

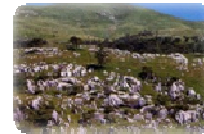
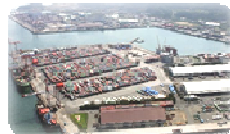
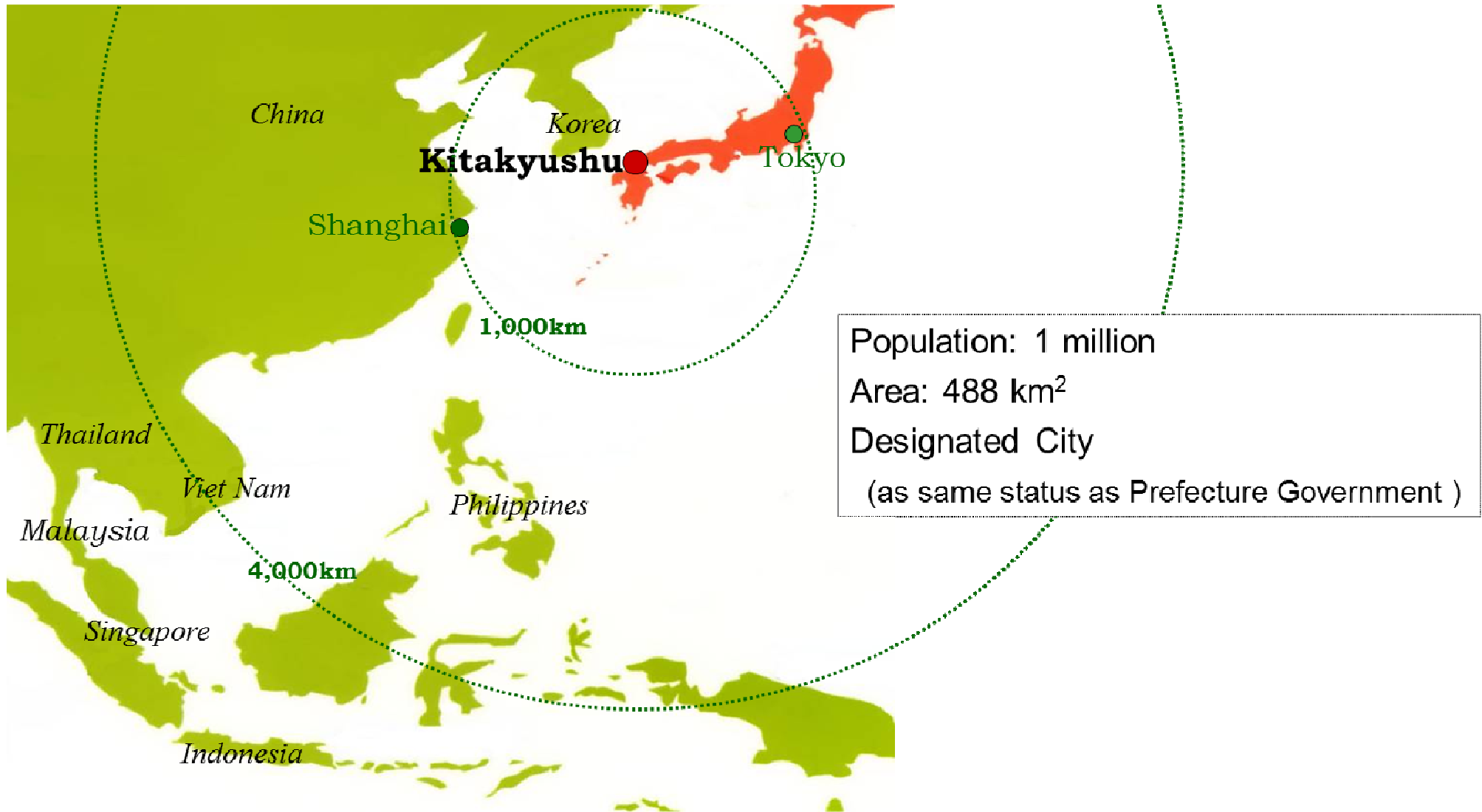
Kitakyushu's Policies and Actions on Sustainable Development and Climate Change

City of Kitakyushu, Japan



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Location and Characteristic

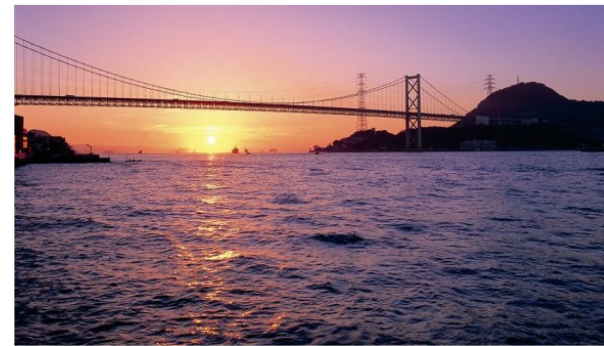
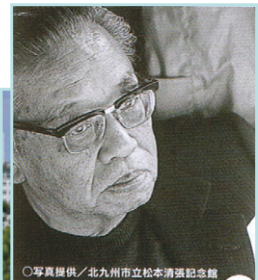


Industries, International Trade, Biodiversity, and Urban Development

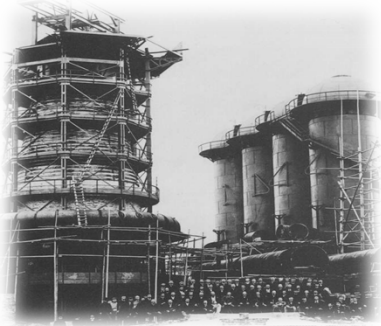
Nature and Food



History and Culture



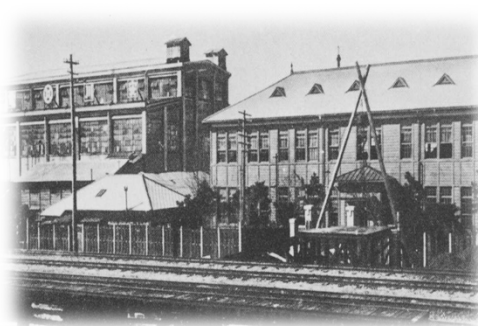
Industrial Development and International Trade



1901 Yawata Steel Works



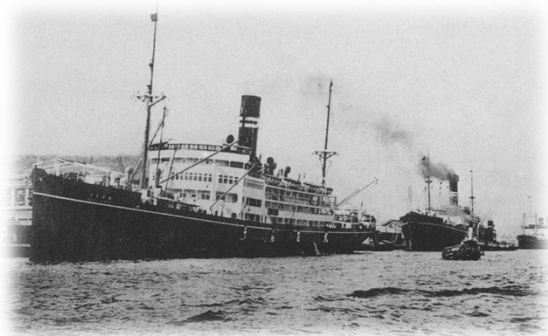
1920 TOTO



1925 Yasukawa



Industries born in Kitakyushu



1935 Moji Port



Tachinoura Container Terminal



International Trade

Accumulated industries, technologies, infrastructures, and citizen participation for Sustainable Society

Industrial Development



Value of Shipment in 2009:
1.96 trillion JPY



Vehicle



Robot



Chemical



Iron and Steel

OECD Green Cities Programme



Paris, France



Chicago, U.S.A.



Stockholm, Sweden



Kitakyushu, Japan



OECD Report on Kitakyushu's Green Growth issued in 2013

Once a polluted industrial zone, Kitakyushu is now a modern industrial city pursuing green growth. Much as for past achievements, future green growth in Kitakyushu will have to rely on strong citizen engagement.

: from *Green Growth in Kitakyushu, Japan*,
OECD Green Growth Studies, 2013, OECD



http://www.oecd-ilibrary.org/urban-rural-and-regional-development/green-growth-in-kitakyushu-japan_9789264195134-en

Kitakyushu's Collaboration with ADB

4 - 5 February 2013 (ADB)

**OECD-ADB Joint Workshop on Green Growth
in Fast-Growing Asian Cities**

18 - 19 September 2013 (ADB)

Workshop on Integrated Solid Waste Management (ISWM)

18 - 20 October 2013 (Kitakyushu)

International Conferences and Forum

27 -28 May 2014 (ADB)

3rd Asian Sanitation Dialogue



Present Issues in the World



Air Pollution



Water Pollution



Solid Waste



Poverty



Global Warming

***Economic Development
Urbanization
Pollination Growth
Women & Children Rights
....., etc.***

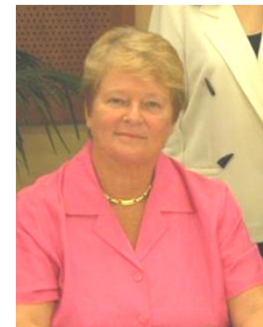
Sustainable Development

Sustainable Development is...

- ☑ Development that meets the needs of the present without compromising the ability of future generations to meet their own needs. *[Time-equality]***
- ☑ Development that alleviate poverty. *[Spatial-equality]***

**Report of the World Commission on Environment and Development
“Our Common Future” (1987)**

***World Commission on Environment and Development (WCED) ,
chaired by Dr. Gro Harlem Brundtland***



Dialogue among Multi-Stakeholders and sharing philosophy on Sustainable Development



Multi-stakeholders Forum on the World Capital of Sustainable Development (October & December 2003)

**Call for ideas and opinions to create
“World Capital of Sustainable Development”**

- **Period: April to December 2003**
- **Receive 1000+ submissions**

**Discussions at Kitakyushu Committee on
“World Capital of Sustainable Development”**

- **Members: 34 (industry/academia/govt)**
- **Period: March to October 2004**
- **Plenary Meetings (4 times)**
- **Workshops (10 times)**
- **Drafting committee (4 times), other**



**Kitakyushu Committee on
“World Capital of Sustainable Development”**

**Declaration of the creation of the
“World Capital of Sustainable Development”
(9 October 2004)**

Grand Design for Realising Sustainable Development

***Commitment of the Residents of Kitakyushu to
All People, The Earth and Future Generations***

~Towards the creation of a “World Capital of Sustainable Development”~

《Basic Philosophy》

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

In positioning this as the best set of standards for all actions,
the following three pillars are put forth:

- Living together, creating together
- Developing economically through environmental actions
- Enhancing the sustainability of the city

● **Contents of the Grand Design: The following are also described.**

Preamble, Background and Resolve, 10 Principles of Environmental Action of the People of Kitakyushu

● **Attachments: 250 projects and glossary of terms**

Kitakyushu Green Frontier Plan

Made and Shared by Local Multi-Stakeholders

Target: Society with prosperity accumulated over generations

- Utilizing industrial infrastructure
- Elderly and Children Friendly Society
- International Cooperation for Asian Sustainable Development

Residents' Willingness
& Partnership



Making a Sustainable Society



New Feeling of
Values & Culture

**Solution to
Climate Change Issue**

**Increasing City's
Happiness & Activeness**

**Asian Growth &
Exchange**

CO₂ Reduction Target with 40% Economic Growth in 2050

☑ City Area: **50%**

☑ Asian Region: equivalent to **150%** of Kitakyushu's Emission

5 Strategies

**Urban
Development**

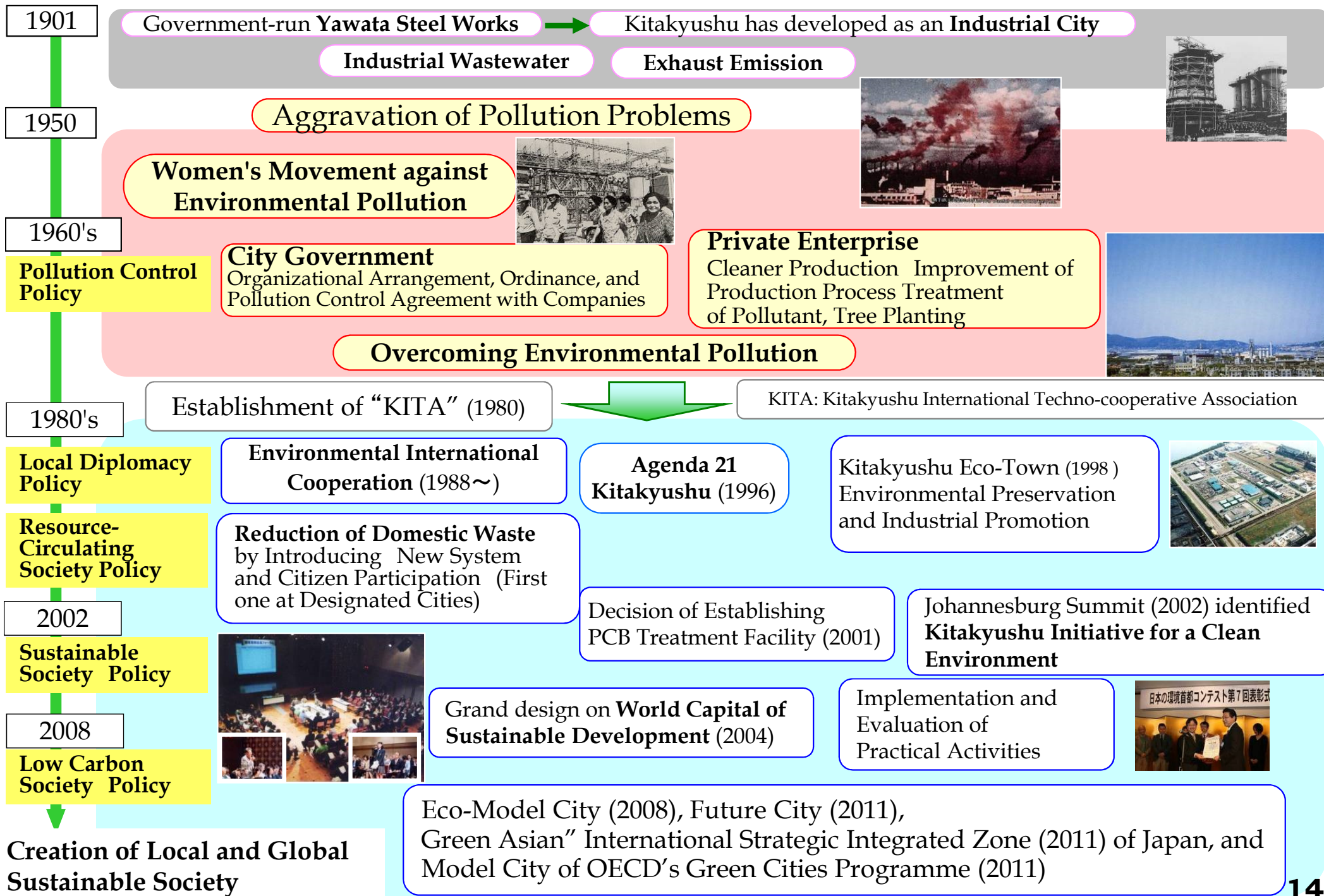
**Industrial
Development**

**Human
Development**

**Social
Development**

**Sustainable
Development
in Asia**

Chronology of Kitakyushu's Environmental Policy ~Green Frontier~



Overcoming Severe Environmental Pollution



Severe Air Pollution

In 1950s & 1960s → *Present*



Blue Skies



Residents enjoying blue sky



"Dokai Bay, Sea of Death"



Beautiful Sea



Swimming at Dokai Bay

Improvement of Murasakigawa River



before



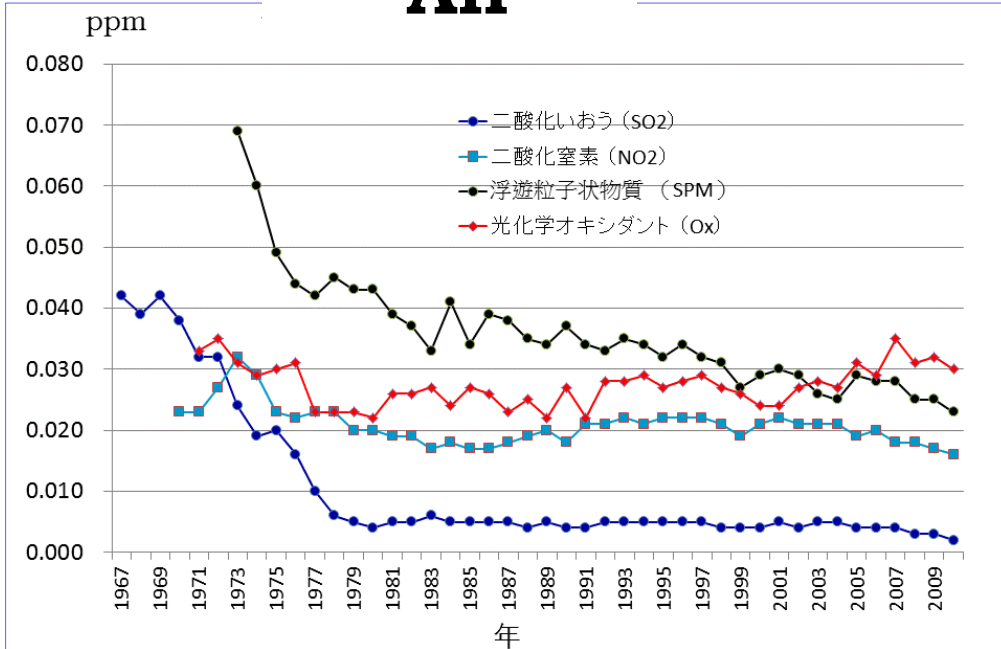
after



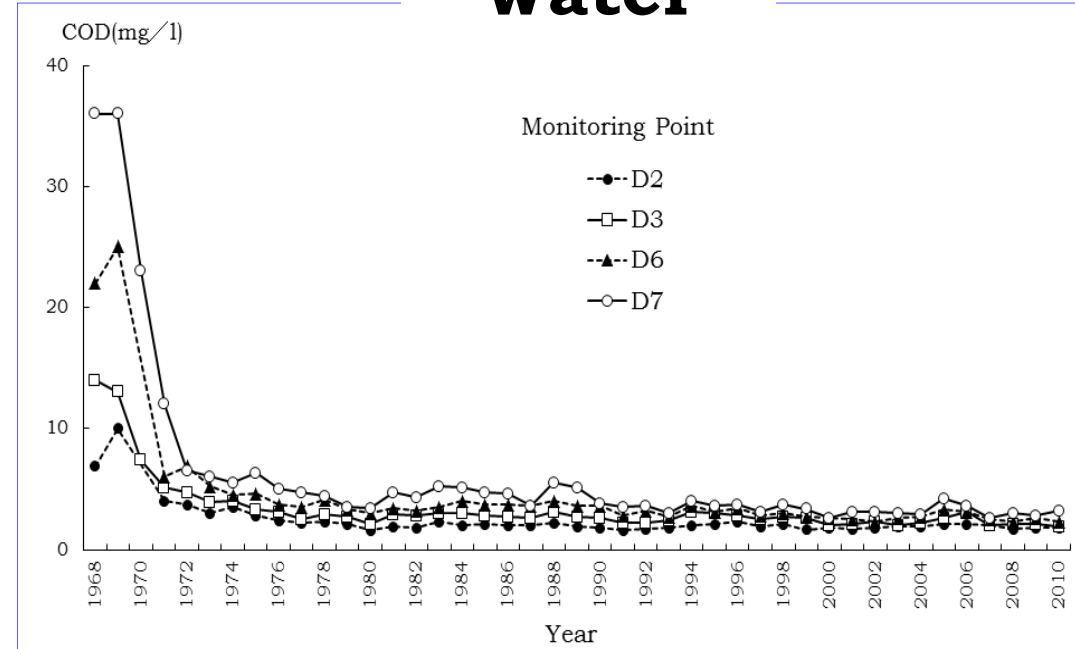
Sport Festival at Murasakigawa River

Improvement of Environmental Quality

Air

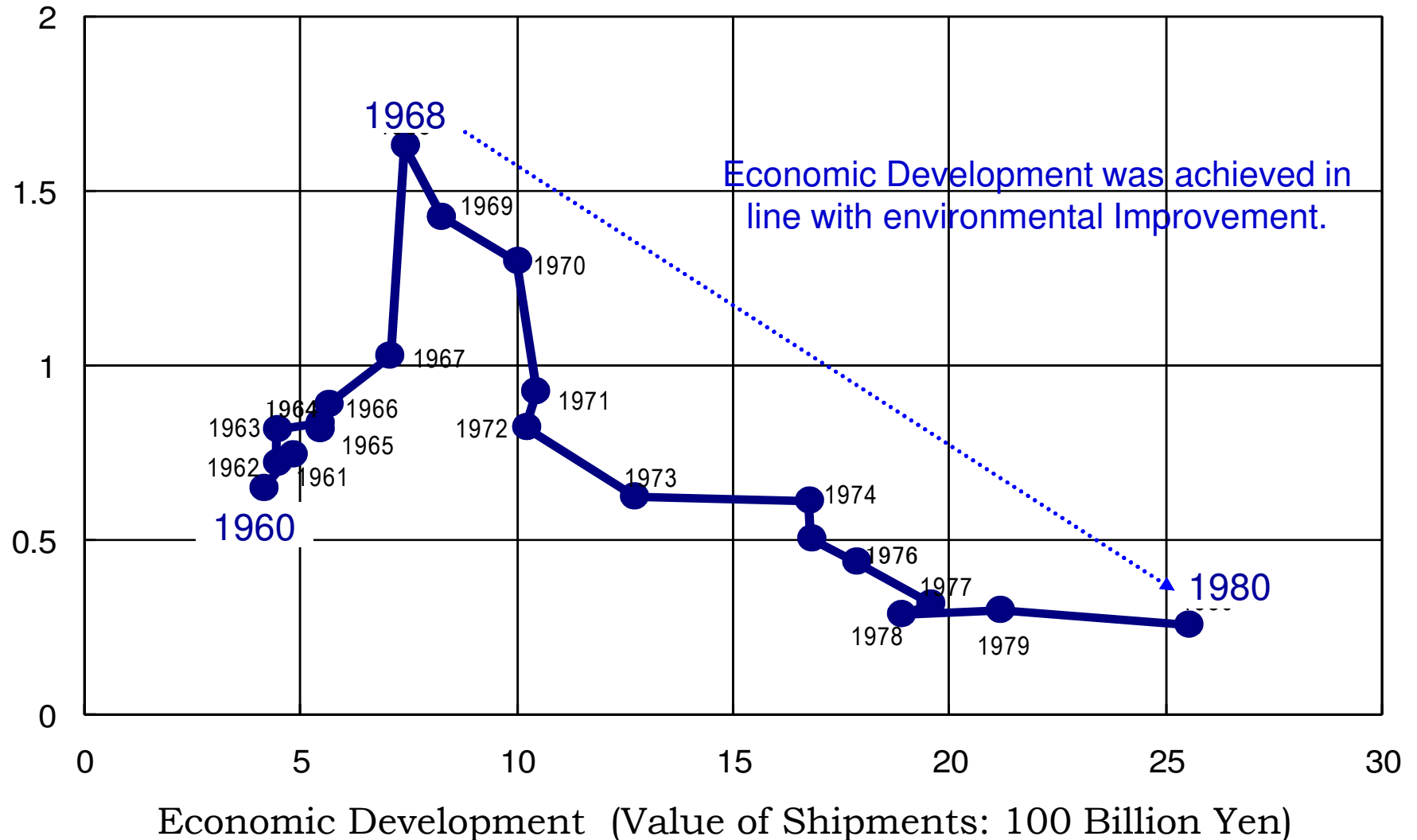


Water



Economic Development & Environmental Achievement (Win-Win) in Kitakyushu

Environmental Pollution
(mg-SO₃/100cm²/day)



