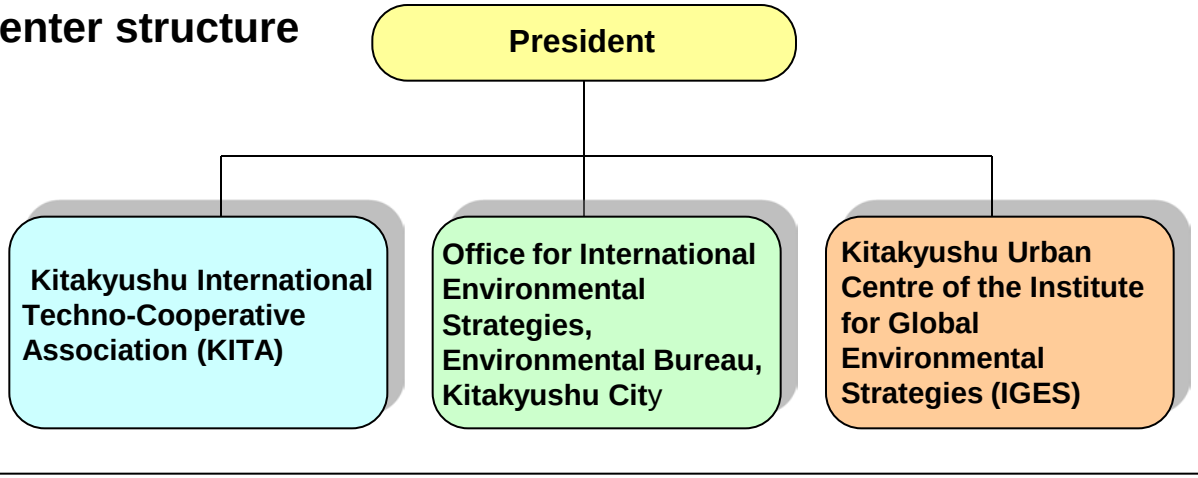
Organization and functions of the Center

President

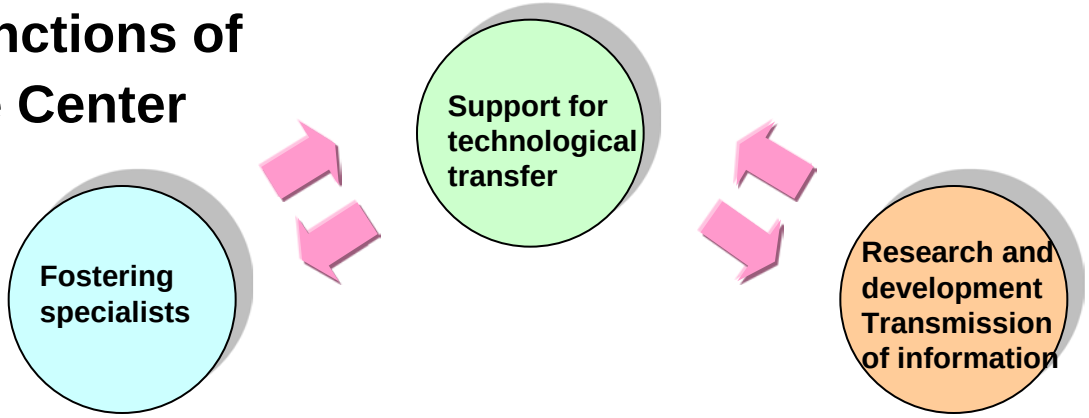
Hiroshi Komiyama
President
(Former President of the University of Tokyo)

Leading person on global environment issues

Center structure



Functions of the Center



Aims of the Center

Needs of newly developing countries:
Constructing green cities, not only transferring technologies

Total power as a leading runner of an environment-friendly city (Kitakyushu City)

Experience with overcoming pollution problems + **Advanced social system (Kitakyushu Eco-Town, etc.)** + **Excellent environmental technologies**

=

Responding to diversified needs of Asian cities and companies
Ex.: Eco-Cities and Smart Cities

Custom-made
Export of cities (towns)

Greenhouse gas reduction
Bilateral credits

Establishing a base Asian region
for demonstration experiments and human resource development

Base for environmental business in the Asian region

Promotion of major projects

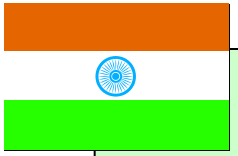
Aiming to establish a "City Export" model of infrastructure exports centering on environmental issues, which has been proposed by Japan, through the promotion of major projects in Indonesia, India, China, etc.

1. Indonesia (Surabaya City Project)

Surabaya is the second largest city in Indonesia, with a population of over 3 million.

Because the electricity supply is low in quality and not stable, it hinders industrialization of the city.

* Improving national industrial parks, etc. to create more smart facilities, and applying advanced systems for waste water treatment and waste treatment

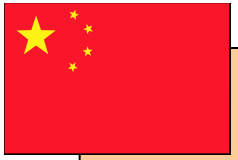


2. India (Driving forward of an industrial main-artery plan in Delhi and Mumbai)

Gujarat State (Surat City and Dahej District) is one of the representative industrial regions in India.

Expecting not only introducing excellent environmental technologies from Japan, but also establishing an environmentally conscious city

* Supporting eco-town constructions (Surat City) and participating in smart community projects (Dahej District)



3. China (Conclusion of MOU with Beijing Environment Exchange, cooperation in construction of Dalian Eco-Town)

Dalian City is one of the representative eco-friendly cities in China.

Dalian City is aiming to become an eco-city by preparing residential zones that are beyond the framework of a mere housing complex focusing on recycling.

* Support for the preparation of the eco-town plan and participation of Japanese companies in individual recycling businesses, etc.