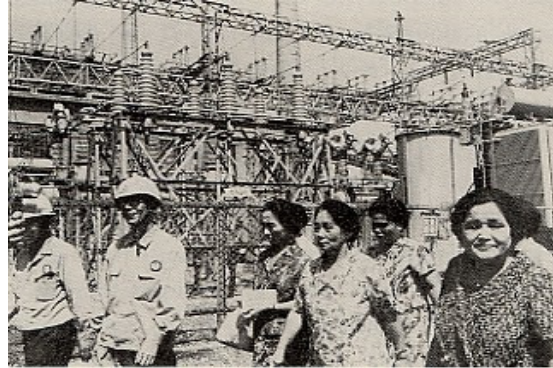
Citizens' Initiative against Environmental Pollution since 1950



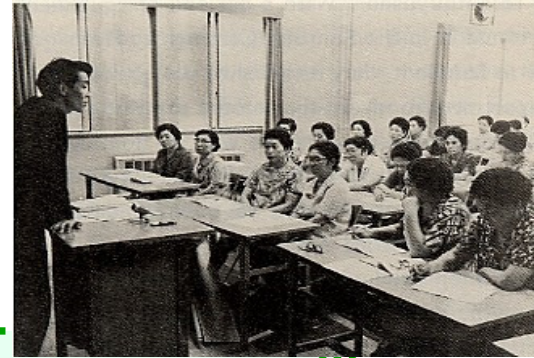
Video "***We want Blue Skies Back!***"
made by Women's' Group in 1965

Partnerships among Local Multi-stakeholders

Residents



**Residents' observation of
a private company**



**Learning how to measure air pollution
from a university professor**

Partnership



**Environmental control &
environmental infrastructure
Local Government**



**Cleaner Productions &
pollution control equipment
Private Enterprises**

Local Initiative & Partnership
Environmental Technology & Environmental Investment
Education & Participation of Residents
Environmental Governance

Sustainable Development Policies and Actions

Main Stakeholders on Sustainable Development

Stakeholders		Role & Function
Government	City of Kitakyushu	Strategy, Policy, Social System, Supporting System, Regulation, Urban Development, etc.
	National	Law, National Strategy, Supporting Local Government, etc.
	Prefecture of Fukuoka	Same as the City of Kitakyushu excepting Kitakyushu's Concern
	surrounding municipalities	Cooperation in individual policy and project
Private Enterprise	Manufacturing Industries: TOTO, Yaskawa, Nippon Steel, etc.	Greening of Industry
	Eco Premium Supplying Companies	Development and Supply of Green Products
	Eco-Town Companies and Energy Companies	New Green Industry
	Component Technology Supplying Companies	Supporting Industry for Green Companies
Citizen	General Citizen	Reduction of Environmental Load in daily life and cooperation with Green Policy
	Local Community	Environmental Activities and Enlightenment in community
	Citizen Group	Organised Environmental Activities and Enlightenment
University:		Technology development, LCA Evaluation, etc.
		Social Development Study
Institute	Kitakyushu International Techno-cooperative Association (KITA)	International cooperation for realising green growth in Asia
	Japan International Cooperation Agency (JICA)	
	Kitakyushu Foundation for the Advancement of Industry, Science and Technology (FACE)	Bridge between Interface for Research and Development and Business

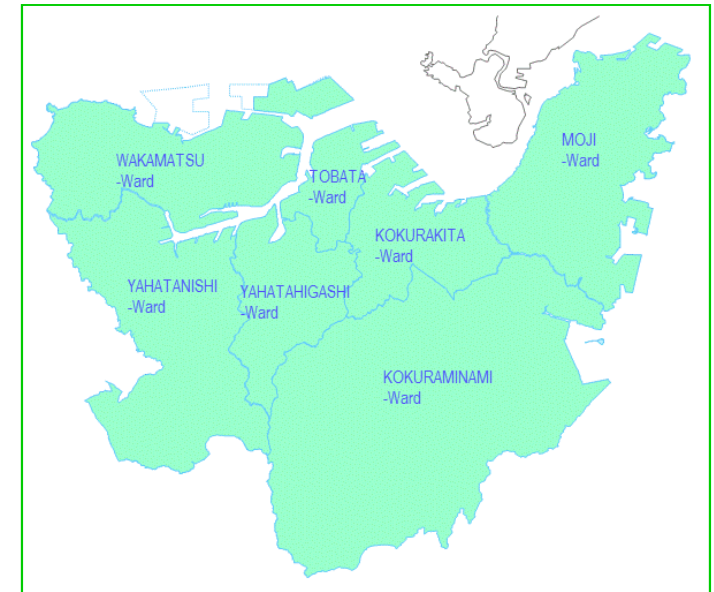
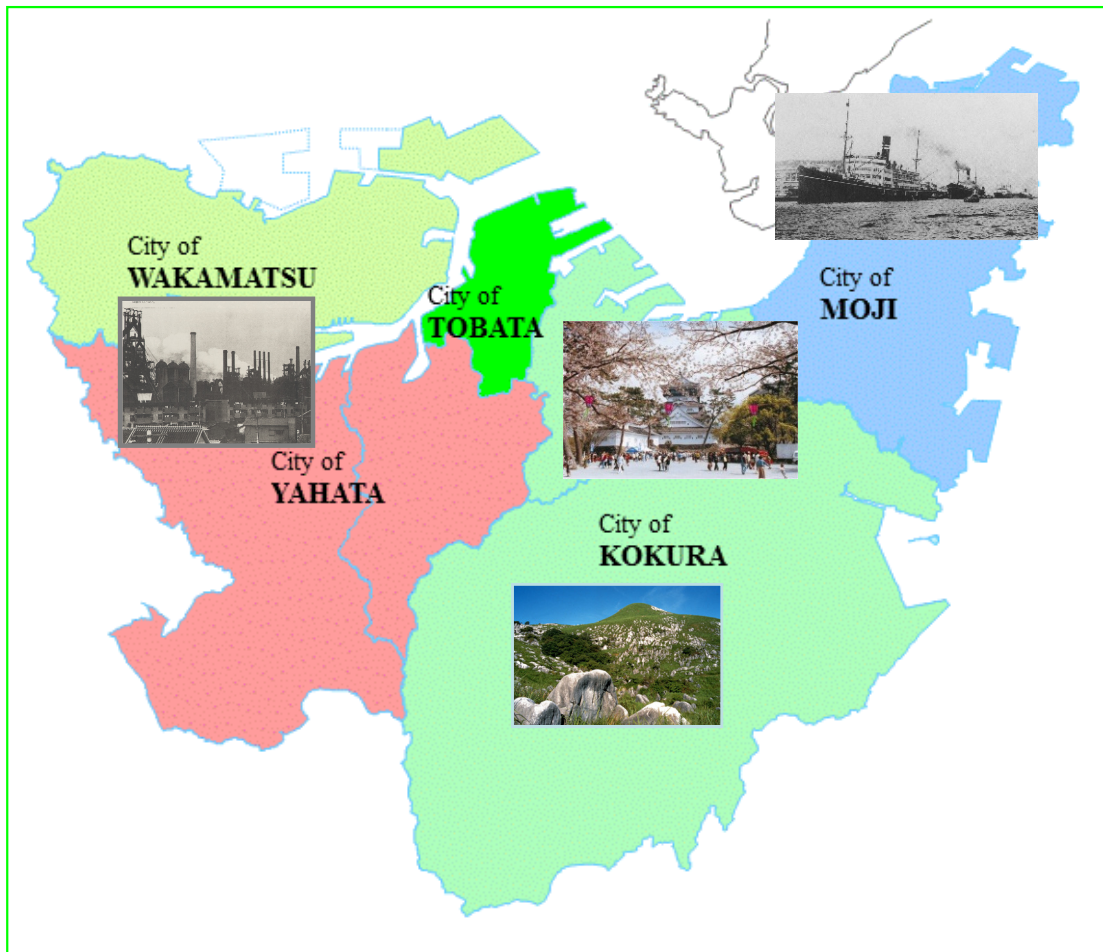
Policies as the Means to realize Sustainable Development

Fields	Policy and Project Concerned
Pollution Control, Management on Toxic & Hazardous Substances	Pollution Control Policy, Pollutant Release and Transfer Register (PRTR), Risk Communication, etc.
Environmental Quality	Air Management, Water Management
Reclamation of Brown Field	Re-Development at Brown Field such as Factory site
Resource-Recycling, Solid Waste	Solid Waste Management, Solid Waste Recycling, Eco-Town, etc.
Energy / Global Warming Prevention	Renewable Energy, Energy Saving, ISO14001, ...
Industry, Arts and Science	Eco-Material, Eco-Design, Long-Life Product, Community Business
Nature	Nature Conservation Master Plan, Projects on Water Front, Urban Forestry, Bio-Diversity, Ecosystem, ...
Education	Elemental Education, Environmental Education, ...
Lifestyle	Green Consumer, Enjoying Life, Segregation of Solid Waste, Eco-Stage, Anti-Ownership, Slow in Fast, ...
Social System	Industrialization of Environmental Management, ...
Amenity / Pleasantness	
Community	Community Activity, Consumption of Local Agricultural Products
Building	Environmental Building
Urban Planning	Green Village Project, Urban Planning Master Plan
Transportation	Modal Shift to Eco-Transportation, Eco-Car, etc.
Integrated Environmental Management	Pollution Control Plan, Agenda 21 Kitakyushu, Environmental Master Ordinance
Global View Point	International Environmental Cooperation, etc.
Policy Making / Information	Open Forum such as the Programme on the World Capital of Sustainable Development (PWCSO)
Stakeholders' Actions	

Administrative Organization of Kitakyushu City

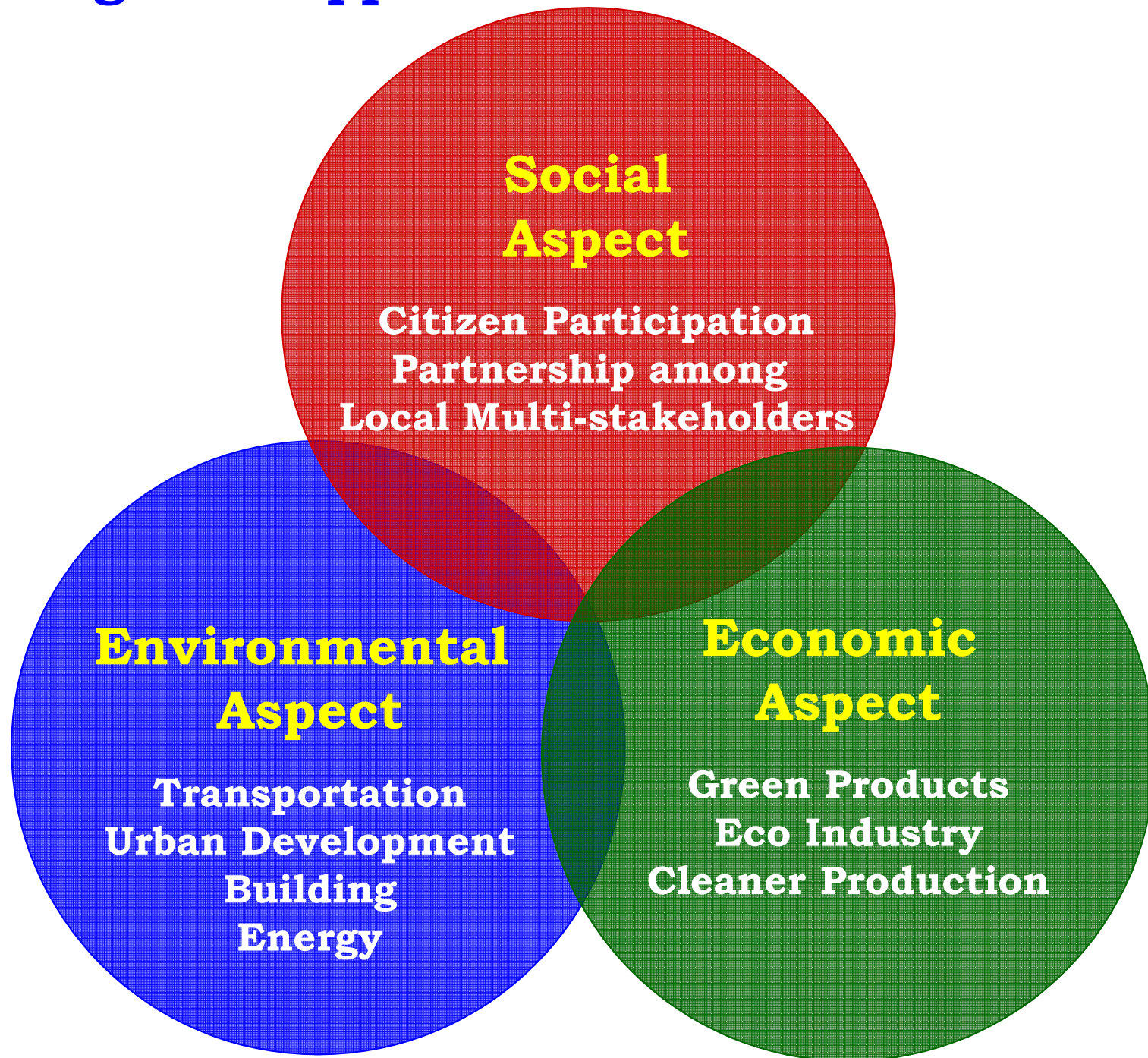
Mayor	Deputy Mayor	Bureau	Function
		Engineering Supervision Office	Greening of Public Construction
		General Affairs and Planning Bureau	Fundamental Plan and Strategy
		Finance Bureau	Financing/Budget
		Citizen Services, Culture and Sports Bureau	Policy and Support for Local Community
		Public Health and Welfare Bureau	Policy of Welfare and Elder People
		Child and Domestic Affairs Bureau	Social Participation
		Environment Bureau	Environmental Policy, Energy Policy, Waste Management, Resource-Circulation, Environmental Education, Nature Conservation, Green Growth in Asia (International Cooperation and Business)
		Industry and Economics Bureau	Industrial Policy, Employment Policy, R/D, International Trade
		Construction Bureau	Infrastructure such as Sewerage, Road, Greenery, Contribution to Green Growth in Asia, etc.
		Buildings and City Planning Bureau	Urban Planning, Green Building, Transportation
		Seaport and Airport Bureau	Port, Distribution, Airport, Industrial Location
		Ward Office (7 offices)	Local Policy, Citizen Services
		Fire and Disaster Management Bureau	Development of Fire Fighting Technology with Low Environmental Load
		Waterworks Bureau	Water Supply System with Low Environmental Load, Power Generation by use of Water Supply Facility, Contribution to Green Growth in Asia
		Board of Education	School education Citizen Education
		Transportation Bureau	Public Transportation / Bus
		Municipal Hospitals Bureau	Greening of Hospital Facilities
		Others: Accounting office, Secretarial Office, Public Information Office, Contracts Office, City Assembly Secretariat, City Election Administration Commission Office, Personnel Commission Office, Auditing Office, Agricultural Commission Office	

Kitakyushu City merged from 5 Cities in 1963 for strengthening governance capability



- Efficient governance in wide point of view
- Integration of each characteristics and resources
- Transportation system connecting each compact district
- Strengthening environmental control authority

Integrated Approach and Concrete Actions

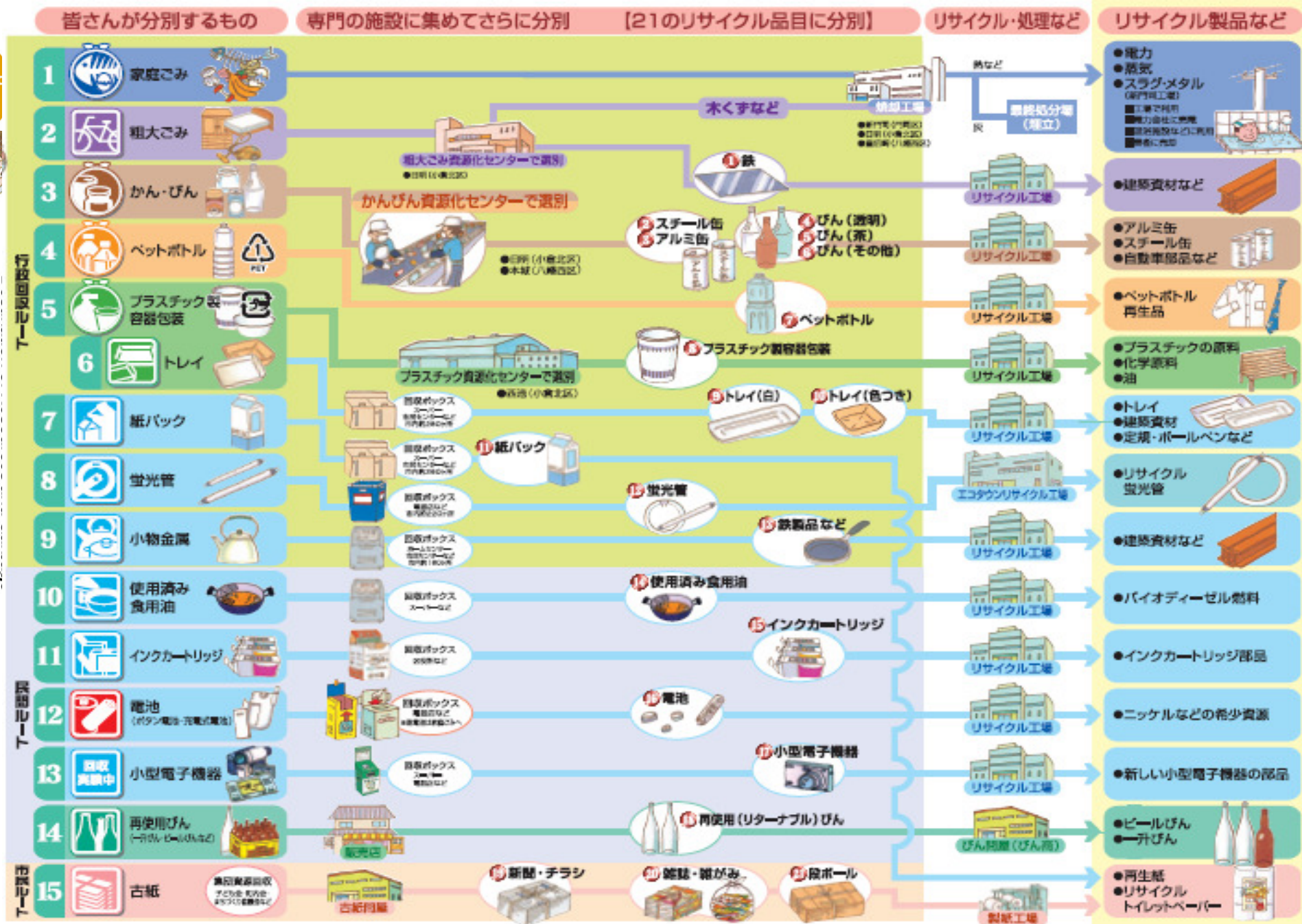


Domestic Waste Management & Resource Circulation

Where is the separated garbage going?



According to the rules, garbage should be separated in order to save limited resources.



Citizen's Activities towards Realizing Resource-Circulating Society



Waste Separation at Home

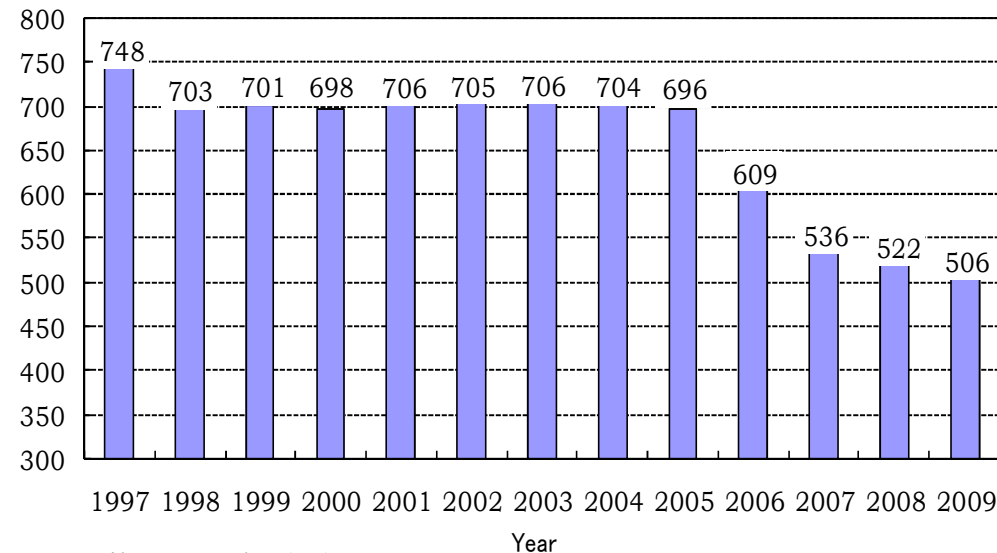


Resource-Circulation Station

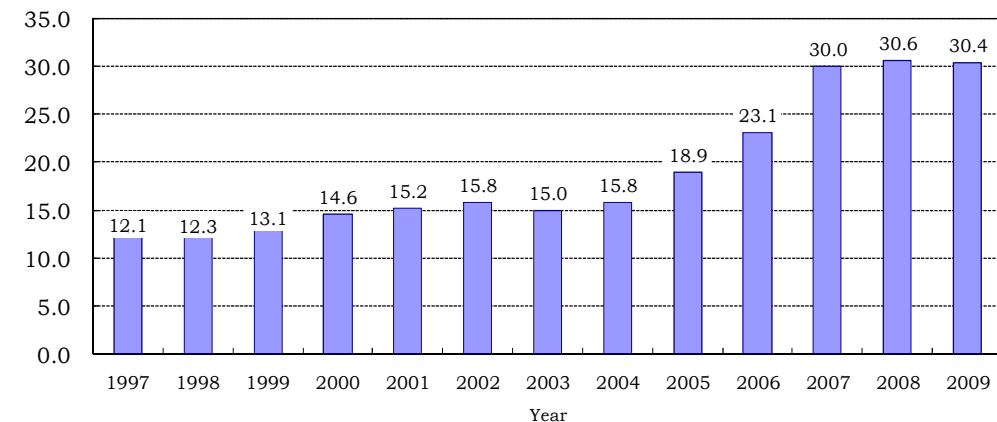


Citizen's Activities towards Achieving Resource-Circulating Society

Domestic Waste Generation (g/day/capita)



Recycling Ratio (%)



Reduction of Domestic Waste & Increasing of Recycling

Successful waste management : Japan has one of the lowest rates for municipal waste production among OECD countries, 1.03kg per person per day (2008), and Kitakyushu produces less than half that amount, 506g per person per day (2009). (Reference: OECD Green Growth Studies, Green Growth in Kitakyushu, Japan, 2013)

Nature Conservation by Citizens



Citizens' Activities for Beautiful Kitakyushu



Environmental Education and Learning

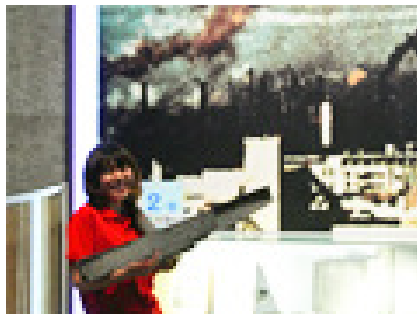


Environmental Textbooks for Students



Junior Eco-Club

Kitakyushu Environmental Museum



Sustainable Human and Social Development with True Wealth

Learning Field on Sustainable Development



Centre for the System
Environmental Museum & Eco-House



Citizen's Planting Trees



Photovoltaic Generation at School



Sone Tidal Flat & Scarce Living Thing

Education for Sustainable Development (ESD)

Kitakyushu ESD Council

80 organisations and groups:

**Citizen Groups, Private Enterprises, Universities,
and Local Governments**



**Regional Centre of Expertise (RCE)
certificated by
United Nations University**

Kitakyushu Learning and ESD Station



Collaboration among 10 Universities



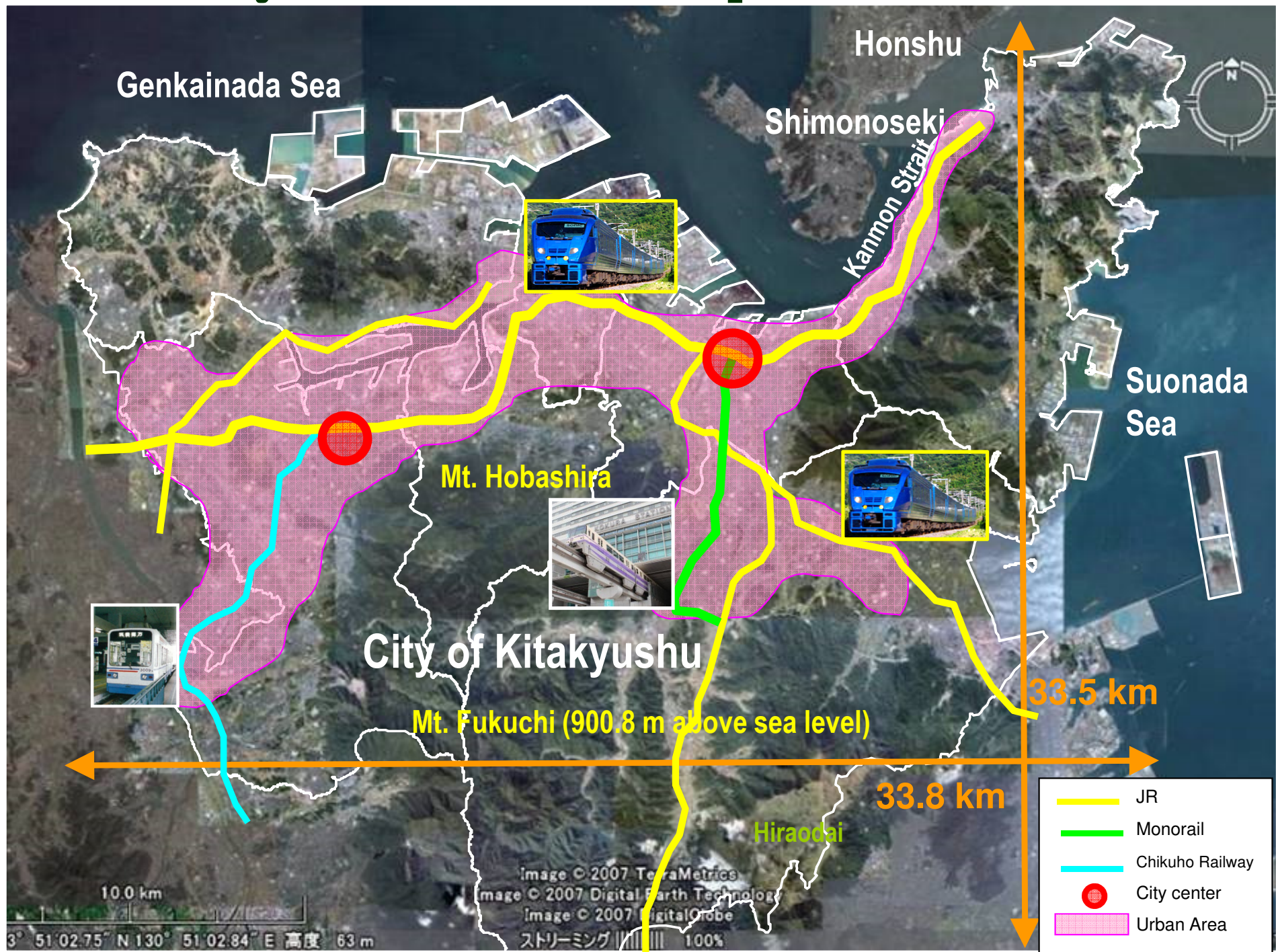
Kitakyushu Eco-Life Stage



**Information Dissemination and Exhibition of Environmental Activities
by Citizen Groups and Private Enterprises**

Participants: 150,000 people per 2 days

Kitakyushu Public Transportation Network



Public Transportations Connection Development

Convenient Connection and Easy Access to Urban Facilities

Kokura Station



Kurosaki Bus Terminal



Connections between Public transportation: Train, Monorail, and bus



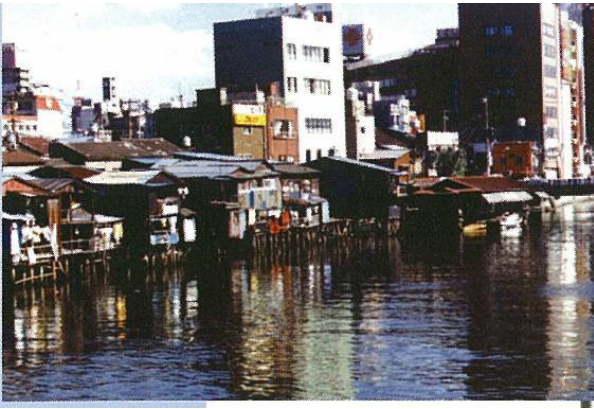
Monorail



Rental of Electric Bicycle

Redevelopment of Kokura Urban Center Area

Comprehensive Redevelopment of Murasakigawa River Area



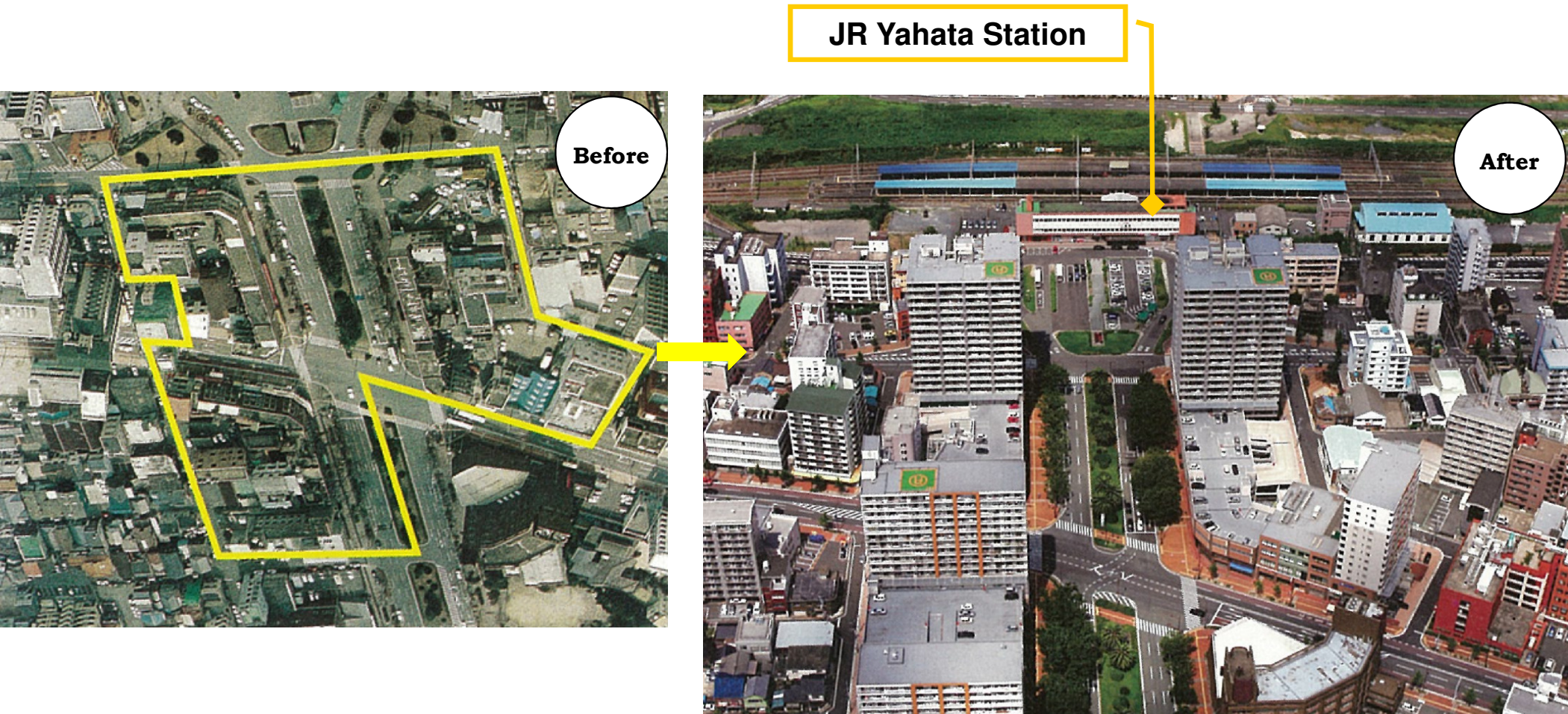
Before



After

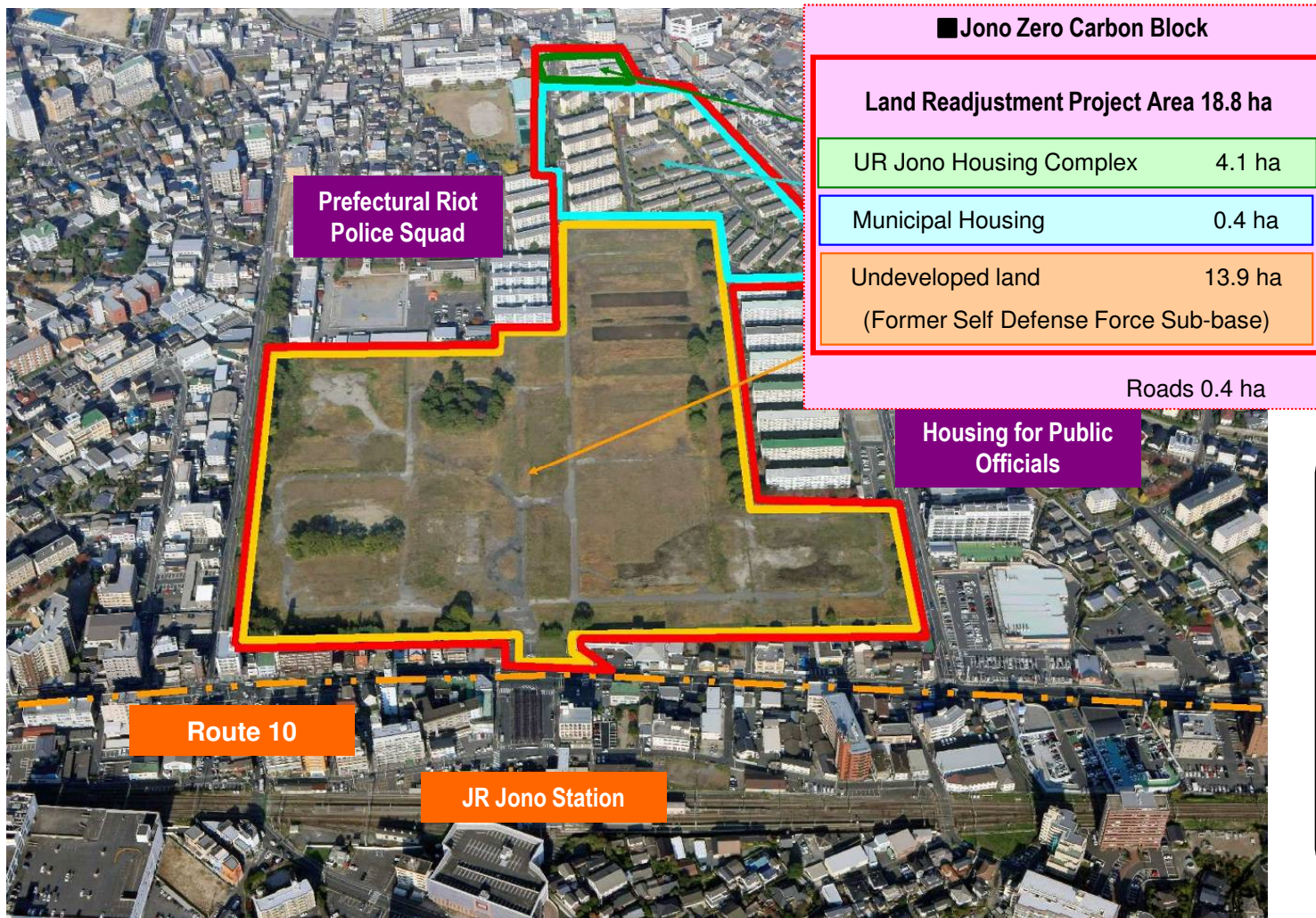
Urban Center Oriented Development against Sprawl

Development Projects around JR Yahata Station -Land Re-Adjustment Development-

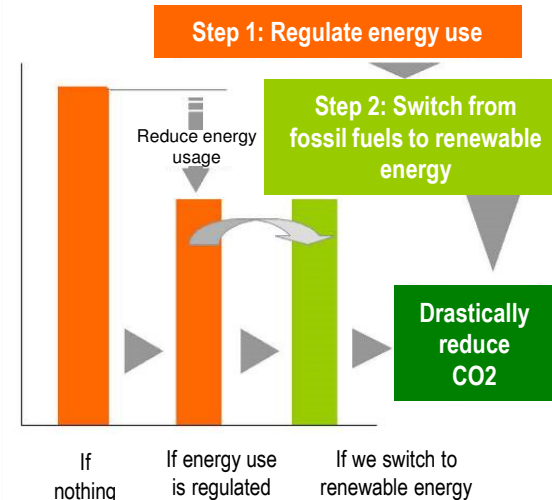


Formation of the Jono Zero Carbon District

Kitakyushu is in the process of developing the UR Jono Housing Complex and the undeveloped public land north of JR Jono Station in the center of Jono District (approx. 19 ha) into a "zero carbon community." A number of low-carbon technologies and measures are being incorporated to accomplish this, including promoting the construction of energy creation/energy saving eco-houses, optimizing energy use by implementing an energy management system, and facilitating the use of public transportation.



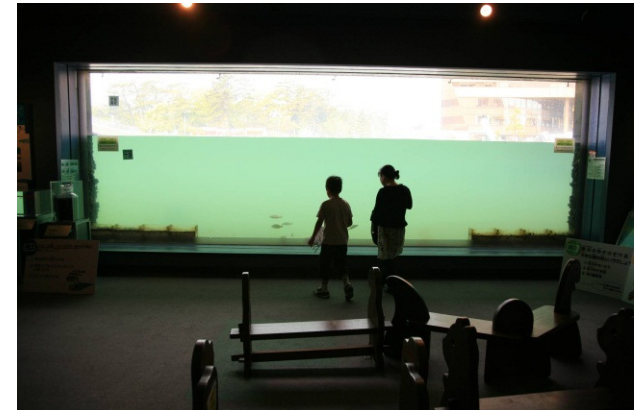
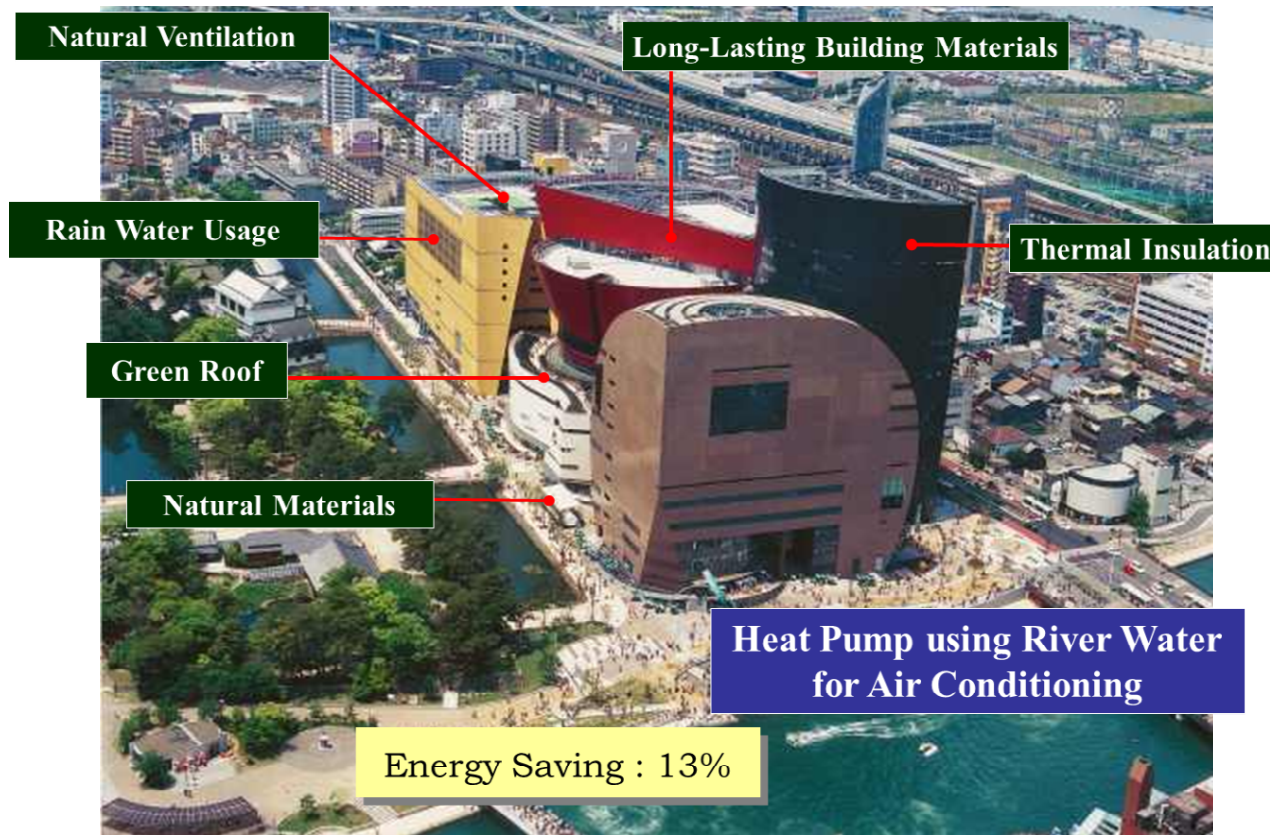
Reduction of Household CO2 Emissions



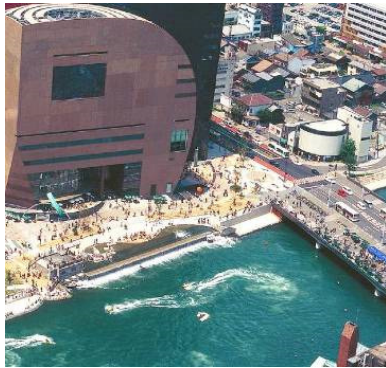
Land Readjustment Project Schedule

- 2012: Start Construction
- 2013: Sell several housing lots
- 2015: Inauguration of Carbon-free Residential Area
- 2016: Project complete

RIVERWALK/Complex Facility with Energy Saving and Comfortable Urban Environment for Citizens