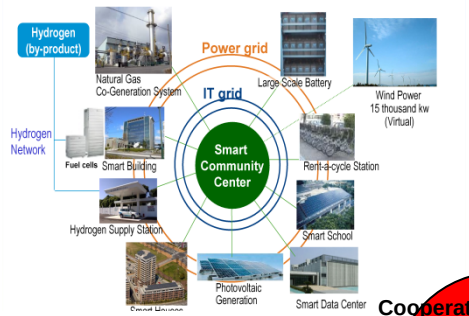
Priority fields in technological transfer

Energy management

Regional management of energy by placing city and regional electricity plants at the core

Yahata Higashida District, where an environmentally conscious town is under construction

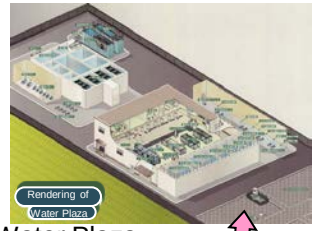
Kitakyushu Smart Community Project (Higashida Area)



Kitakyushu Smart Community

Water business

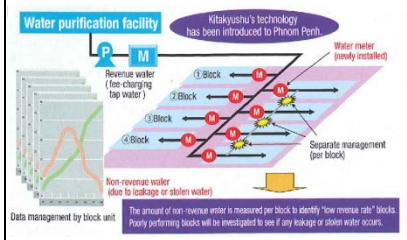
Water recycling demonstration plant combining sewage water membrane treatment and seawater desalination



Water Plaza

Water created from sewage: 1,000 m³/day
Water created from seawater: 400 m³/day

How to maintain and manage a water distribution network



Non-revenue water rate is improved.
72% (1993) → 8% (2006)

Cooperation between government and the private sector
Transferring
a package on environmental technologies and social systems

Recycling and waste treatment

Kitakyushu Eco-Town

Economic effects (25 projects):
* Direct investment: approx. 60 billion yen
* Generated employment: approx. 1,300 jobs
CO_2 reduction: approx. 200,000 tons/year

Home appliance recycling

Bicycle recycling

Most advanced facilities for waste treatment
Shaft-gasification furnace

Shin-Moji Plant
Safe facilities that achieved recycling of waste and effective utilization of heat energy

Cleaner production and prevention of pollution

Introduction of cleaner production (CP)

* Evaluation and improvement of raw material and fuel use
* Improvement of manufacturing processes
* Thorough implementation of maintenance and management
* Human resources development, etc.

Achievement of energy saving and resource saving
Reduction of environmental loads + Higher productivity

End-of-Pipe (EOP) measures

Electric dust collector

Flue-gas desulfurization facilities

Waste water treatment facilities

"Green Asia International Strategy CSZ"

(including Kitakyushu City, Fukuoka Prefecture and Fukuoka City)

We aim at growing with Asian countries, utilizing the vitality of Asia.

Our additional proceeds target up to 2020 is 5000 billion (about 10% of national target)

Building Cooperative Relationships with Relevant Organizations (1)

The signing of a memorandum between the United Nations Industrial Development Organization (UNIDO) and the City of Kitakyushu concerning mutual cooperation for the purpose of achieving a low-carbon society. (June 2010)

The signing of a memorandum between the Japan Bank for International Cooperation (JBIC) and the City of Kitakyushu concerning mutual cooperation related to climate change policy and water infrastructure (December 2009)

The signing of a memorandum between the Kyushu Recycling and Environmental Industry Plaza (K-RIP) and the Kitakyushu Asian Center for Low Carbon Society concerning mutual partnerships and cooperation for the purpose of promoting environmental businesses in Asia (June 2010)

Building Cooperative Relationships with Relevant Organizations (2)

The signing of a memorandum between the China Beijing Environment Exchange and the Kitakyushu Asian Center for Low Carbon Society concerning mutual partnerships and cooperation for the purpose of promoting business exchanges in both countries as points of contact between China and Japan (August 2011)

***The China Beijing Environment Exchange**

This organization supports leading enterprises in China, including China National Offshore Oil Corp., State Grid Corporation of China, and China Everbright Investment Corp., as well as the Beijing municipal government, and gathers data on Chinese companies. It also has wide-ranging relationships with environmental agencies in regional cities.

The signing of a memorandum between the Thai Ministry of Industry and Kitakyushu concerning cooperation in creating a low-carbon society
(August 2012)

The signing of a partnership agreement between Japan International Cooperation Agency (JICA) and Kitakyushu City (February 2013

Kitakyushu City and JICA continuously promote existing collaborative relationships, and develop ties in new fields to further enhance mutually beneficial partnership relations.

✓ Pursue international strategy and international cooperation in a field of environmentally conscious urban development by utilizing the Green City Kitakyushu Model

✓ Promote and support private–public partnership and industry–government–academia collaboration

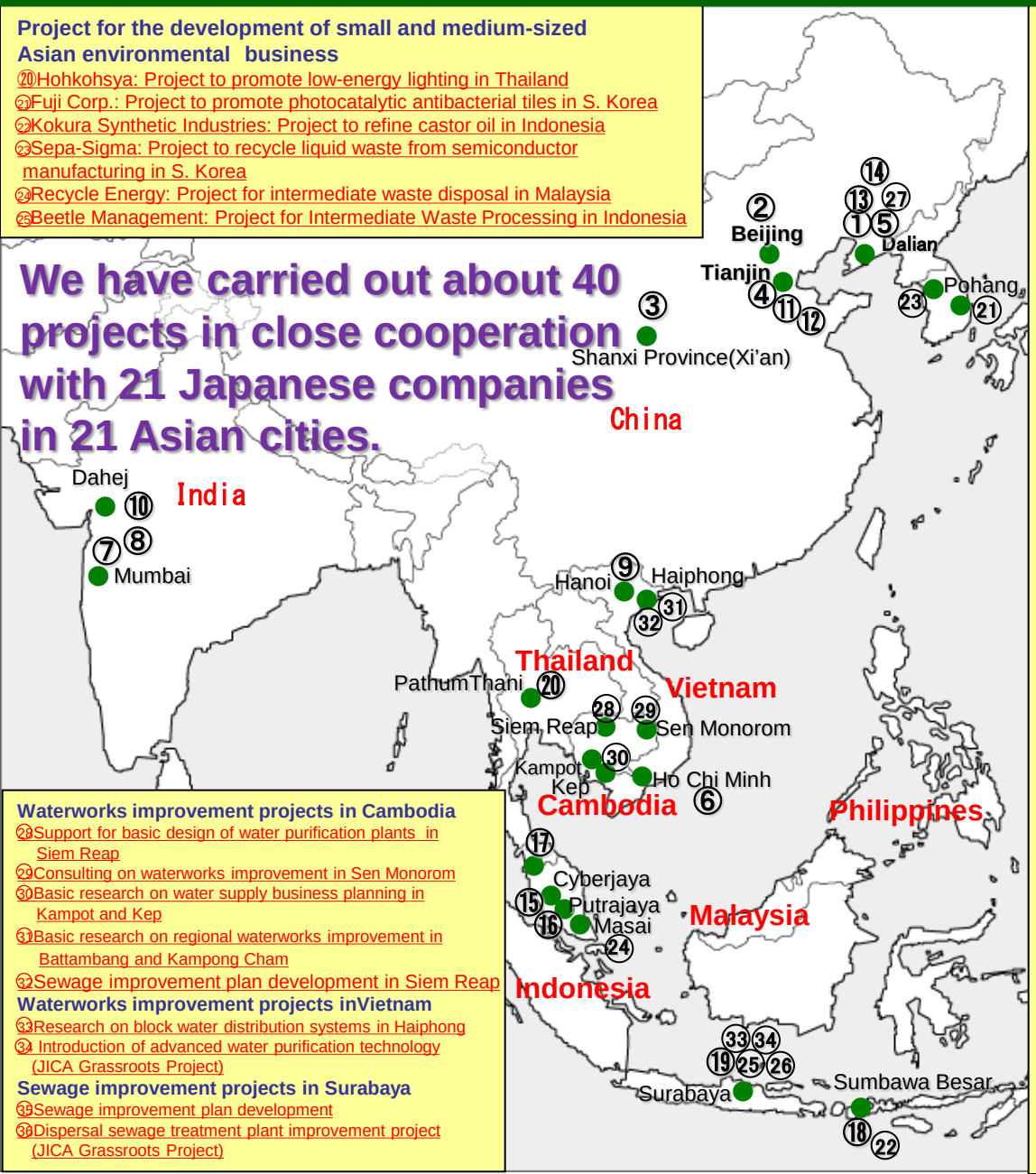
✓ Advise and cooperate with JICA projects utilizing Kitakyushu City technologies and know-how, etc.

Diverse Project Development Map

Project for the development of small and medium-sized Asian environmental business

⑳Hohkohsya: Project to promote low-energy lighting in Thailand
㉑Fuji Corp.: Project to promote photocatalytic antibacterial tiles in S. Korea
㉒Kokura Synthetic Industries: Project to refine castor oil in Indonesia
㉓Sepa-Sigma: Project to recycle liquid waste from semiconductor manufacturing in S. Korea
㉔Recycle Energy: Project for intermediate waste disposal in Malaysia
㉕Beetle Management: Project for Intermediate Waste Processing in Indonesia

We have carried out about 40 projects in close cooperation with 21 Japanese companies in 21 Asian cities.



Waterworks improvement projects in Cambodia

㉘Support for basic design of water purification plants in Siem Reap
㉙Consulting on waterworks improvement in Sen Monorom
㉚Basic research on water supply business planning in Kampot and Kep
㉛Basic research on regional waterworks improvement in Battambang and Kampong Cham
㉜Sewage improvement plan development in Siem Reap

Waterworks improvement projects inVietnam

㉝Research on block water distribution systems in Haiphong
㉞ Introduction of advanced water purification technology (JICA Grassroots Project)

Sewage improvement projects in Surabaya

㉟Sewage improvement plan development
㊱Dispersal sewage treatment plant improvement project (JICA Grassroots Project)

FS investigation and industrialization

①～④Yaskawa Electric Corporation：energy-saving project
①JETRO(2008,Dalian)
②Ministry of Economy, Trade and Industry (2010,Beijin)
③Ministry of the Environment(2011, Shanxi Province)
④Sixth Japan-China Energy Conservation and Environmental Forum Cooperation Project(2012,Tianjin)

⑤,⑥TOTO Ltd. ：Promotion of water-saving home appliance
⑤Ministry of the Environment(2011,Dalian)
⑥Ministry of Economy, Trade and Industry(2012,Ho Chi Minh City & Hanoi)

⑦～⑨Nippon Magnetic Dressing Co., Ltd. ：Rare metal recycling
⑦Ministry of Economy, Trade and Industry (2012,Mumbai)
⑧NEDO demonstrations(2012,Mumbai)
⑨Ministry of Economy, Trade and Industry(2012,Hanoi,Ho Chi Minh&Haiphong)

⑩Hitachi and others:Dahej Eco-city Development Support
・Ministry of Economy, Trade and Industry (2010- ,Dahej Zone,India)

⑪Eco-Material Corporation：Project for recycling waste plastics
・Ministry of the Environment(2011,Tianjin)

⑫Kyushu Metal Industry: Project for recycling used automobiles
・Ministry of Economy, Trade and Industry (Dec.2012- ,Tianjin)

⑬Project for cooperation and advancement of recycling-oriented cities through a Kitakyushu-Dalian partnership
・Ministry of Economy, Trade and Industry（2009-2011,Dalian）

⑭Matsumoto Mitsuharu Shoten: Project for building a used paper recycling system
・Ministry of Economy, Trade and Industry（Oct.2012-,Dalian）

⑮The Japan Research Institute Limited： Building environmentally friendly cities in Malaysia
・NEDO (2011,Putrajaya & Saiba jaya)

⑯The Japan Research Institute Limited： BEMS Aggregation Project
・Ministry of Economy, Trade and Industry（2012,Putrajaya）

⑰Shinryo Corporation: Project for total recycling in electronic manufacturing process in Malaysia
Ministry of the Environment(2012, all of Malaysia)

⑱Toray Group ：BOP project in Indonesia
・JICA(2011,Sumbawa Regency and elsewhere)

⑲Nippon Steel Engineering and others: Energy conservation and cogeneration project in Indonesian industrial zones
・Ministry of Economy, Trade and Industry（2012,Surabaya）

㉖Nisihara Corporation: Pilot project for intermediate waste disposal and recycling facilities
・Ministry of Foreign Affairs(2012,Surabaya)

㉗Nippon Steel Chemical Co., Ltd.:Licensing of nitrate-nitrogen removal technology

Ⅲ Exporting Green City by Inter-city Cooperation

Development of Waste management Project in Surabaya

We achieved a reduction of over 30% in household waste.