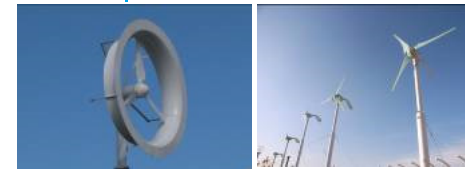
Murasakigawa River with Renewable Energy Project



 Photovoltaic Generation



 Wind Power



 Electric Vehicle



PV Roof



PV Arcade in noon

 LED



LED Arcade in night

 Green Roof



City Bicycle with Electric Assistance

Mojiko Retro Area

Redevelopment for Tourism



JR Mojiko Terminal



Energy Policy in Kitakyushu

Issues

Energy Policy against Climate Change
Increasing Energy Cost
Diversification of Energy Sources
Strengthening Energy Security

Innovation for Solving Issues

Sustainable Society
with Smart Use
of Energy
at Community

Creation of Various
Energy including
Renewable Energy

Realising
Hydrogen Society

Kitakyushu Initiatives

Kitakyushu
Smart Community

Citizen-Participatory
Energy Management

Kitakyushu Regional
Energy Base Programme

Supplying
Various Energy

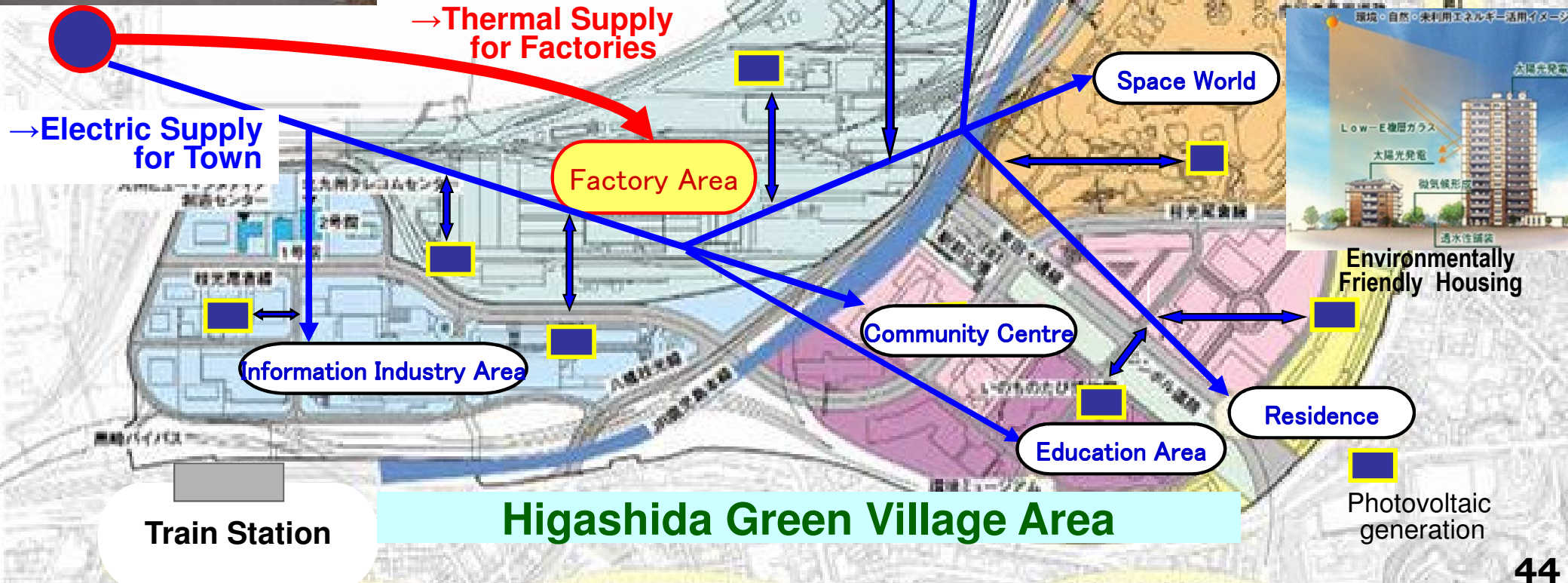
Kitakyushu
Hydrogen Town

Hydrogen Society
as a part of
Urban Infrastructure

Higashida Green Village

Integrated Local Energy System with 30% Reduction of CO₂

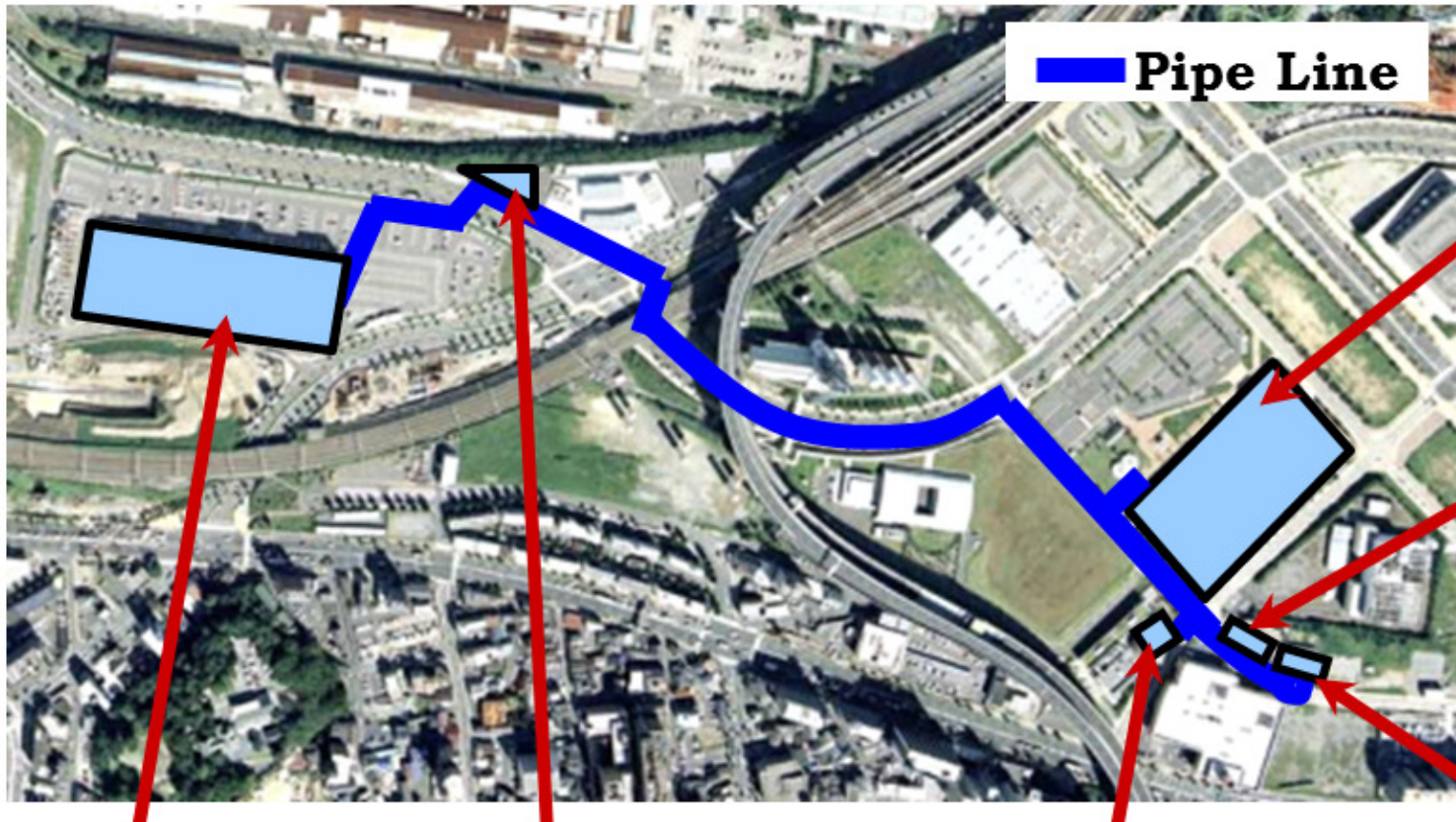
Higashida Co-Generation System with high efficiency operated by Nippon Steel Corporation



Kitakyushu Hydrogen Town

Yahata Higashida Area

Hydrogen by-produced in factory is being supplying to building and facilities.
This is a demonstration experiment at Higashida Area.



Museum
FC: 100kW × 1unit



FC Demonstration House
FC: 1kW × 7units



Eco Club House
FC: 1kW × 2units



Shopping Center
FC: 1kW × 1unit



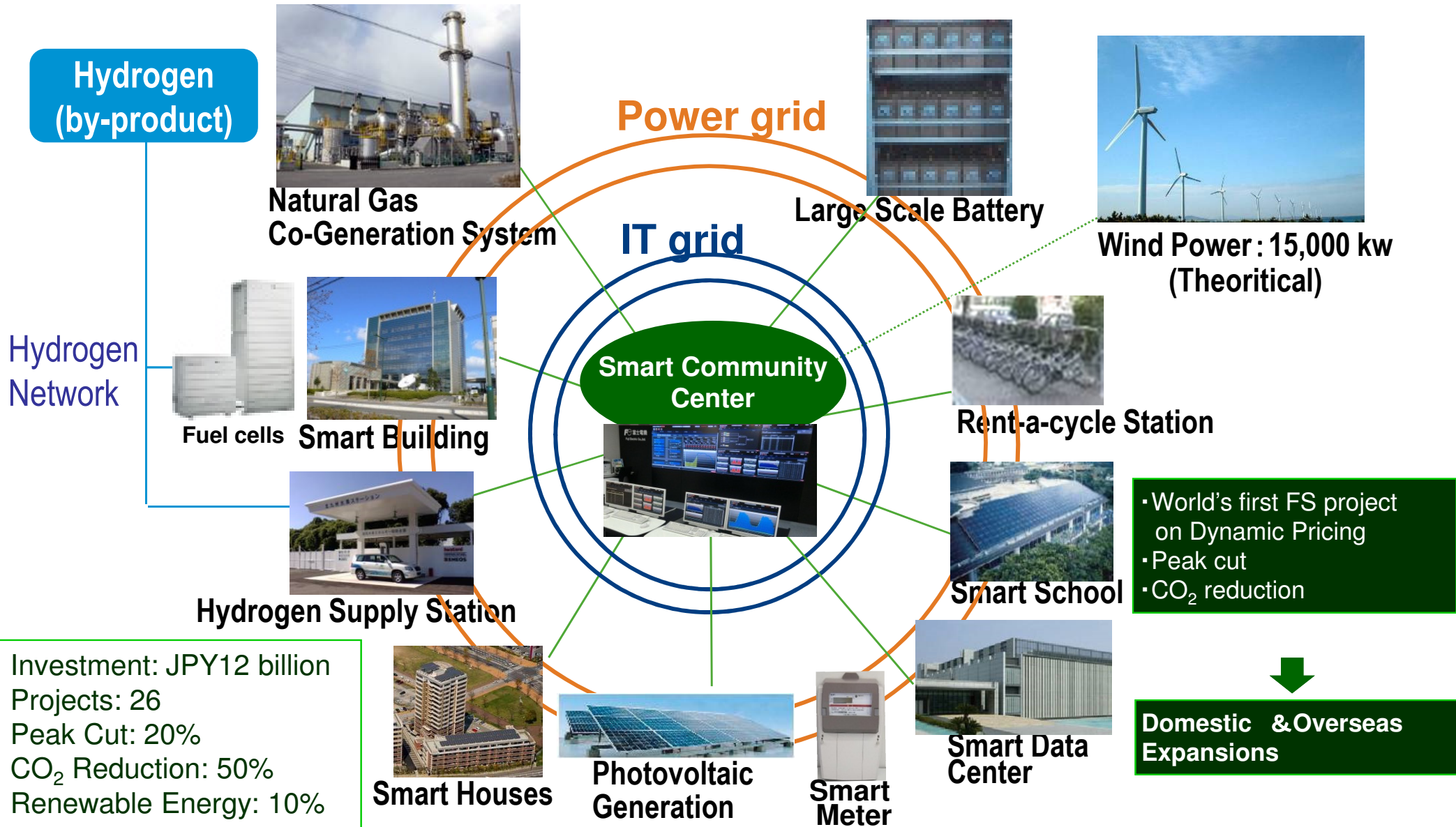
Kitakyushu Hydrogen Station
FC: 3kW × 1unit



Eco House
FC: 1kW × 1units

Kitakyushu Smart Community

Realization of optimized energy use per region, through coordination between new and mainstay energy sources and introduction of a control system for both energy supply and demand.



New Challenge: Kitakyushu Regional Energy Base Programme

Objectives:

- **Energy System with Low Carbon Emission, Stability, and Economic Advantage**
 - **Energy to Citizens' and Industrial Sustainable Activities**
 - **Preferable Situation for Private Enterprises**
 - **Contribution to not only Kitakyushu but also across the Kyushu Region**
- ⇒ **Towards promoting Green Growth**

Contents:

- Feasibility Study on Power Project (2.5 million kW) and Environmental Impact
- High Efficiency Power Plant and Renewable Energy including Offshore Wind
- Regional Energy Management System including Demand Management



Low Carbon Building: Energy Service Companies

ESCO programme allows ESCO companies to offer resources such as technology, facilities, experts, funding for energy saving equipment.

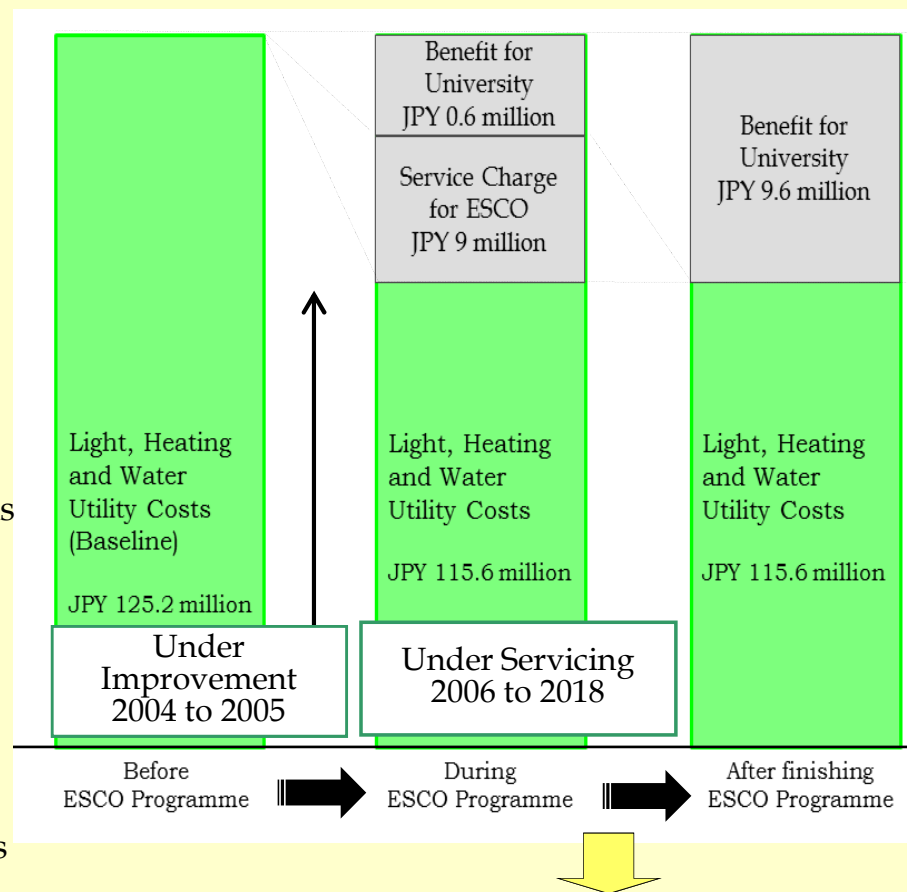
ESCO companies guarantees energy saving impacts, including cost savings.

ESCO programme in the University of Kitakyushu



Contents of Implementations

- Increasing efficiency of transformers
- Introduction of light with inverters
- Reduction of number of fluorescent lights by using reflectors;
- Adhering solar control films on windows, etc.



Nippon Steel Memorial Hospital



Contents of Implementation

- Increasing boiler efficiency
- Upgrading to high-efficiency boilers, etc.



Effect after improvements : Energy saving of **138kl** oil per year and CO₂ reduction of 360 tons as compared with prior to programme implementation.

ESCO company guarantees: JPY 9 million per year

Policies on Green Economy

Making industry to Green

- ① Production Process
- ② Green Products, etc.

Green Growth In Industry

Industrialization of Green Policy

- ① Recycling Industry
- ② Pollution Control Industry
- ③ Energy Industry, etc.

Energy Conversion

Coal → Oil → LNG
Renewable Energy

Cleaner Production

Energy Saving Process

Nippon Steel: Continuous Casting
Sumitomo Metals: Separated Process
Nippon Cokes: CDQ, etc.

Green Products

Yaskawa Electric: AC Drive for Energy Saving
TOTO: Water Saving Equipment (Eco-Single, etc.)
Mitsubishi Chemical: New Typed PV
Nippon Steel: Electrical Steel Sheet
ECO PREMIUMU, etc.

Recycling Industries: Kitakyushu Eco-Town

West Japan Home Appliance Recycle: Home Appliance
West Japan Automobile Recycle: Vehicles
West Japan PET Bottles Recycle: PET Plastic Bottles, etc.

Energy Related Industries

NS Wind Power Hibiki: Wind Power
Shibaura: Solar Power, etc.

Pollution Control Equipment Industries

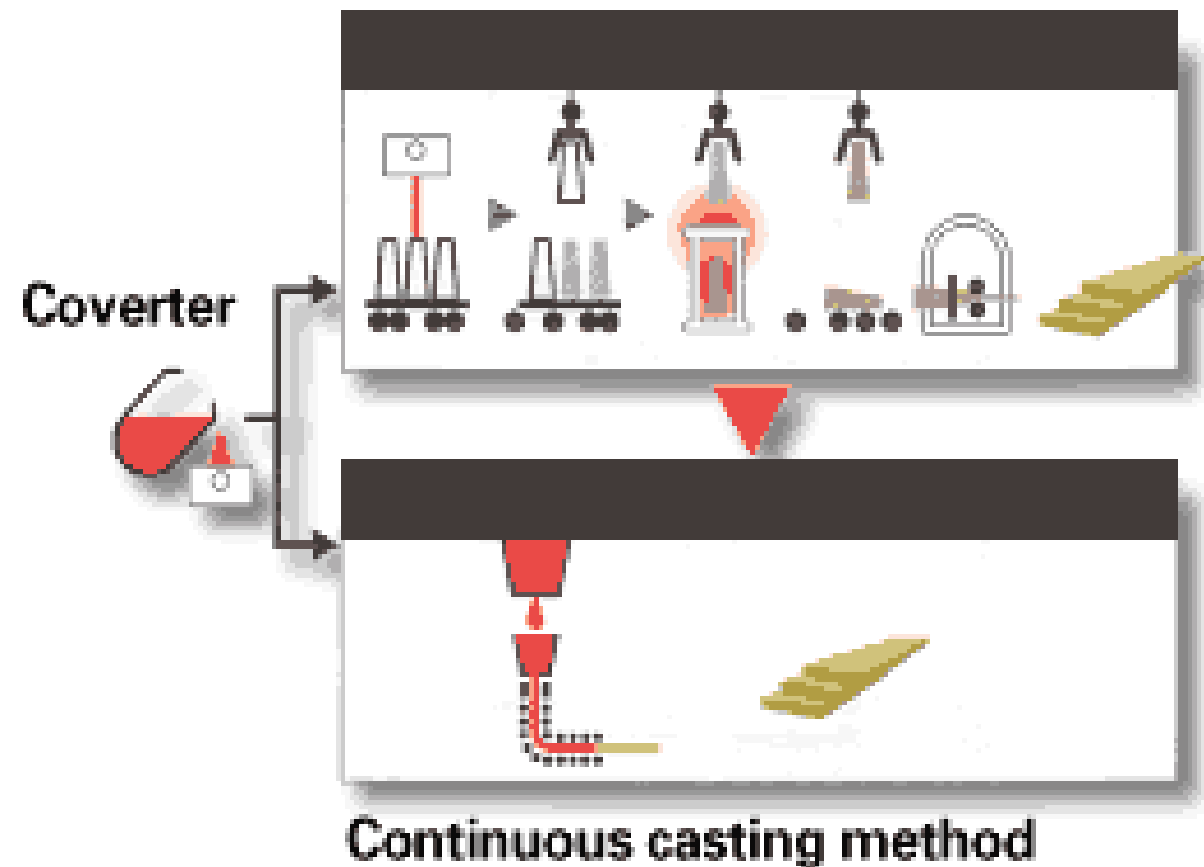
Nippon Steel Kankyo Engineering: Waste Water Treatment
Shiraishi Iron Works: Desulfurization Facility, etc.

Cleaner Production in Private Enterprises

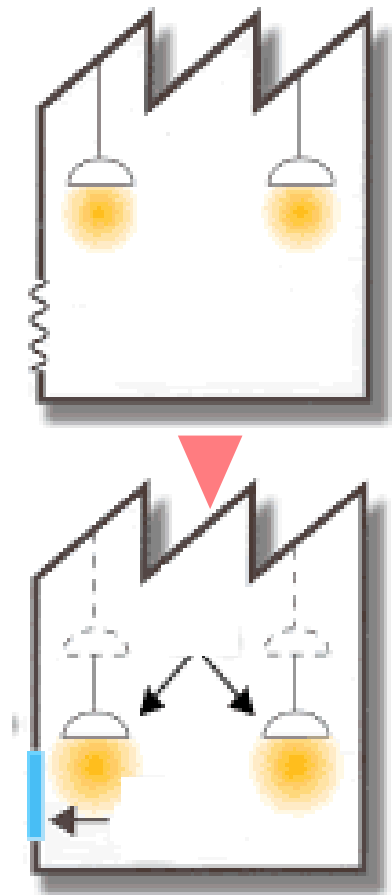
Success of Win - Win Approach (Economy and Environment)

Example 1

Ingot Casting / rolling of blooms method

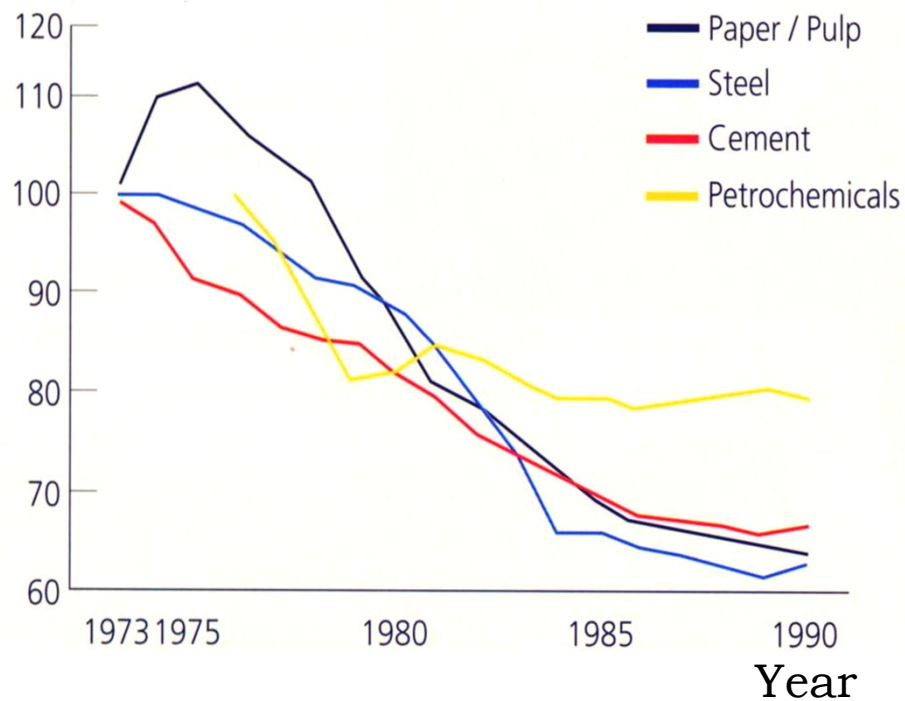


Example 2

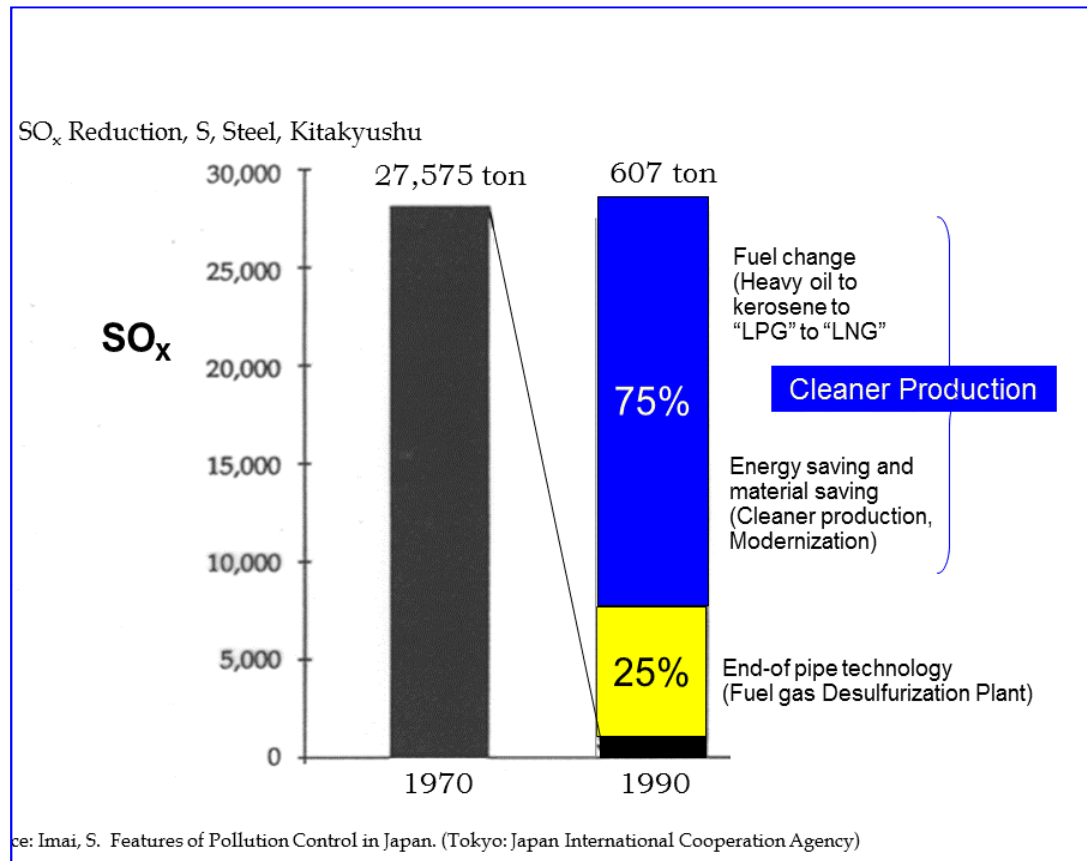


Outcome of Cleaner Production Approaches

Energy Consumption per
Unit of Production (by weight)
Index (1973 = 100)



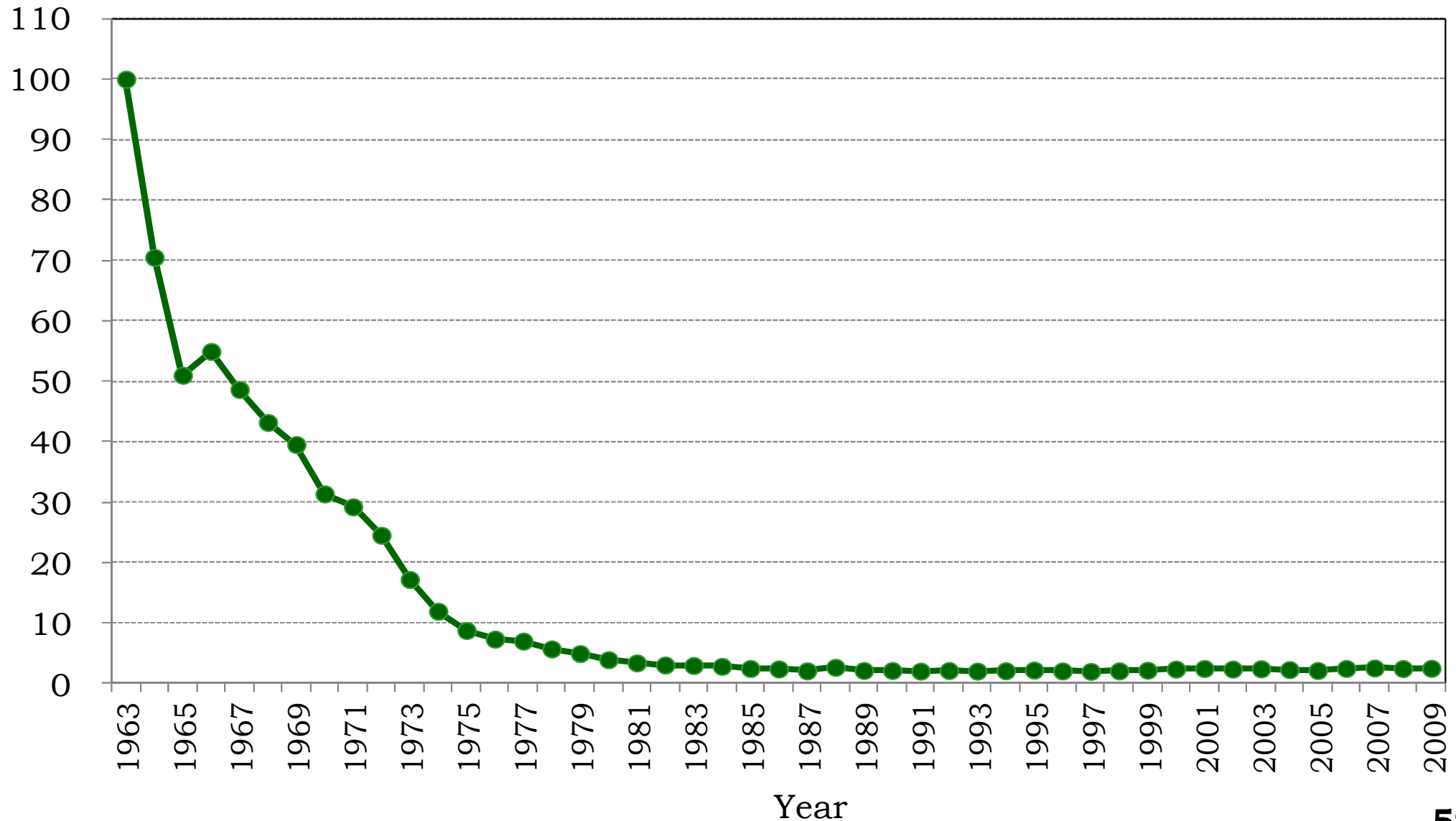
Energy Saving
in Industrial Sector
in Kitakyushu



Cleaner Production:
Improvement of Productivity
and Reduction of Pollutant

Improvement of Productivity: CO₂ Emissions per Production in Kitakyushu

CO₂ Emissions per Net Domestic
Product : 100 in 1963



Green Products produced from High Efficient Process



TOTO, Ltd.
Water-saving
automatic faucet with a self-
power generation

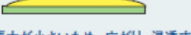


YASKAWA Electric Corporation
Inverter to contribute
energy saving
in production process



新開発の消火剤の特徴
<従来水滴(噴霧)>

水は大きな分子間力により、
表面張力が大きい
⇒ 水滴化(消火性能=低)

<新開発の消火剤>

表面張力が小さいため、広がり、浸透する。
⇒ ゴムやプラスチック等も覆うことができ、
消火性能が向上

**Shabondama Soap CO. & Kitakyushu City
Fire and Disaster Management Bureau**
Development of Small Amount Typed Fire
Extinguishing Compositions
with Less Environmental Load and
New Fire Fighting Strategy

World's Most Energy-Efficient

High energy efficiency is a key asset for Kitakyushu's heavy industry. Japan's steel manufacturing ranks as the world's most energy-efficient steel industry. Moving the iron and steel manufacturing products from Kitakyushu or Japan to another country would be likely to create more CO₂ emissions for same output. Kitakyushu's iron and steel industry offers a range of products with advanced energy performance

Reference: OECD Green Cities Programme Kitakyushu Report

Subsidy on Technology Research & Development for Future City

**Income from: City's Environmental Tax (Special-purpose tax)
on Industrial Waste Reclamation: 1,000yen/ton**

Subsidy to: Private Enterprises, Research Institutes

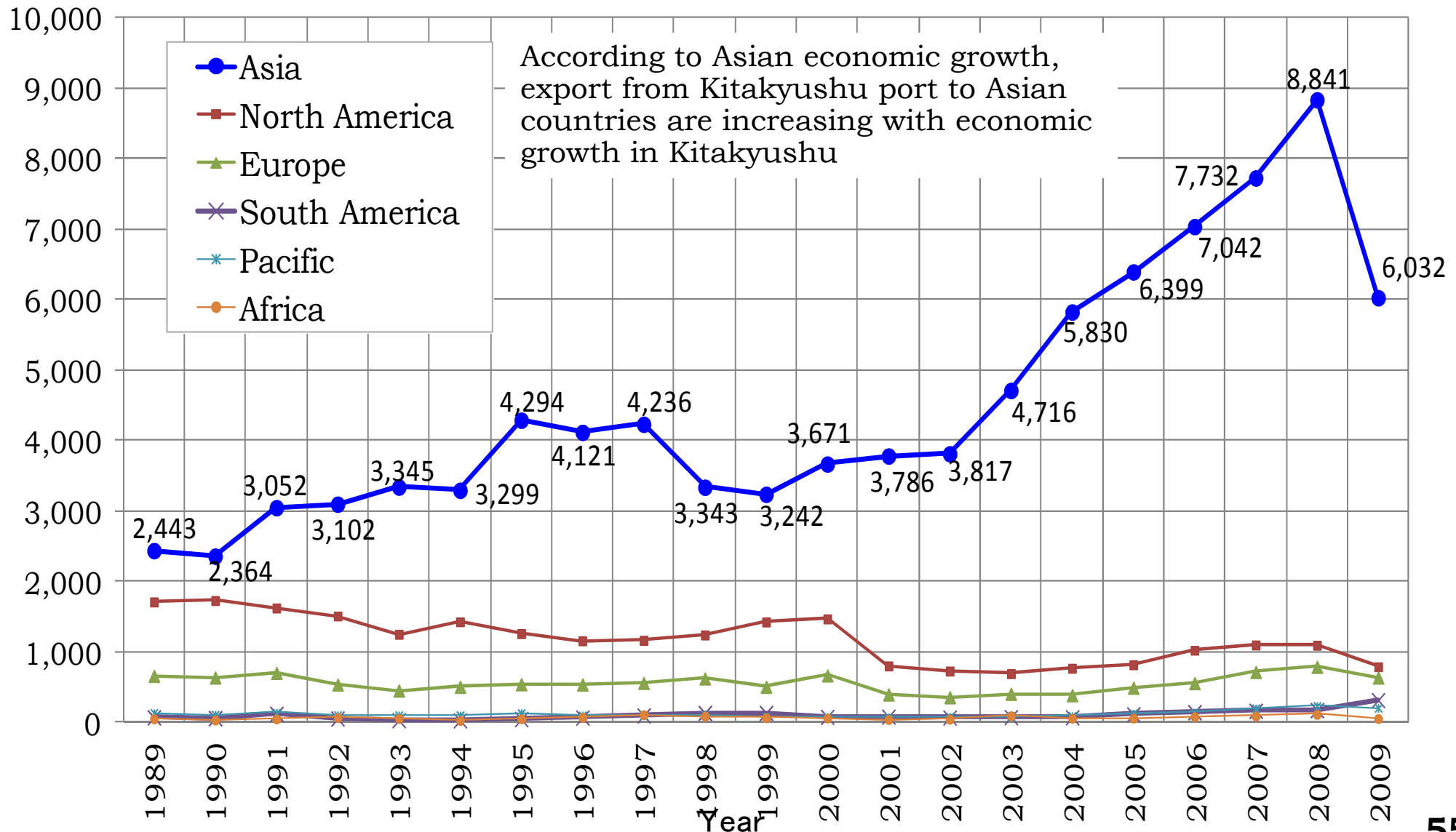
Object Fields	Subject	Ratio of Subsidy	Maximum
Feasibility Study	Companies in Kitakyushu or Companies Collaboration with Companies in Kitakyushu	1／3 or 2／3	JPY 2 million
Practical Research	Research Institutes in Eco-Town Area in Kitakyushu		JPY 20 million
Social Study	Companies in Kitakyushu or Companies in collaboration with Companies in Kitakyushu		JPY 2 million

Source: Environment Bureau, City of Kitakyushu

Export of Green-Products from Kitakyushu Port to Asian Countries

(Contribution to Asian Green Growth through Export of Green Products)

Hundred Million Yen



Green Products being exported for Global Contribution

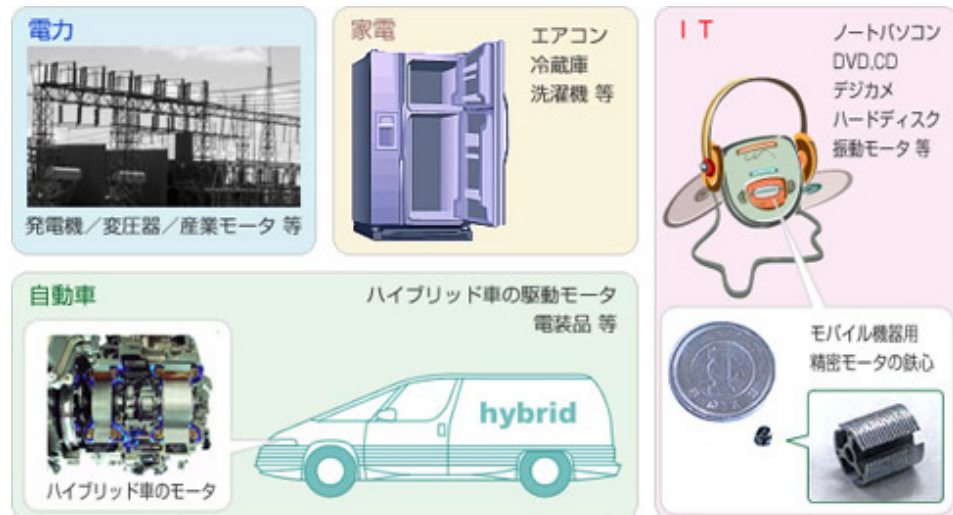
Nippon Steel and Sumitomo Metal's Electrical Steel Sheet

Nippon Steel offers high function steel in order to contribute to the weight reduction and higher energy efficiency of automobiles, ships, and so on; thereby helping to conserve energy and reduce CO₂ emissions.



Nippon Steel & Sumitomo Metals

Efficient electromagnetic plate and sheet which contributes to energy saving



<http://www.nsc.co.jp/eco/warming/product.html>

OECD Green Growth Studies: Green Growth in Kitakyushu, Japan, 2013, OECD

Moving the iron and steel production from Kitakyushu or Japan to another country would be likely to create more CO₂ emissions for the same output. Kitakyushu's iron and steel industry offers a range of products with advanced energy performance, such as flat rolls, magnetic steel sheets, thin sheets or surface-treated steel sheets. These products represent over 80% of iron and steel exported from Kitakyushu to China and about 75% of all products shipped.

Kitakyushu Eco-Town: Facilitating Resource Circulation and Eco-Industries



Practical Research Area
Practical Research Facilities : 16
Practical Research Projects : 56



Comprehensive Eco-Industrial Complex,
Hibiki Recycling Area
Industrial Plants: 29

Outcome of Projects

Environment: Reduction of Environmental Impact / 0.38 million ton CO₂,
Saving Resources and Energy

Economy: Investment: 66 billion yen
Private sector: 71.7%,
National Government: 18.2%, Local Government: 10.1%)

Employees: 1,340 people

Visitors: 1 million people (as of October 2011)

Promoting Eco Industry and Resource-Circulation in Eco-Town



Plastic PET Bottle Recycling Project



Office Equipment Recycling Project

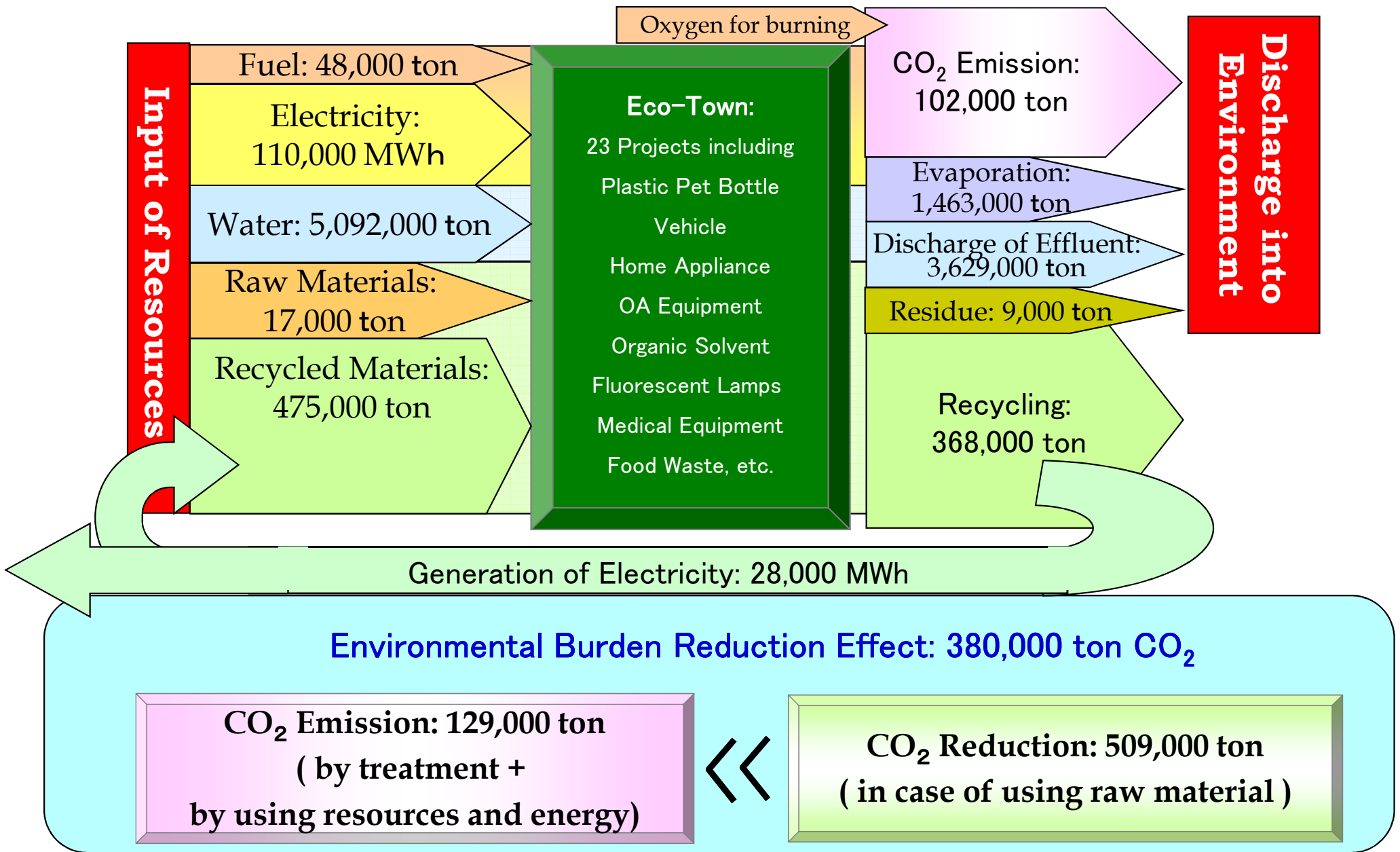


Home Appliance Recycling Project



Automobile Recycling Project

~CO₂ Reduction Estimated by Life Cycle Assessment~



Energy Park for Future Generation



New Challenge: Kitakyushu Regional Energy Base Programme



Eco Frontier Park

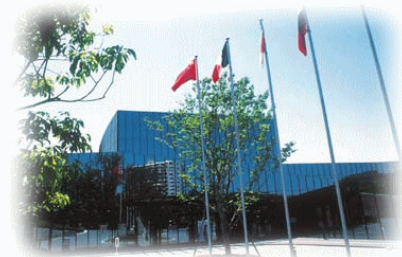


International Human Development for Sustainable Development

International Training Courses in Kitakyushu



Accepting International Trainees from Developing Countries:
150 countries, 7,453 people (as of 31 March 2014)
In collaboration with JICA and KITA