We launched the waste management project in 2004 in Surabaya, Indonesia's second largest city with a population of three million. The project entailed proactive steps to encourage residents to compost the organic matter that comprises over half of Surabaya's total waste. As a result of the project, more than 20,000 households now have composting baskets and more households are separating their rubbish into different types, leading to a reduction of over 30% in annual volume of household waste.

City in 2001
Streets overrun by garbage

Surabaya's streets today
Increased greenery in parks and along roads using compost

Partnership between Surabaya and Kitakyushu

A joint statement was made in March 2011 on a strategic environmental partnership between Surabaya and Kitakyushu.

"Green Sister City" agreement was signed in November 2012 between Surabaya and Kitakyushu.

Exporting Green City

Waste disposal

From open dumping to reducing and recycling through intermediate waste disposal


Waste water disposal

From only basic treatment through septic tanks to development of sewage improvement plans suited for the on-the-spot conditions


Cogeneration & energy conservation

Introducing the efficient energy management system

Export of technology and knowledge from Kitakyushu Smart Community project

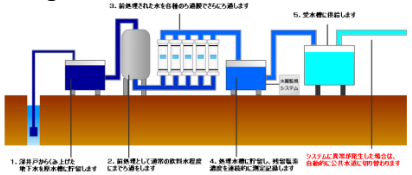
Exporting Green City

Investigating methods for quantifying CO_2 reduction

As for operations being conducted in Surabaya, methods for quantifying reducible volumes of CO_2 are being investigated.

Tap-water purification

Installing water supply equipment in the community that could purify tap-water(though not drinkable) and providing safe, reliable water



Drinking water supply operations

Providing inexpensive clean drinking water through solar panels and water purification equipment


Kitakyushu City ⟷ **Inter-city Cooperation** ⟷ **Surabaya City**

Project for Cogeneration and Energy Conservation at Surabaya Industrial Estate, Indonesia

We hope for this to be our first overseas export from the Kitakyushu Smart Community Development Project.

Nippon Steel & Sumikin Engineering Co., Ltd., Fuji Electric Co., etc.

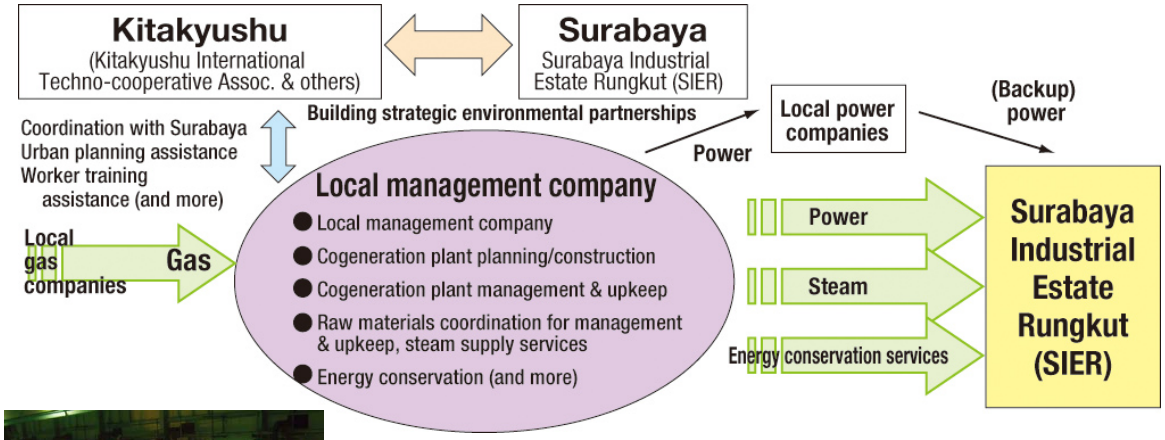
■ We are planning to establish a local management company to offer the following energy and energy conservation services to SIER.
- A cogeneration operation to provide high-quality, efficient power and steam
- Energy maintenance services for industrial estate factories to provide steam systems and energy-conserving systems
- Development of an advanced sewage and waste treatment service centered around the industrial estate

Surabaya Industrial Estate Rungkut (SIER)

The combined heat & power(CHP) with the capacity of 16MW will be installed according to the assumed steam demand(average;37ton/h, maximum;41ton/h）

We assume that the amount of investment will be 3 or 4 billion yen.

*The Surabaya Industrial Estate Rungkut (SIER)
The SIER, which was established with 50% investment from the Indonesian gov't, 25% from State of East Java, and 25% from the City of Surabaya, is an industrial estate some 300 ha in size, and home to about 300 companies.



We intend to develop a successful model in Surabaya and spread it to other parts of Asia with the same issues (insufficient power or low-quality power).

Aim to realize system reform through G to G discussion

1 Electricity sale to consumers

According to new electricity law of 2009, central and local governments have the right to grant approval and license regarding electricity business. The law enabled business operators other than the state-owned electricity company, PLN, to supply power from private power generation to third parties, using PLN's power line. However, to sell electricity, PLN's consent must be obtained, and that is difficult in PLN's supply areas.

2 Sell electricity to PLN (Excess Power)

A rule of 50% self-consumption was removed, and there is no restriction on selling steam. However, an agreement must be renewed annually. Moreover, an Ordinance from the Ministry of Energy and Mineral Resources, ESDM, will be applied to excess power, so selling electricity will be basically at a low price.

Pilot Project for Establishing Recycling-Oriented Intermediate Waste Processing Facilities in Surabaya

Promote recycling and waste reduction by building waste intermediate processing facility (SUPERDEPO) to separate and process valuables and organics after collecting general waste in the city

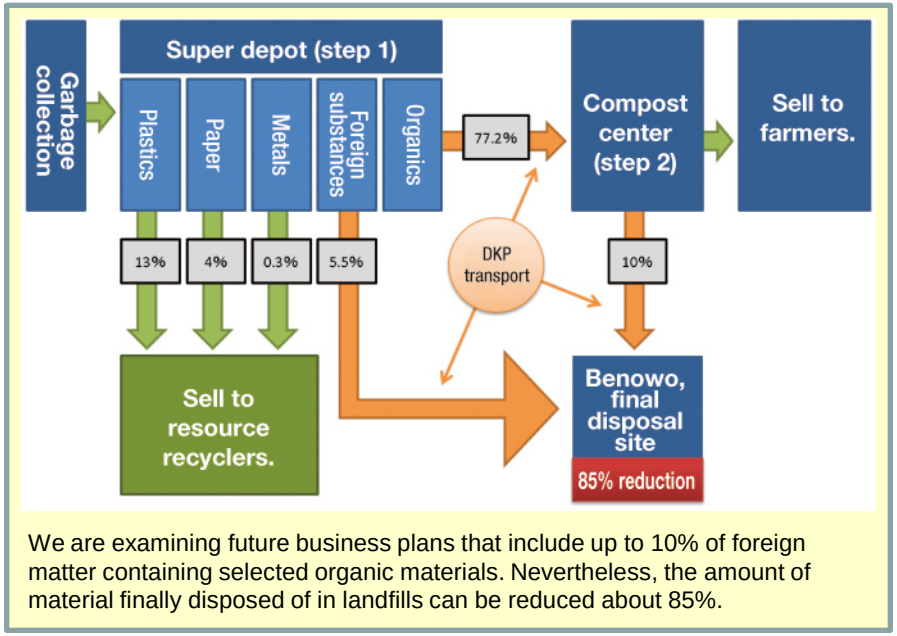
Nishihara Corporation

Waste collected in Surabaya is open-dumped at the final disposal station, amounting to 1200 t/day.
If a recycling-oriented waste intermediate processing plant is introduced, the amount brought into the final disposal station can be reduced by 75%.
Pilot project has been launched, conducted with waste-pickers who make a living by collecting valuables such as plastics and metals from waste in a poor working

Pilot Project
15 t scale/day

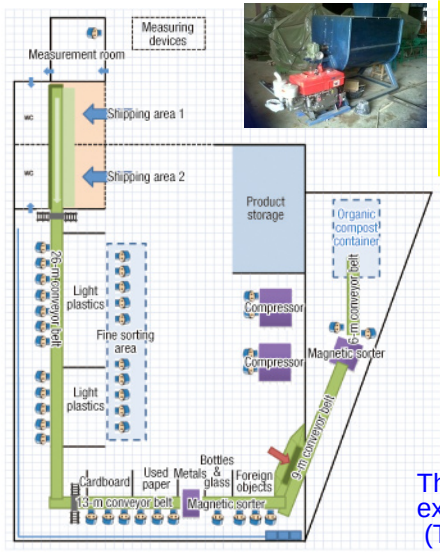
Full-scale implementation
First Phase
100 t scale/day

Full-scale implementation
Second Phase
All city waste



We are examining future business plans that include up to 10% of foreign matter containing selected organic materials. Nevertheless, the amount of material finally disposed of in landfills can be reduced about 85%.

Super depot (step 1)



Composting center (step 2)

Composting center facilities
(daily volume of 100 t)

The compost proceed is used for experimental crop production.
(Trawas: 400 m²)

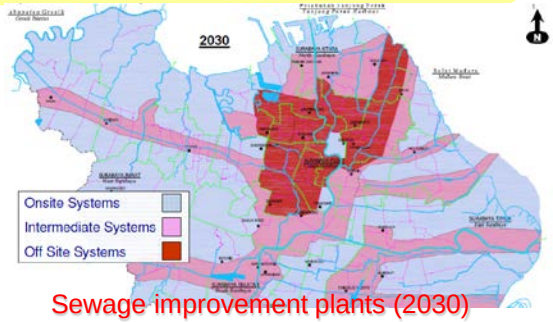
Sewage Improvement Projects in Surabaya

Original Engineering Consultants Co., Ltd. & the Kitakyushu City Water and Sewer Bureau

Development of Sewage Improvement Plans

Surabaya, Indonesia's second-largest city with some 30 million people

- Efficient sewage improvement methods applicable to Surabaya's track record
- Items required for appropriate management of sewage operations
- Methods of educating the public for facilitating sewage operation management
- Utilizing the participation and technology of Japanese firms …and more



Sewage improvement plants (2030)

Problems faced by Surabaya

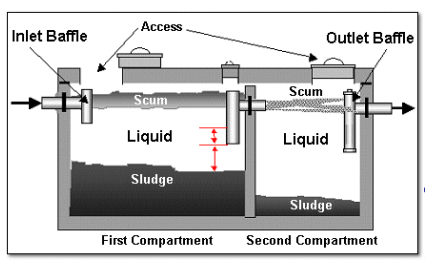
1. The city has no sewage system, so domestic sewage is simply discharged from septic tanks into rivers with only basic treatment, or discharged directly untreated.
2. Garbage is illegally dumped in rivers and canals.
3. The city is affected by inflows of industrial sewage.
4. The entire city is located in a plain, with very little water flow in canals, so water stagnates and becomes polluted easily.
5. Rivers follow gentle slopes are not swift-moving, so sediment accumulates easily.

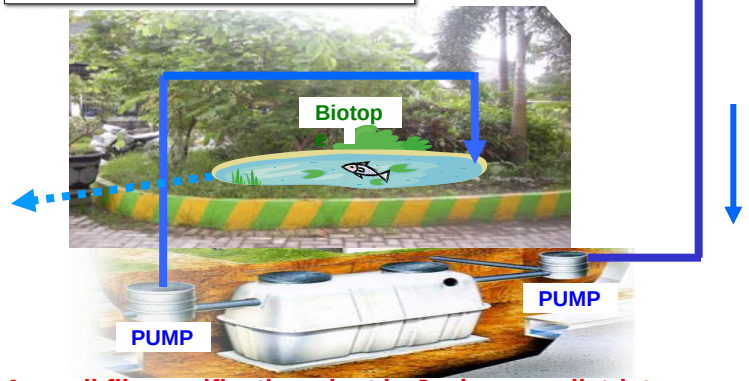
A JICA Grassroots Cooperation Project

Dispersion sewage treatment plant improvement project (34)

Kitakyushu is taking advantage of a JICA Grassroots Cooperation Project (FY2011−2013) and is in the process of creating a master plan covering the following facilities as a project for improving dispersal sewage treatment facilities:

- A small film purification plant in Janbangan district
- A river purification plant in Tenggilis district
- A fish market sewage treatment plant in Pabean district





A small film purification plant in Janbangan district

Indonesia BoP Project

Toray Group (Suido Kiko Kaisha, Ltd. & Toray Industries, Inc.)