KITA: Kitakyushu International Techno-cooperative Association

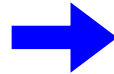
- *established in 1980 by local multi-stakeholders*
- *training programme, international network, friendly exchange*
- *supported by more than 200 organizations*

Outcome of Environmental Cooperation with Dalian, China

Dalian Environmental Demonstration Zone



air pollution



at present

- 1979 Friendship Cities Relation
- 1981 Pollution Control Seminar organized by Kitakyushu in Dalian, China
(Environmental Cooperation Activities)
- 1993 Kitakyushu proposed the “**Dalian Environmental Demonstration Zone**” as Chinese Cities’ Model
- 1996 Development Study on Environmental Improvement Plan by using of Japanese ODA
- 1998 Dalian’s Concrete Improvement Activities in cooperation with Kitakyushu
- 2001 UNEP Global 500 Award

Dalian Environmental Demonstration Zone

Concentrating Resources on a Model Project

Achieving Sustainable Development

Target : Kitakyushu’s Environmental Level by the Year 2010

Successful Approaches Transferred to Other Cities in China

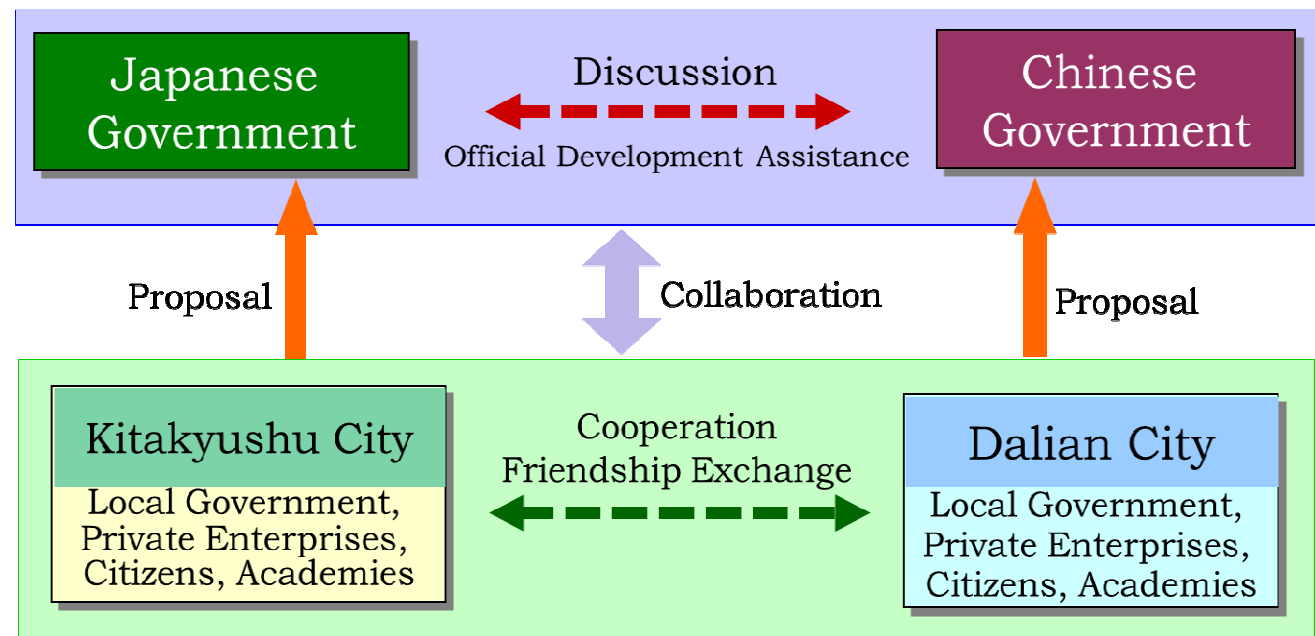
Success Factors: Environmental Cooperation with Dalian, China

- **Friendship Relations: face to face and mutual trust**
- **Sharing good practices and adjusting to local conditions**
- **Self-Effort by Cities**
- **Governance Capability and Improvement Plan**
- **Concrete Actions and Financial Resources**
- **Collaboration with National Government and International Community**

Development Study (ODA): JPY 600 million

Yen Loan: JPY 8.5 billion

Other Schemes

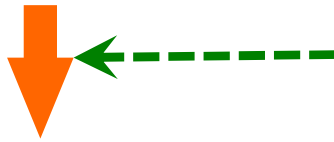


Outcome of Environmental Cooperation with Surabaya, Indonesia

Solid Waste Reduction and Composting



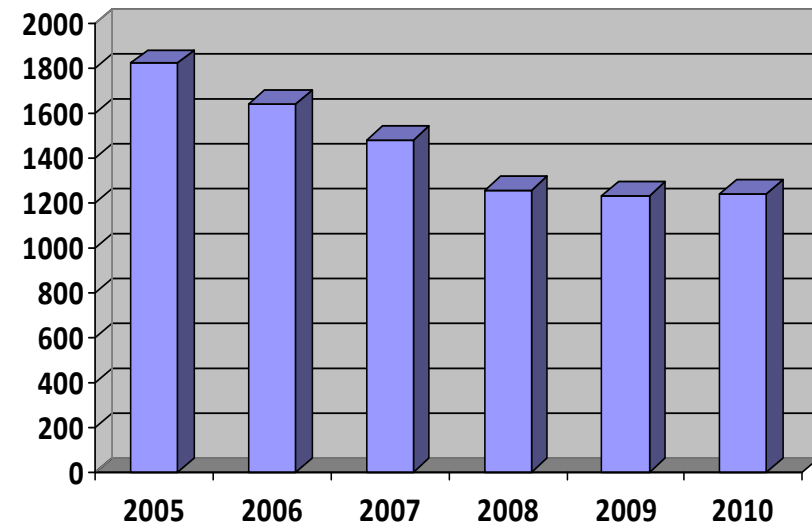
Environmental Pollution
at Landfill Site (Before)



Compost from Solid Waste



**Community-based
Composting System,**
*an expert from Kitakyushu
instructs how to make
compost*



**Reduction of Reclaimed
Solid Waste Amount**

Outcome: 30% reduction of solid waste landfill in Surabaya and

Expanded to more than 60,000 households, as well as other cities and countries

Success Factors: Environmental Cooperation with Surabaya, Indonesia

- **Friendship Relations: face to face and mutual trust**
- **Surabaya has traditional good community system and success experience on **Kampung Improvement Programme (KIP)** which is community participation programme**
- **Adding further know-how and technologies to traditional social system in Surabaya**
- **Active participation of citizen in Surabaya and friendship with Kitakyushu Expert**
- **Enthusiastic Actions by Surabaya City Government**
- **Appropriate Policy based upon Scientific Study and Plan**
- **Collaboration with National Government and International Community**
Development Study (ODA): JPY 25 million
JICA's Grass roots assistance for some years



Outcome of Environmental Cooperation with Phnom Penh, Cambodia

Water Supply Improvement

in 1993	→ Improvement →	in 2006	
22 people	Number of Personnel / 1,000 Water Tap	4 people	
65,000	Water Supply in Maximum (m ³ /day)	235,000	
25%	Diffusion Ratio of Water Supply	90%	
10 hours	Operation Time	24 hours	
0.2 kgf/cm ²	Average Water Pressure	2.5 kgf/cm ²	Possible for Direct Supply up to 3rd Stories
26,881	Number of Household Served	147,000	
72%	Ratio of Non-Revenue Water	8%	Same level as Kitakyushu
48%	Ratio of Payment for Water Charge	99.9%	

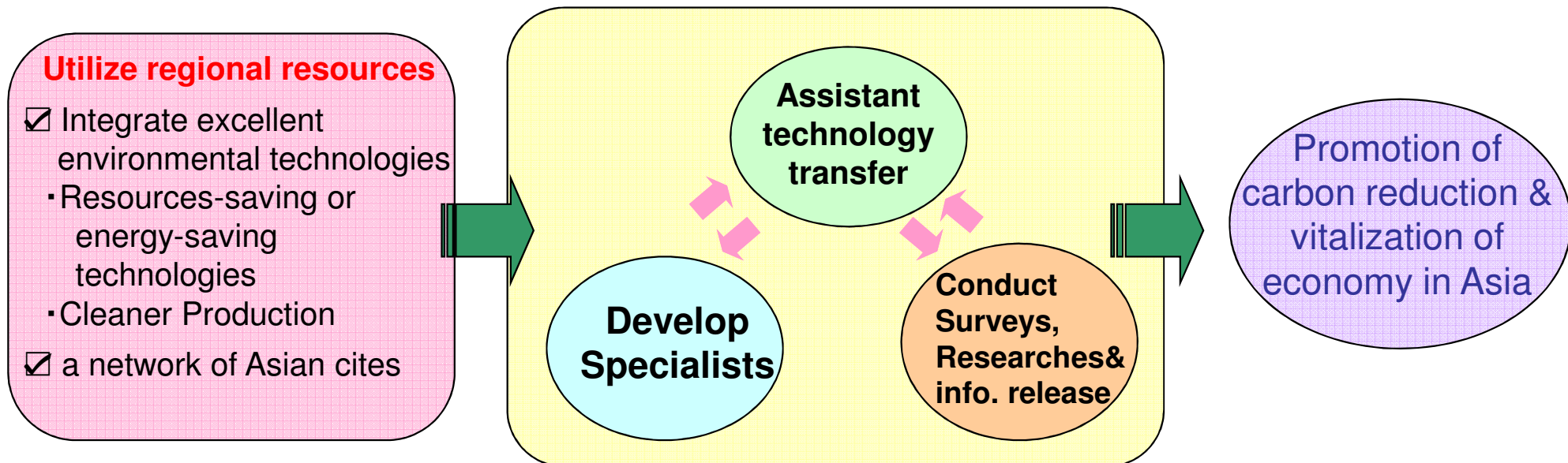
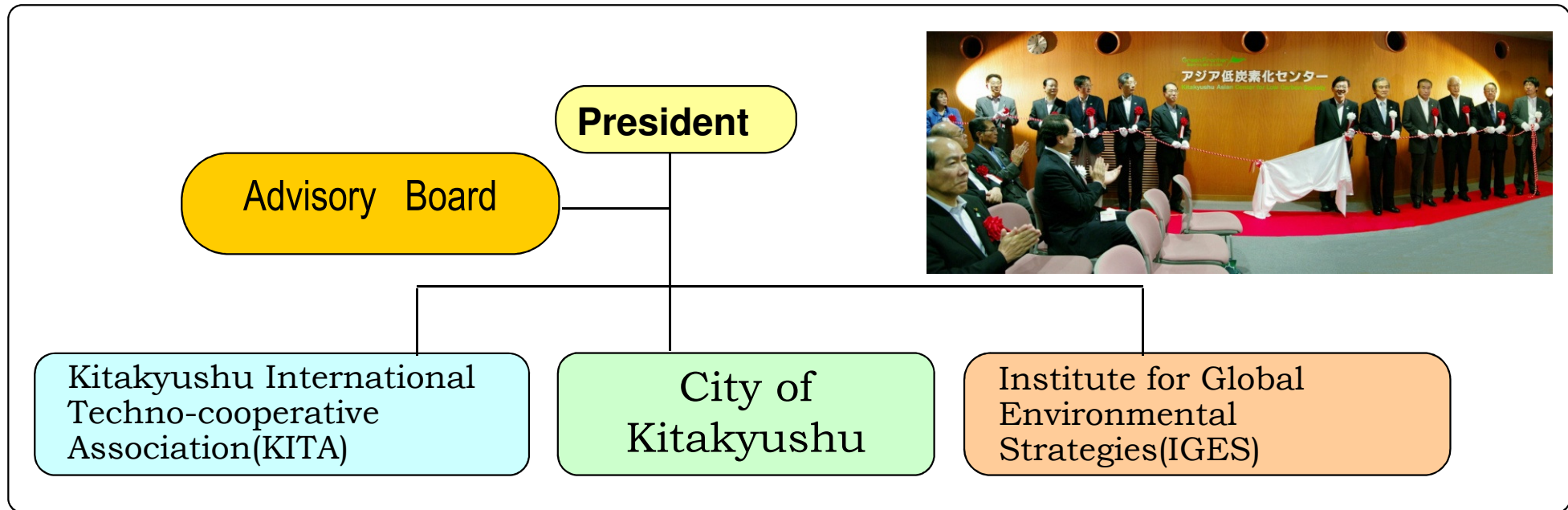
At present, there has been improvement in hygienic condition of water supply and **residents can drink water directly from the tap.**

Success Factors: Environmental Cooperation with Phnom Penh, Cambodia

- **Understanding of Common Issues : Water supply is indispensable social system for supporting citizen's life. This is worldwide recognition.**
- **Long-term Collaboration Activities for improving Water Supply Infrastructure and Management Capability**
- **Joint Activities between Phnom Penh and Kitakyushu with common goal**
- **Realizing concrete improvement outcome (step by step)**
- **Assistance (Providing scheme and financing) by JICA**
 - 1999 Dispatching Kitakyushu's Experts to Phnom Penh*
 - 2003 Human Development Programme, and etc.*
 - Number of expert dispatched: 44 staffs of Kitakyushu*
- **Called as “Phnom Penh's Miracle”**



Kitakyushu Asian Center for Low Carbon Society



International Projects implemented by private enterprises **in collaboration with the Kitakyushu Asian Center for Low Carbon Society**

Projects and Related Companies

Energy Saving Project in Beijing, China

YASKAWA Electric Corporation, *Largest World Share in the field of Industrial Robots and Inverters in Kitakyushu*

Promoting Water Saving Equipment in Dalian, China

TOTO Ltd., *International Housing Equipment Company in Kitakyushu*

Promoting Waste Water Purification with Provision of License for Nitrate Nitrogen Removal Technology to Chinese Company in Dalian, China

Nippon Steel Chemical CO., Ltd., *Coal Chemical Company in Japan*

Promoting Recycling Business in India

Nippon Magnetic Dressing CO., Ltd., *Rare Metal Recovery and Circulation Company in Japan*

Promoting Recycling Business in Tianjin, China

Eco-Material Corporation, *International Recycling Business Company in Japan*

Received an order on the City of Siem Reap, Cambodia, related to water works planning project

Kitakyushu Water Supply Bureau and Hamagin Research Institute, Ltd.



Exchange of Citizens' Activities



Joint Organization of Seashore Cleaning



Organization for East Asian Economic Development, Member: 10 cities from Japan, China and Korea

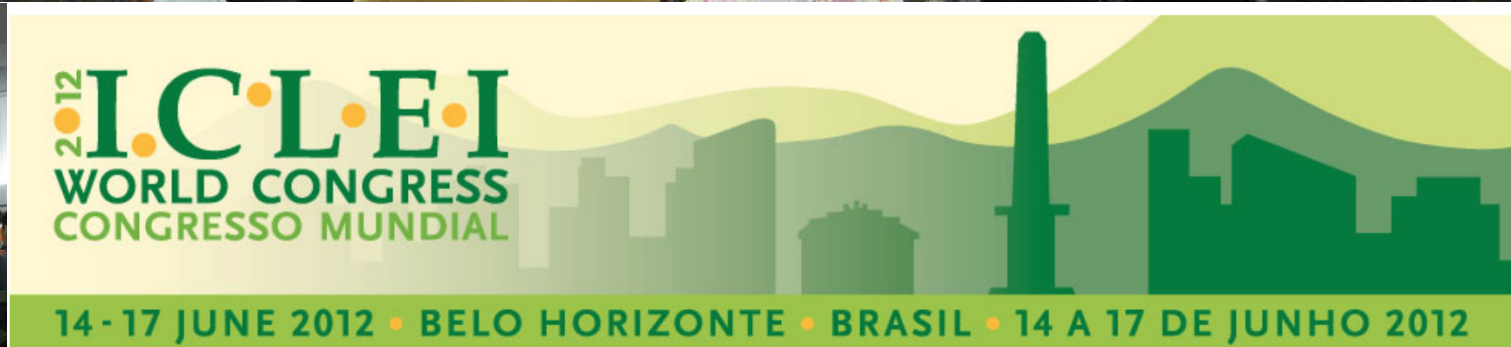


Cooperation Activity for Cleaning River in Cebu, Philippines
University Students from Kitakyushu jointed activity with Cebu People

International Cities Network

•I.C.L.E.I. Local Governments for Sustainability

Member: 1,100 cities of 83 countries



International Cooperation Towards Shared Prosperity and Sustainable Development

International Conferences / Forums during the Kitakyushu Eco Month

Kitakyushu, Japan 18th – 20th October 2013

OECD Green Cities Programme Commemorative Meeting on the Publication of the Kitakyushu Report

October 18, 2013, 15:00~17:00

Main Hall, Kitakyushu International Conference Center

Organizer: City of Kitakyushu, OECD Green Cities Programme Kitakyushu Team

Co-organizer: OECD



3rd International Forum on the “FutureCity” Initiative

October 19, 2013, 10:00~18:00

Main Hall, Kitakyushu International Conference Center

Organizers: Cabinet Secretariat, Cabinet Office, Promotion Council for “FutureCity” Initiative



Realizing a Sustainable City: Looking Towards the Post-2015 Development Agenda

October 20, 2013, 10:00~12:30

Main Hall, Kitakyushu International Conference Center

Organizer: Ministry of Foreign Affairs

Number of Participants: 2,300
Overseas: 50 countries



Promotion of Eco-Cities Network in Southeast Asia

October 20, 2013, 14:00~17:00

Main Hall, Kitakyushu International Conference Center

Organizer: UNIDO

Seminar on “FutureCity” Initiative
TRAINING AND DIALOGUE PROGRAMS
of the Japan International Cooperation
Agency (JICA)



Mayors Forum: Urban Green Growth in Dynamic Asia

October 20, 2013, 13:30~17:00

Int'l Conference Room, Kitakyushu International Conference Center

Organizer: OECD, Co-organizers: UNCRD, City of Kitakyushu

Asia-Pacific Regional Centres of Expertise (RCE) on ESD Meeting

October 20, 2013, 13:00-17:00, Nishinippon Institute of Technology (Kokura Campus)

Organizers: United Nations University Institute of Advanced Studies

Asia-Pacific RCE on ESD Meeting: International Symposium on Inspiring Sustainable Lifestyles

October 21, 2013, 13:00~17:00, Main Hall, International Conference Center

Organizers: RCE Kitakyushu (Kitakyushu ESD Council, City of Kitakyushu)



**Report on
the conferences and forums
by the Mayor of Kitakyushu City**

www.youtube.com/watch?v=IDn0MdpFYwc



Knowledge Sharing Platform



Mayors Forum:

Urban Green Growth in Dynamic Asia

*OCED organized in collaboration with
UNCRD and City of Kitakyushu
in Kitakyushu on 20 October 2013,*



Special Side Event at

7th Open Working Group on

Sustainable Development Goals

Sustainable Future Cities We Want

*Ministry of Foreign Affairs and JICA
in collaboration with UN Agencies
In UNHQ on 6 January 2014*

Kitakyushu's input into International Community

***“UN Second High Level Political Forum Ministerial Dialogue
on Sustainable Development”, UN New York, 8 July 2014***



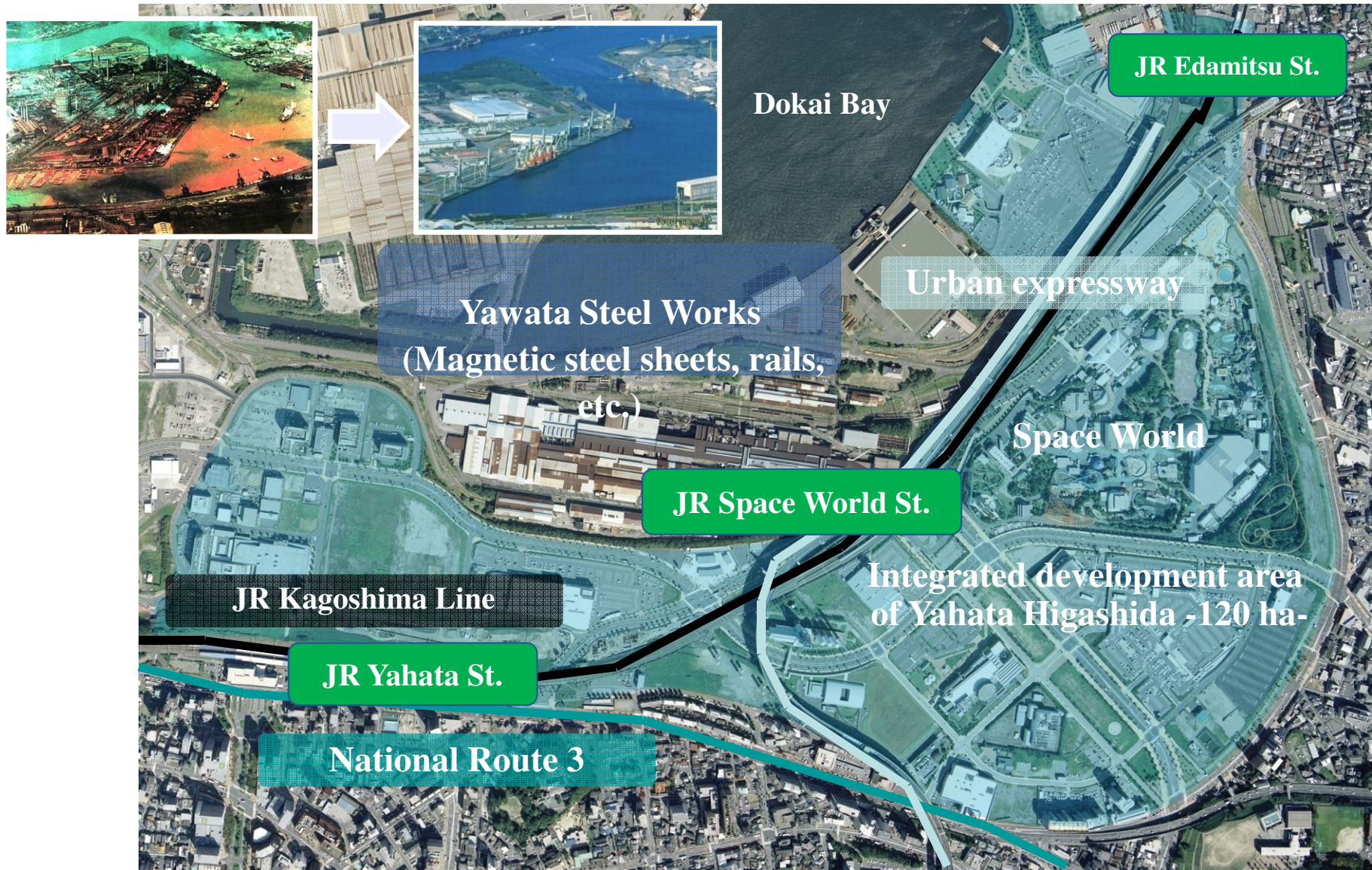
Sustainable funding mechanisms to create a smart city Under Public Private Partnership

- 1. Smart city development at a former industrial site:
Kitakyushu Smart Community**
- 2. Eco-industry promotion at a reclamation site: Kitakyushu
Eco Town**
- 3. Japan's environmental exports to realize smart cities in Asia**

1. Smart city development at a former industrial site:
Kitakyushu Smart Community

1. Smart city development at a former industrial site: Kitakyushu Smart Community

Phase 1. Integrated development of Higashida district: Urban infrastructure upgrade (Overview)



- A large-scale urban redevelopment project at the center of Kitakyushu, a city of about one million
- Promoting sustainable development with the symbiosis of industrial and residential zones

1. Smart city development at a former industrial site: Kitakyushu Smart Community

Phase 1. Integrated development of Higashida district: Urban infrastructure upgrade (Details)



Integrated development of Higashida
(30% CO₂ reduction, compact district)

Infrastructure improvement by cooperative
public-private investments

Redeveloping a former extensive industrial site
Advanced urban infrastructure and an eco-friendly
next-generation district; Area: 120 ha



Former industrial site

Typical upgrade by the private sector

Housing: Livio Higashida Villecourt

Commerce: AEON shopping center

Healthcare: Higashida Clinic

Amusement: Space World (private firm)

Invited companies: Japan Telecom

Cogeneration (33,000 kW)

Supplies electricity to town and
steam to factories

Hydrogen: Industrial by-product
supplied via a pipeline

Exchange: Eco Club (private-run community center)



Upgrade by public & private sectors

Solar power: Public/private facilities

Traffic: Car/bike sharing, new JR stn.

Upgrade by the public sector

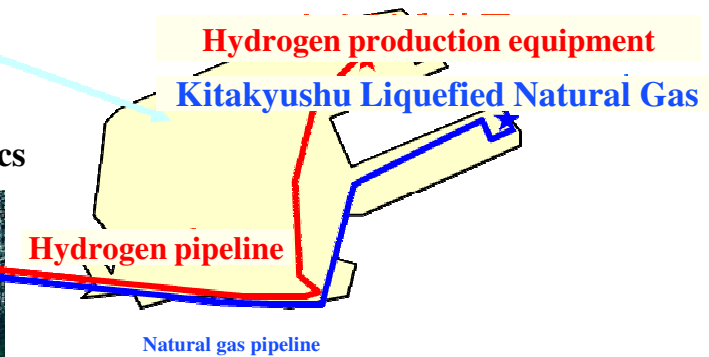
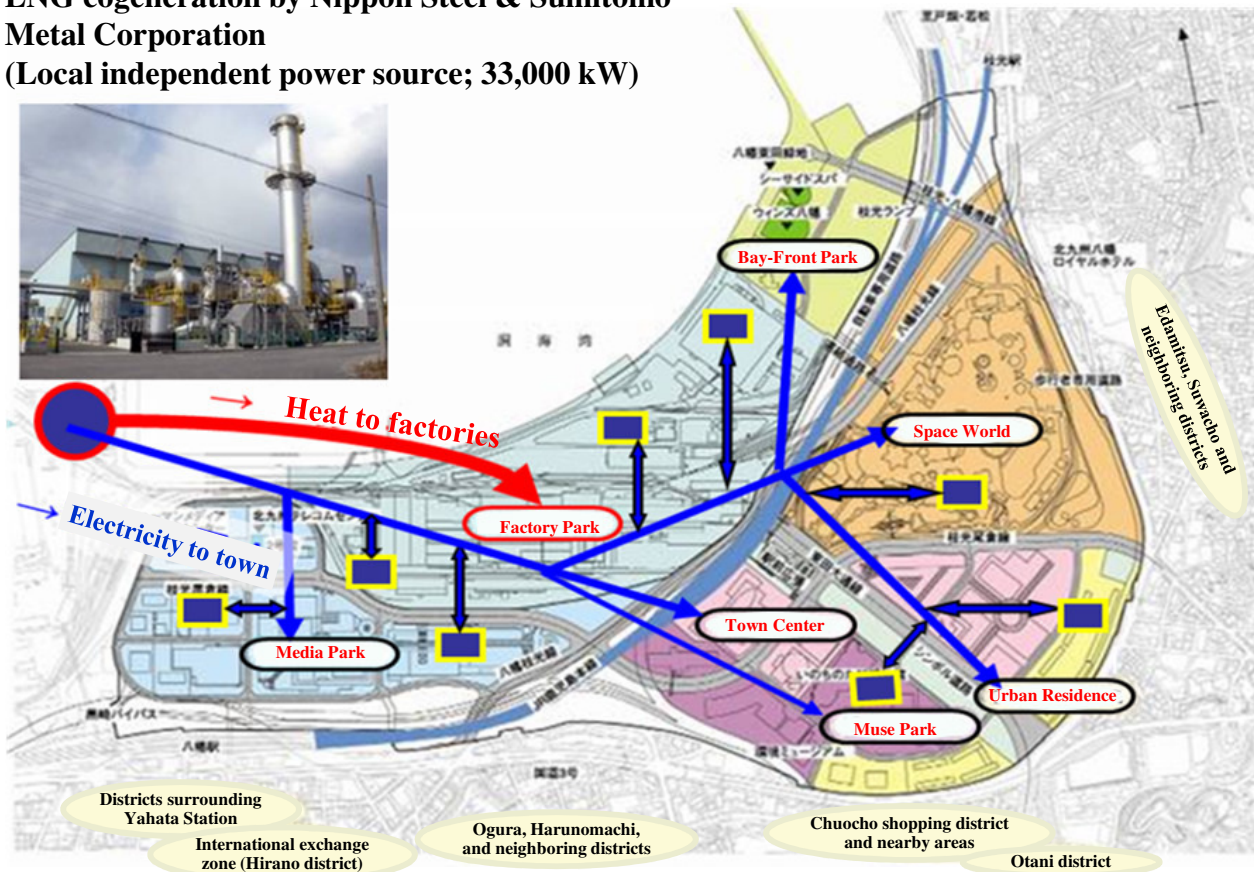
Education: Environment Museum,
museum, etc.



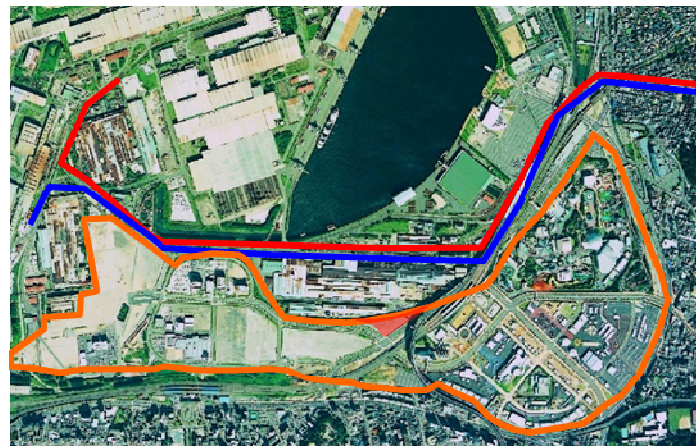
1. Smart city development at a former industrial site: Kitakyushu Smart Community

Phase 1. Integrated development of Higashida district: Urban infrastructure upgrade (Energy)

LNG cogeneration by Nippon Steel & Sumitomo Metal Corporation
(Local independent power source; 33,000 kW)



A hydrogen-based society demonstration project using by-product from steelworks
“Hydrogen-used social system building demonstration project” (METI)



1. Smart city development at a former industrial site: Kitakyushu Smart Community

Phase 1. Integrated development of Higashida district: Urban infrastructure upgrade (Business/funding schemes)

Using the Government's institutional developments and subsidy systems

- A special logistics district: cogenerated electricity, car sharing (Japan's first) (deregulation)
- A project to cut CO₂ by 20% throughout the district: eco-friendly apartments (subsidized)
- Designated as a model district in the urban revitalization plan "eco-friendly town building"
- Designated as a model area for global warming & heat island countermeasures, etc.

Private investments

Invited companies,
commercial/amusement facilities,
public transportation,
eco-friendly housing, etc.

*Made after completion of the land
rearrangement project following a
basic survey on the development

Financial/institutional support

Investment



Development
profit



Integrated development of Higashida district

Local residents
Invited companies/groups
Customers, tourists, etc.

Land acquisition cost



Land
required

Infrastructure
upgrade



Land rearrangement project (co-managed by companies and the City)

- Upgrade of road, land, other infrastructure (for improved convenience)
- Public-private investments partially recovered by profit on land sale

- | | |
|------|---|
| 1987 | A survey on the basic concept of Higashida district development (Kitakyushu City) |
| 1987 | Urban redevelopment offered by Kitakyushu City to companies |
| 1993 | The urban plan determined |
| 1995 | Land rearrangement approved by the Government |
| 1999 | The new JR station opened (railroad transfer cost: about ¥10 billion) |
| 2001 | Japan Expo Kitakyushu |
| 2002 | The land rearrangement project completed (cost: about ¥46.5 billion) |
| 2003 | Designated under the eco-friendly town building concept |
| 2004 | The Higashida Town Building Conference launched (by 62 companies) |
| 2005 | Supply of cogenerated electricity started |
| 2009 | The Smart Community project adopted |

Improve infrastructure by the public & private sectors to invite business investments and public activities

1. Smart city development at a former industrial site: Kitakyushu Smart Community

Phase 1. Integrated development of Higashida district: Urban infrastructure upgrade (Local Players)

Higashida, a place where people with hopes work together
★ People who support a dream of town building and respond to the dream with their hopes ★

Town building with various players

I was given a place, and successfully launched a car-sharing business!

So lucky that the business is supported by people in Higashida!

Ueki-san

NPO法人 タウンモバイルネットワーク北九州



カーシェアリング



サイクルシェアリング



I've got the best place for environmental learning!

I love Higashida, where past, present, and future all exist!

Morofuji-san

環の学び工房 代表



環境ミュージアム



まちづくり勉強会

Operating Higashida Eco Club



I introduce the concept of "satoyama" to town building!

Seki-san

NPO法人 星山を考える会 代表



年末恒例！もちつき大会

Higashida Eco Club



A place for everyone to enjoy working together



社長会館 室々ごみひろい



東田花壇

Higashida is the best place for a model environmental city to demonstrate itself!



Kitakyushu City Office



自派プロジェクト



I support everyone's dream of town building!

Iwashina-san

◆都市開発ディレクター
◆生涯現役 夢追熟 運営委員長



25時間ウルトラ駅伝大会



住民による緑地

A mastermind of the town building project



未来はたのび

I've got a place to effectively use factory energy!

Factories are also members of the town!

Amioka-san

新日本製鐵（株）総務部 開発企画Gr.



東田コジェネ ※街へ電力・工場へ風熱を供給

I've got a place to scientifically test low-carbon society!



Kankyo Passport ("Kampas") is a platform of civic activities in Japan!

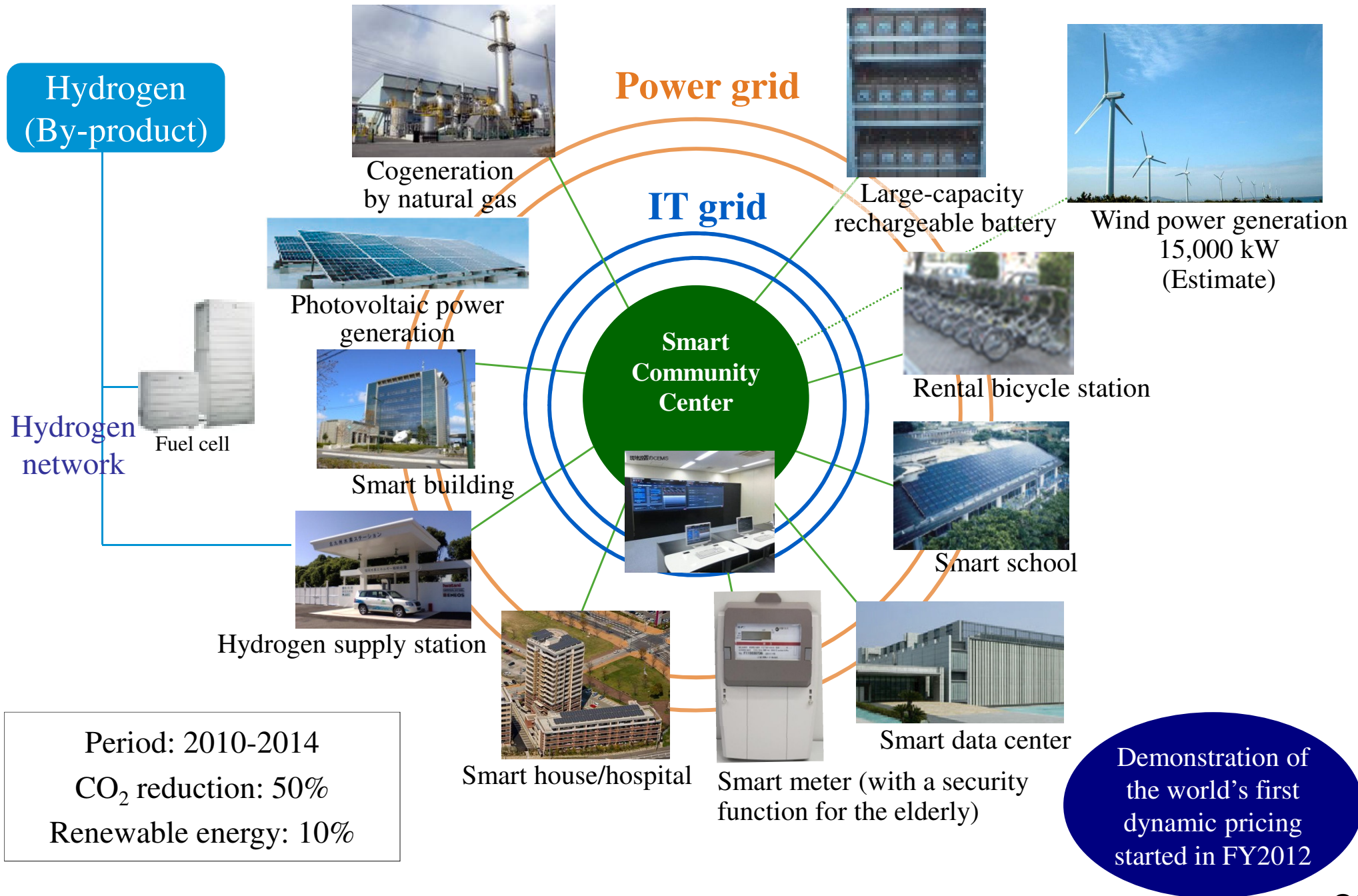
Nagai-san

早稲田大学環境総合研究センター



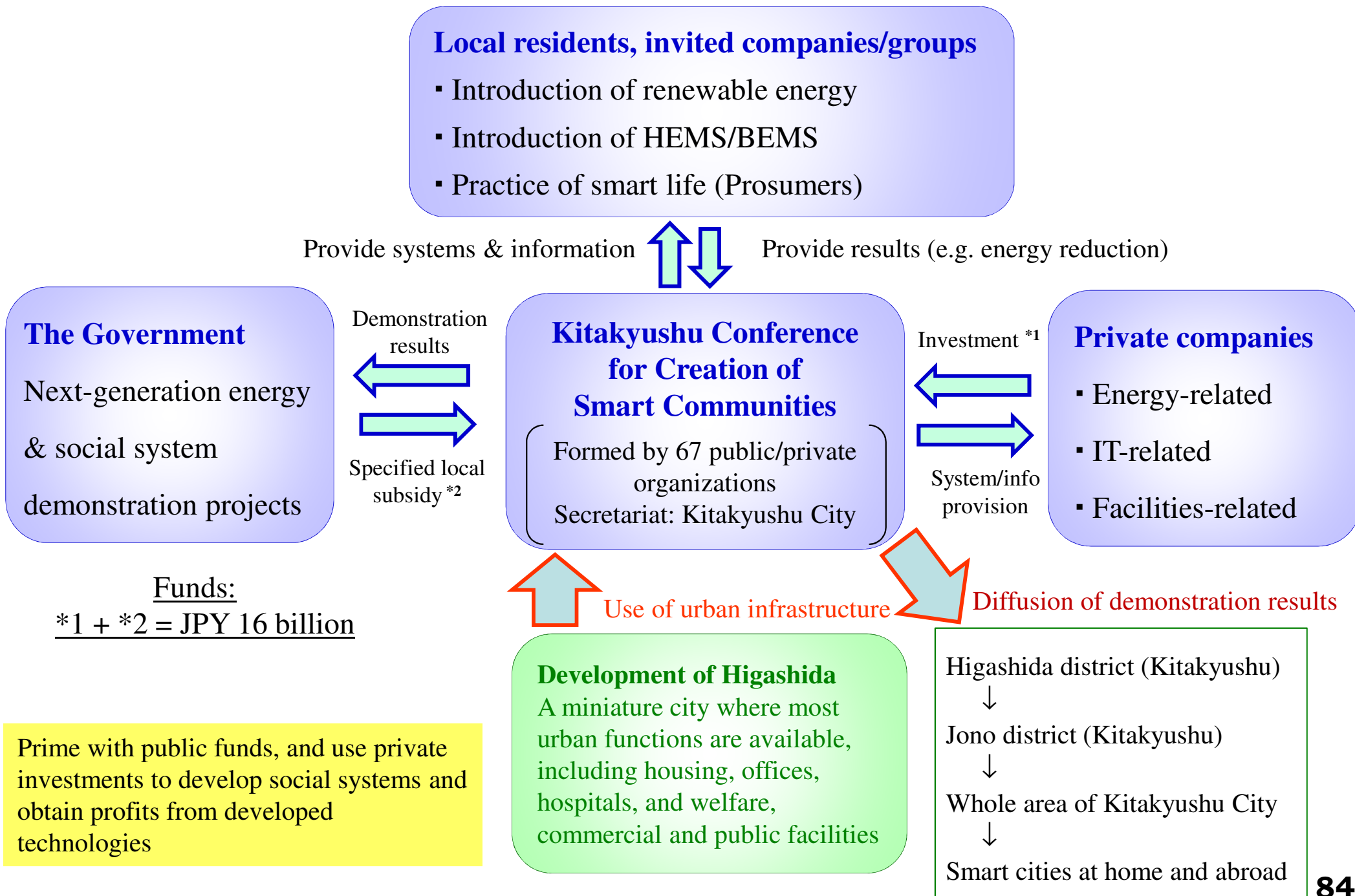
1. Smart city development at a former industrial site: Kitakyushu Smart Community

Phase 2. Kitakyushu Smart Community: Adding smart city functions (Overview)



1. Smart city development at a former industrial site: Kitakyushu Smart Community

Phase 2. Kitakyushu Smart Community: Adding smart city functions (Scheme)



2. Eco-industry promotion at a reclamation site: Kitakyushu Eco Town

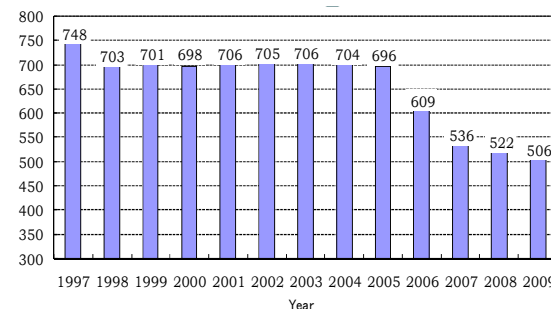
2. Eco-industry promotion at a reclamation site: Kitakyushu Eco Town

Kitakyushu Eco Town in a recycling social system (Positioning: business scheme)

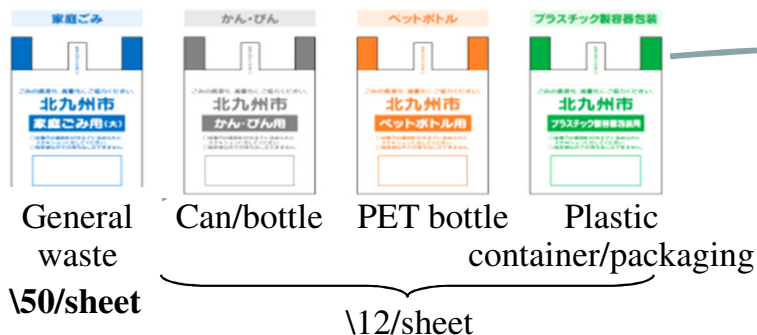
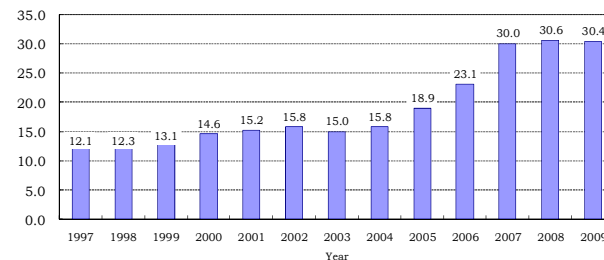
Per-capital volume of waste generated in Kitakyushu City is at the world's lowest level (OECD, 2013)

Waste reduction and recycling expansion

Generation of general waste (g/day/person)