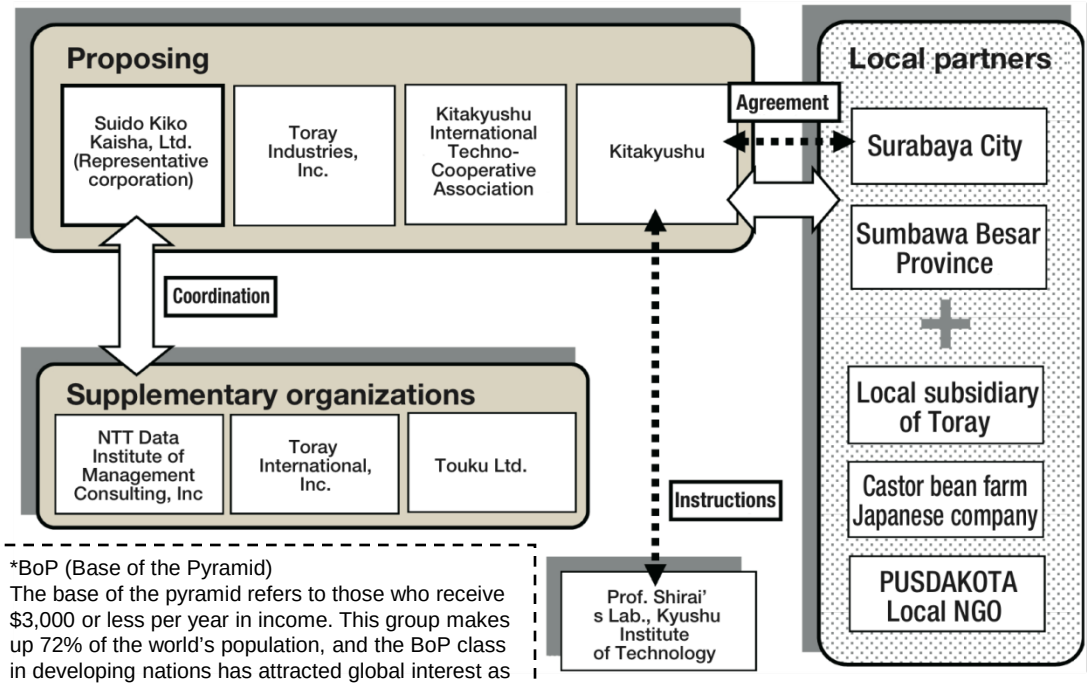
Installation of PVRO at a hospital on Sumbawa

Installation of small solar-powered desalinization machine (PVRO)

In the island region of East Java province, where electrical and water infrastructure are undeveloped, we plan to utilize solar-powered, hybrid water purification equipment with desalinization capabilities to conduct a study on introducing systems that can cheaply supply clean drinking water and improve the local living environment.

The Kitakyushu Asian Center for Low Carbon Society is in charge of the community development and business hub development that will play a key role in creating business models, as well as coordinating with the government of Surabaya.

Our aim in conducting this study is to create new public-private partnerships in emerging nations from a perspective that emphasizes the construction of low-cost business models and the development of technologies appropriate to local needs while protecting local culture.



*BoP (Base of the Pyramid)
The base of the pyramid refers to those who receive $3,000 or less per year in income. This group makes up 72% of the world's population, and the BoP class in developing nations has attracted global interest as a new market.

Ⅳ Development Scheme for Exporting Urban Environmental Infrastructure

Issue of Sectoral Master Plan

Various sectoral master plans (regional development, railway construction, sewerage and etc.) are planned by Japanese government, JICA and international cooperation organization of Australia.

1. These master plans were prepared by East-Java state government as a contact window and Surabaya city as an operation site, however, Surabaya city government is not so much involved with the plans.
Accordingly, for example, voluntary involvement of Surabaya city in the master plan of wastewater prepared by International Development Agency of Australia is not so much expected as following reasons;

- **Procurement of a vast land necessary for the proposed sewerage disposal system is difficult.**
- **No specific proposal is proposed regarding construction of sewerage pipeline in the congested streets and roads.**

2. Preparation of master plan of waste management is the number 1 priority of Surabaya city (mayor, city planning department. beautification department and etc.)
Master plan of waste management in Surabaya city is to be prepared by a technical cooperation project with JICA from 2013, however, the city has already promoted the waste management, so, Barik-Papan and Paren-Ban became a target for the master plan.

3. Aim of Surabaya city is a unique “Green & Low Carbon City” in Indonesia by cross-sectoral linkage with these master plans.

* Human resources of Surabaya city is not enough to realize the “Green & Low Carbon City”, so capacity-building program is necessary for the employees of Surabaya city.

Issue of Individual Project

Various projects are developed in Surabaya city in cooperation with Kitakyushu city, such as energy conservation(the introduction of cogeneration into industrial park), waste treatment, drainage treatment, purification of tap water and well water.

1. Though various sectoral projects are in development, cross-sectoral cooperation is not enough for the concept of the Green & Low Carbon City.

* Various projects are conducted individually in accordance with the needs of Surabaya city, however, each project is not linked organically each other because integration of every project does not exist in the upper town management plan.