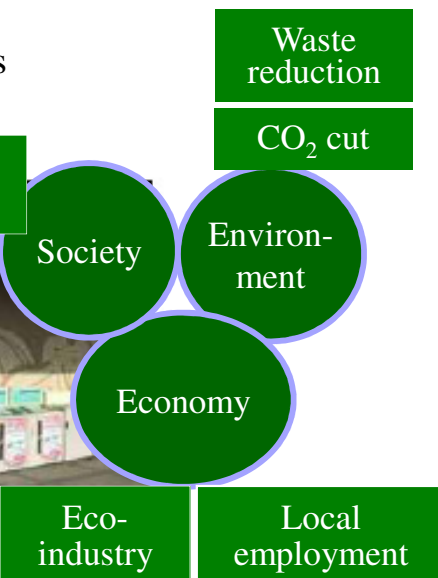
Recycling rate (%)



Waste separation at home (differential pricing as an incentive for waste reduction)



Resource recycling station



Can/bottle recycling center employing disabled people



Recycling industry & facilities for experimental studies

Kitakyushu Eco Town:

2. Eco-industry promotion at a reclamation site: Kitakyushu Eco Town

Kitakyushu Eco Town Project (Overview)



PET bottle recycling project



Waste OA equipment recycling project



Waste home appliance recycling project



Automobile recycling project

Experimental study area (16 projects) Integrated ecological complex (about 30 projects)

Environment: CO₂ cut: 380,000 t/year; resource/energy saving
Economy: Investment: JPY 66 billion (city : state : private = 1:2:7)
 Employees: about 1,340 (including temporary workers)
 Inspection visitors: 1 million (1998 - Dec 2011)

Kitakyushu City

Unified window for legal procedures

Infrastructure improvement

Financial support

Support for research & development

Support for entrance & exit

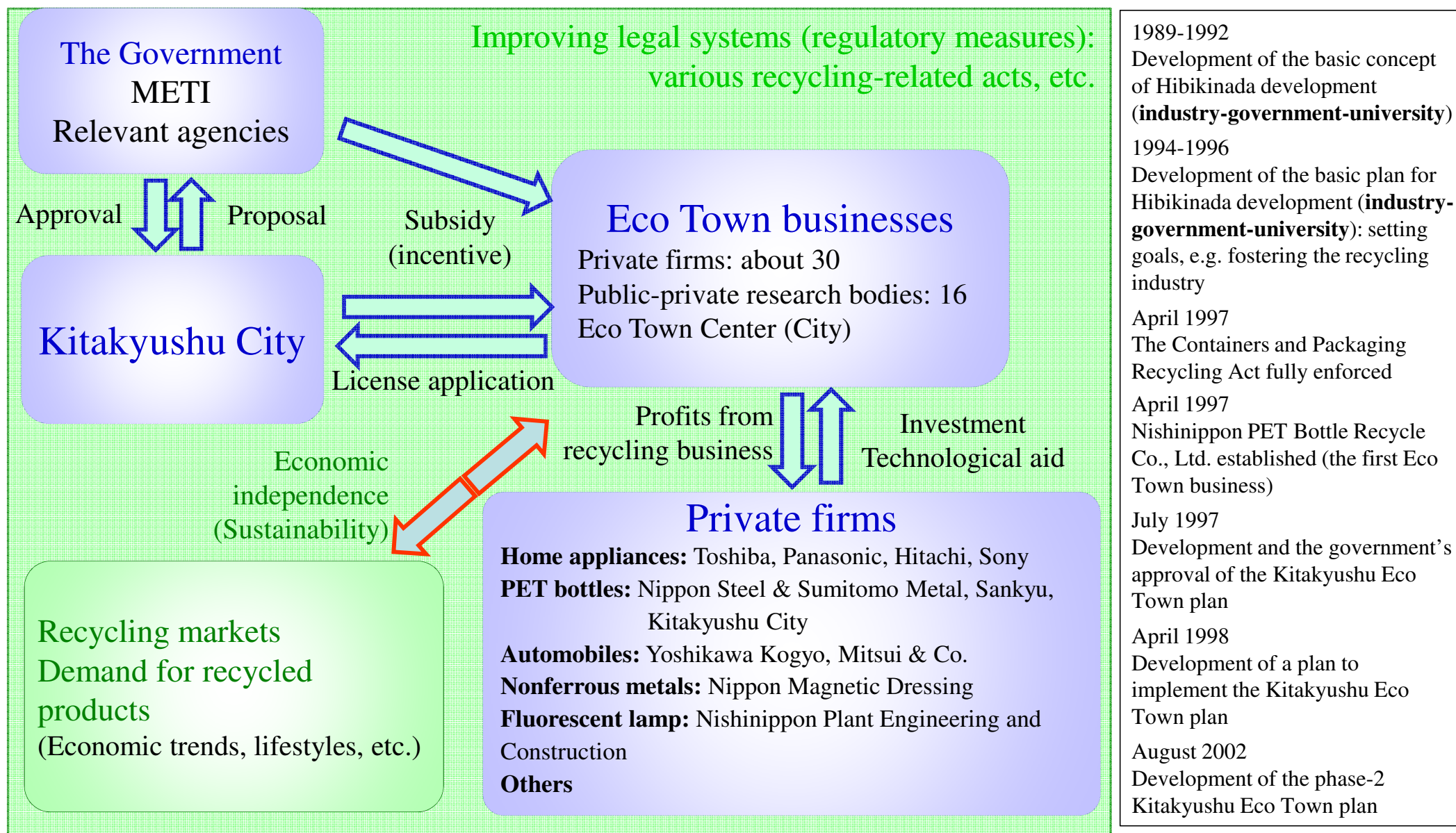


Utilization of local resources:
 Vast site (2,000 ha); private technological stock,
 disposal facilities, port functions, etc.

Name of a recycling or other project	Public funds used (grant-aided projects)
• PET bottle recycling project	METI grant-aided project for eco-towns
• OA equipment recycling project	METI grant-aided project for eco-towns
• Automobile recycling project	METI grant-aided project for eco-towns
• Home appliance recycling project	METI grant-aided project for eco-towns
• Medical device recycling project	METI grant-aided project for eco-towns
• Cooking oil recycling project	MAFF grant-aided project
• Wind power generation project	METI project to support new-energy business operators
• Waste wood/plastic recycling project	METI grant-aided project for eco-towns
• Wind power generation project	METI project to support new-energy business operators
• Used paper recycling project & foaming inhibitor manufacturing project for steel making	METI grant-aided project for eco-towns
• Molten fly ash recycling project	Fukuoka Prefectural grant-aided project to improve recycling facilities

2. Eco-industry promotion at a reclamation site: Kitakyushu Eco Town

Kitakyushu Eco Town Project (Public-Private Partnership & Funding Scheme)



Explore local development (plans) under public-private cooperation. Commercialize using social systems, procedures, and financial support by the government and business investment by private firms. Recover investment and grow by business profits.

3. Japan's environmental exports to realize smart cities in Asia

3. Japan's environmental exports to realize smart cities in Asia

International environmental cooperation with a Chinese city and eco-market formation (Overview)



Environmental pollution (1994)



Improved environment (today)

Co-development of a **plan for environmental improvement**
(Technological cooperation)
Air, water, waste, energy,
industry/urban infrastructure
Implementation of **voluntary projects for improvement**
(Yen loan, etc.)

Results of environmental improvement and formation of new environmental policies (markets)

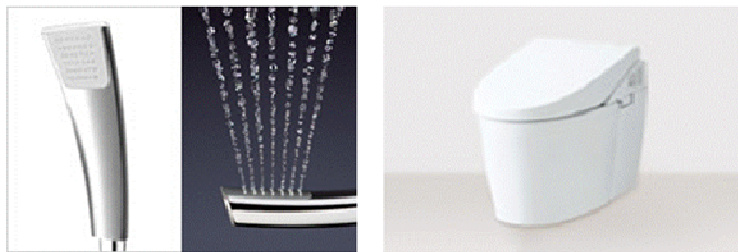


Exports to eco-markets: Infrastructure (hard) and know-how (soft)

Ex

Diffusion of water-saving housing equipment in Dalian A Kitakyushu company (international manufacturer of housing equipment)

- Methods to measure reduction of water-derived CO₂ emissions
- Emission-reduction credit between two cities/countries
- Planning to introduce measures to diffuse water-saving equipment



Based on a new-mechanism feasibility survey by the environment ministry

Water purification project in Dalian A corporation in the city (coal-chemical company)

Licensing to a Dalian company a technology to remove ballast-water pollutants
(March 2011)

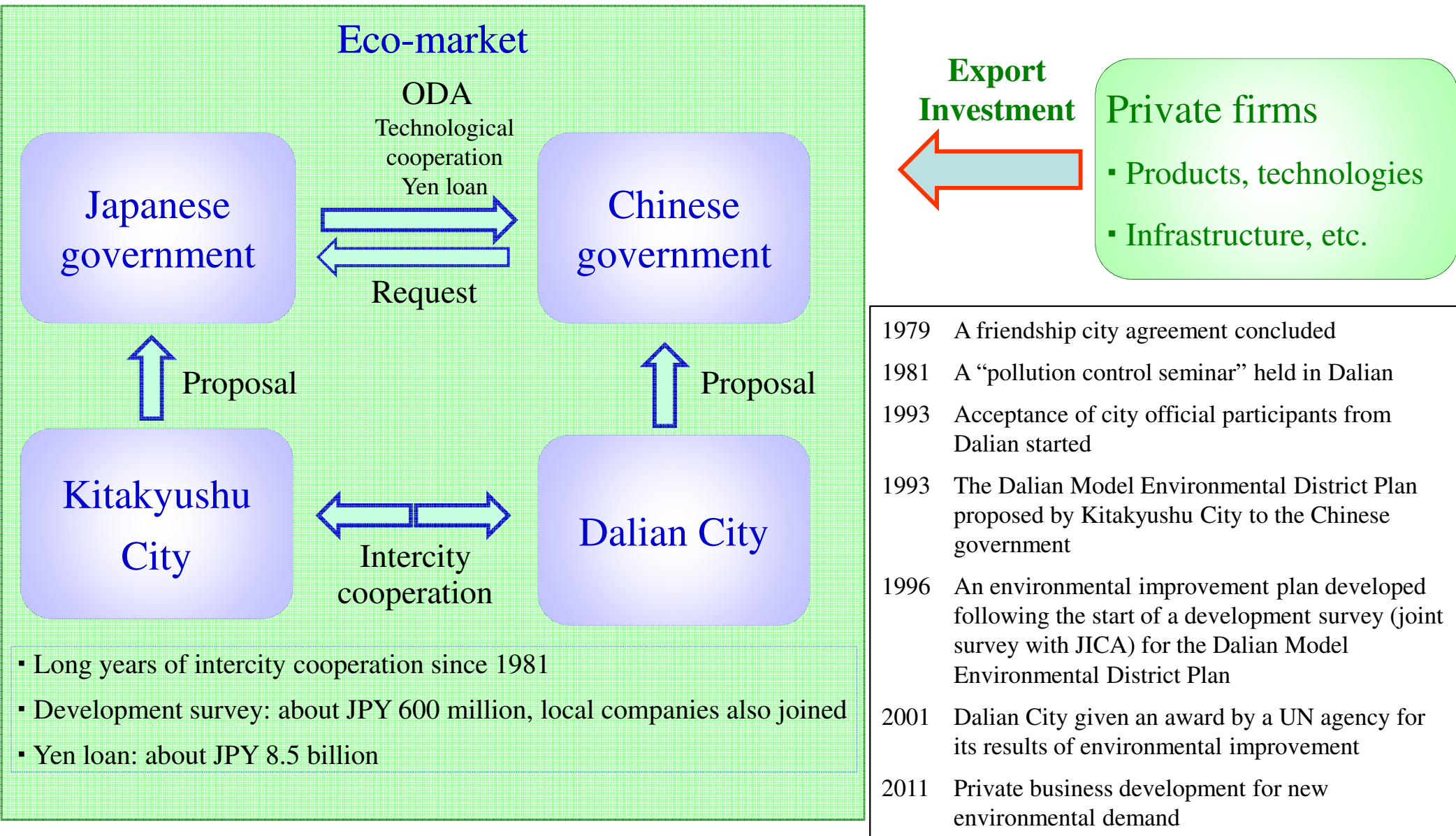
The necessity of purifying ballast water

- (1) Supply of nitrogen gas to the ballast tank
- (2) Decrease of the oxygen level
- (3) Anticorrosive effect on the tank, extinction of marine microorganisms
- (4) Generation of nitrate-nitrogen in ballast water
- (5) Potential for eutrophication (damage to fish farming)
- (6) Removal of nitrate-nitrogen



3. Japan's environmental exports to realize smart cities in Asia

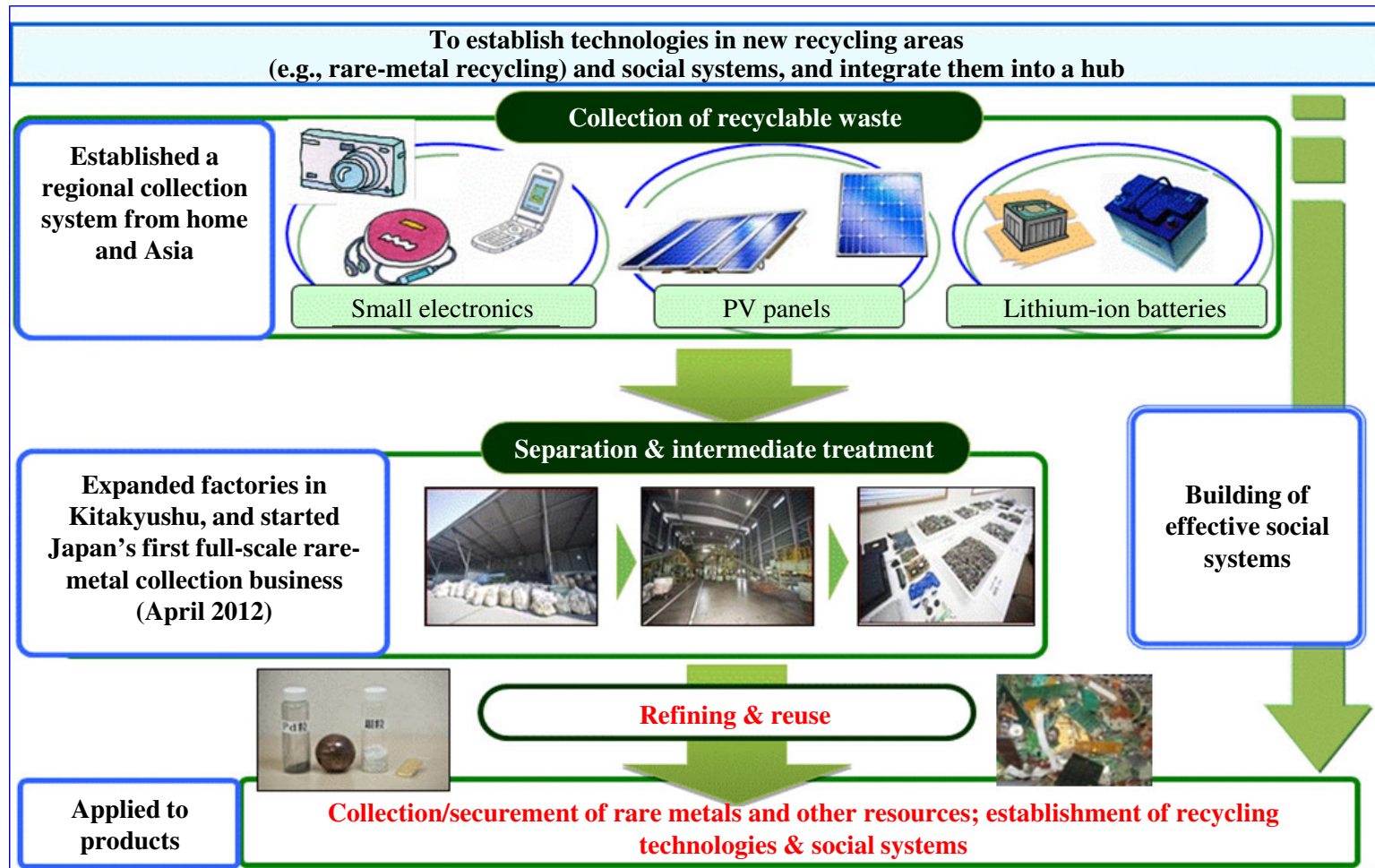
International environmental cooperation with Dalian (China) and eco-market formation (Public-Private Partnership & Funding Scheme)



Form the “**market**” using public funds, and develop business by private investments for economic growth

3. Japan's environmental exports to realize smart cities in Asia

Publicly funded environmental improvement & business development: Electronic waste recycling in India (Overview)

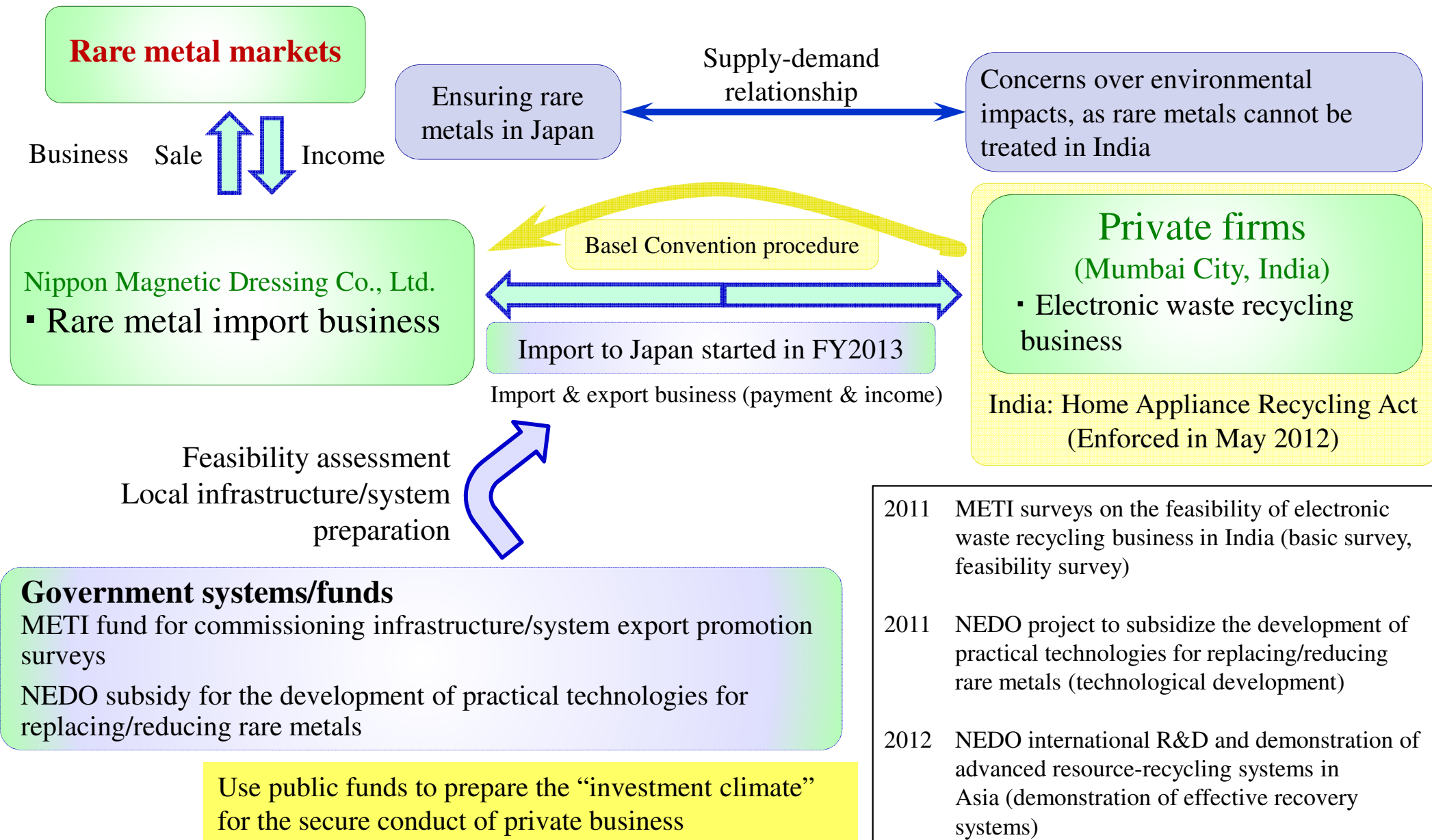


Nippon Magnetic Dressing Co., Ltd. (a Kitakyushu-based company):

- has developed a secondary-treatment technology for concentrating and recovering rare metals from small electronics
- imports waste electronic substrates from India as part of its business.
- has started purchase (import) of waste electronic substrates since FY2013 through the Basel Convention procedure.

3. Japan's environmental exports to realize smart cities in Asia

Publicly funded environmental improvement & business development: Electronic waste recycling in India (Public-Private Partnership & Funding Scheme)



Filed Visits in Kitakyushu



Kitakyushu's Proposal on Human Development

Human development for future is very important.

Kitakyushu is pleased to accept trainees from countries and cities in Asia and the Pacific region in cooperation with international organisations.



**Human Development Programme in Kitakyushu
(founded by JICA and operated by KITA)**

*Experience Sharing
Seminar in their own
countries after going back,
conducted by trainee.*

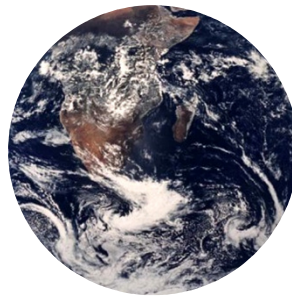
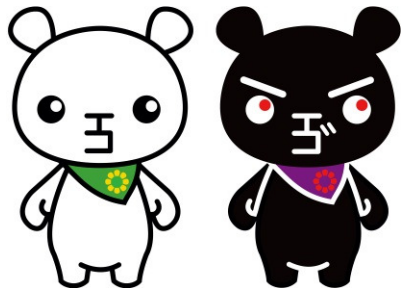


**Human Development Programme in Kitakyushu
(founded by UNIDO and operated by Kitakyushu)**

Sustainable Society

**Our willingness and actions will shape the future and
save the human race and the earth.**

We Can Create Sustainable Society Together!



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