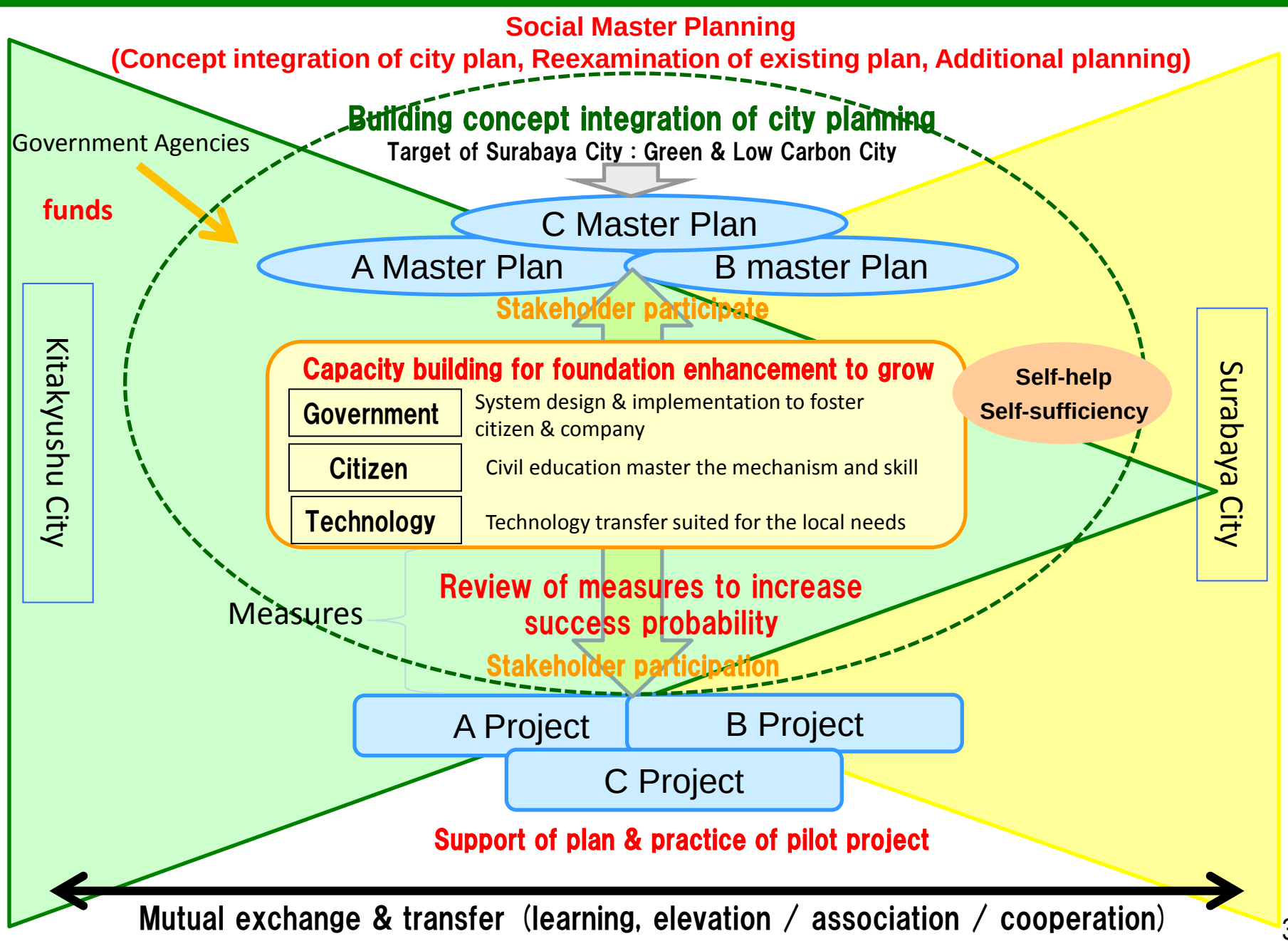
2. Every project is not approached by step-by-step to evaluate project results for the next project planning and is not approached from long-term point of view

* Waste management is the most important issue of Surabaya city and the city is conducting a pilot of intermediate waste recycling facilities, however, master plan of waste management is not prepared yet.

3. Discussion with stakeholders is very important to every project, however, responsible companies do not understand the discussion.

* Companies do not understand the importance of obtaining the consent from local residents that is necessary for requesting local community to maintain demonstration equipment of drinking water.

Support of Social Platform Formation by Inter-city Cooperation



Showroom of the Green City

We are aiming at creating a Showroom of the Green City in Surabaya by the activities based on the Green Sister-City.

1. Building a Model of Green & Low Carbon City

Build a model of Green & Low Carbon City in Indonesia, by using existing "Surabaya Vision Plan 2005 – 2025" (Urban Development Plan), by using the sectoral master plan and by preparing comprehensive city plan from "green and low-carbon" point of view. Dissemination of the model in every cities in Indonesia will contribute the CO2 reduction(26%) by 2020 which is the target of Indonesia.

2. Comprehensive support (from planning to implementation)

Past development & investigation ended by formulation of master plan and its implementation was entrusted to city's autonomy. However, the project is comprehensive project covering preparation of unified concept of town management, backup of planning & implementation of pilot project and human resource development to encourage Surabaya City and feasibility enhancement of master plan.

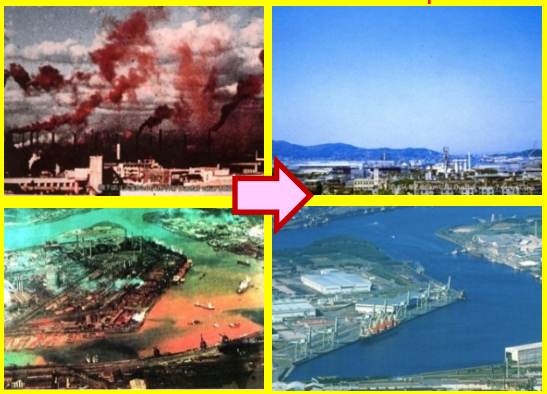
3. Administrative cost reduction by PPP

Each project can be implemented with less administrative cost by helping entry of private companies using PPP to avoid all the costs borne by public administration as in the past. Therefore, we will, in addition, promote regulatory & system reformation to remove the entry barrier of private companies.

Kitakyushu as a base for exporting urban environmental infrastructure

Kitakyushu aiming to become the world environmental capital

Experience of overcoming pollution and International Environmental Cooperation



Prominent environmental technologies and Social System

Urban environment diplomacy with Asian cities

Green Sister City with Surabaya, Indonesia

MOU with **Department of Primary Industries and Mines, Ministry of Industry of the Kingdom of Thailand**

Eco-Model City, Environmental Future City, and OECD Green City Program Model City

Together with Paris, Chicago, and Stockholm!

Kenji Kitahashi, Mayor of Kitakyushu City, who received the Kitakyushu Report from Yves Leterme, Deputy Secretary General of OECD

Stage for exporting urban environmental infrastructure export is cities

By utilizing inter-city cooperation

- ✓**Developing a comprehensive project from upper phase becomes possible.**
- ✓**A long-term follow-up can be done even after project completion.**
- ✓**Can have a direct access to relevant departments of partner's city government**
- ✓**Possible to develop HR for management and operation**
- ✓**Cross-ministry support is possible (METI, MOE, MOF, NEDO, JICA, etc.)**

Public–Private Partnership (PPP)

To promote public–private partnership in the field,

- ✓**Establish a new business entity that is responsible for overall consulting, fund management, and environmental infrastructure operation**
- ✓**Establish a platform where two governments have a dialogue, to lower entry barriers (law/regulations, social system, etc.)**

Comprehensive Urban Solution Using Kitakyushu Model
(Creation of Environment-Conscious City for Developing Countries)

"Experience of Environment-Conscious City" + "High-Techs of Private Companies"
= "Provision of Comprehensive Urban Solution"

◎ Provision of comprehensive urban solution using Kitakyushu model
◎ Creation of environment-conscious city by urban environment infrastructure development of public-private cooperation

<Provision of comprehensive urban solution using Kitakyushu model>

Challenge Issue	Inspection & plan	Examining	Industrialization	Environment-conscious City
○Waste problem ○Water shortage ○Energy deficiency ○Air pollution	○Understanding of present situation ○Arrangement of stakeholder ○Master plan preparation	○Steering body ○Government agency ○Industrialization validation ○Fund-raising	○formation of steering body (SPC, etc.) ○Construction of facilities ○Business start up	○Formation of verification system ○Verification of effect of environment, economy and sociality point of view

<Kitakyushu Model>

Kitakyushu City	Consultant/ Expertise	Private company	Government agencies
(Experience of city renovation)	(Professional know-how)	(Local business operation)	(Cooperation in government level)

<Merit of Kitakyushu Model>

1. Provision of experience of overcoming environmental pollution leading to environment conscious city

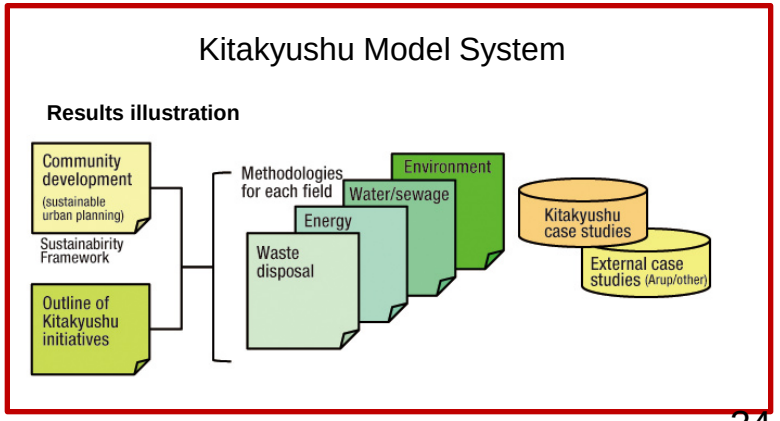
Provision of technology and knowhow of overcoming pollution to environment conscious city, experience of environment-related facilities and creation of effective city renovation.

2. Provision of high-techs of private companies

Various high-techs of private companies used for smart community, eco-town, water plaza, etc.

3. Total management by Kitakyushu City leadership

Kitakyushu city trusted by government agencies will lead overall adjustment.



Development Scheme for Exporting Urban Environmental Infrastructure

Creating a platform for inter-governmental and inter-city cooperation

Inter-governmental (G-to-G)

Logistical support through dialogue and consensus

Recognized and supported as a national project

Country 'I' | City 'S' | Inter-city (city-to-city) | Kitakyushu | Japan

Project conference

Business develop through public-private partnerships

Local firms | Inter-firm | Japanese firms

Development of a comprehensive environmentally-friendly urban master plan

Kitakyushu model activities

Water | Energy | Recycling | Environmental conservation | .....

Consensus-building between the public, industry, government, and other stakeholders

Private financial institutions

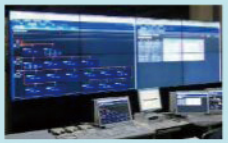
Financial assistance

Social system development

Project discovery

Project development
(feasibility studies & demonstrations)

Commercialization
(including fundraising)



Public financial assistance

Overseas infrastructure development

Creation and centralization of a comprehensive support coordination service

Conference to Promote the Export of Urban Environmental Infrastructure (provisional name)

*Conference for Coordinating Communication Between Related Ministries and Agencies (executive office: Chief Cabinet Secretary)

- Ministry of Foreign Affairs
- Ministry of Economy, Trade and Industry
- Ministry of the Environment
- Ministry of Land, Infrastructure, Transport and Tourism
- JICA
- NEDO
- JBIC ...and more

Comprehensive financial assistance (cross-industry, continuous-process)

Support for establishing footholds (subsidies, etc.)

Greater worker interaction

Establishing footholds for constructing local government models

Kitakyushu Asian Center for Low Carbon Society

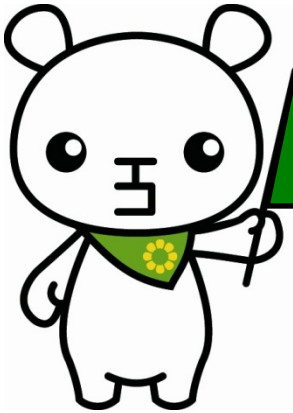
Establish green community development that accommodates the diverse needs of Asian cities and firms.

Consider a product management company (Company X) that will support the Kitakyushu Asian Center for Low Carbon Society.

Building Win-Win Relationships

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.



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.