Kitakyushu City's Approach to a Low Carbon Society

Green Frontier Plan to Eco Model City

Green Frontier
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The History of Kitakyushu City's Environmental Policy

■Phase 1 (until 1980)

The age of pollution problems and their conquest (women's associations & cooperation among industrial, academic, bureaucratic & private sectors)

■Phase 2 (from 1980)

The age of international cooperation (KITA, participation in two summit meetings & international awards)

■Phase 3 (from first half of 1990)

The age of recycling society activities (Eco-Town, PCB treatment, fee-for-service garbage collection & more exhaustive garbage sorting)

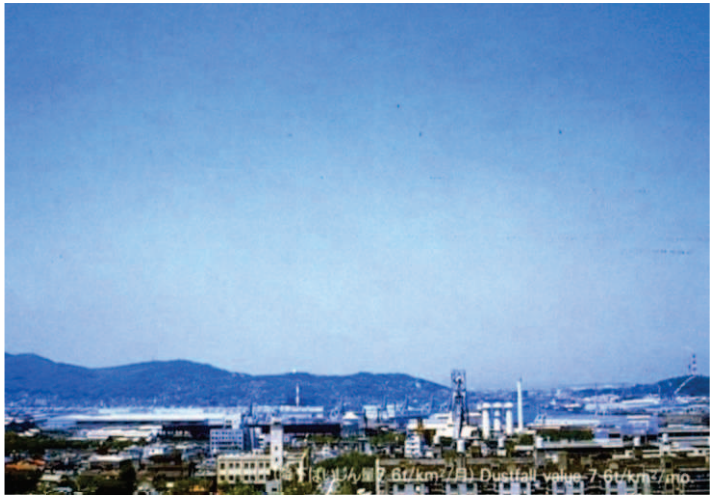
■Phase 4 (from 2005)

The age of sustainability and low carbon society activities
(Environmental capital, civic collaboration & Eco-model city)

The First Phase

Overcoming Severe Environmental Pollution

Worst Air Pollution
caused closing a school



Citizen enjoying
Blue Sky

In 1960s ➡ ***Present***

“The Dokai Bay, Sea of Death”
Erode Screw of ship and E. coli bacteria died.

Swimming at
Dokai Bay

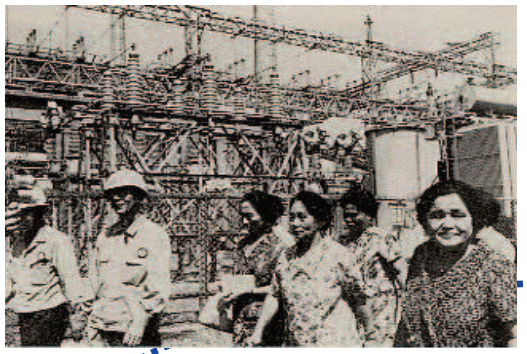
Recovered Blue Skies and Sea, People Enjoying Environment

Kitakyushu’s success was introduced by the OECD’s Environmental Report as “from Grey City to Green City” in 1985.

The First Phase

Overcoming environmental pollution through partnerships among Multi-stakeholders

Residents



Residents' observation of a private company

Learning how to measure air pollution with 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 Citizens
Environmental Governance

Reference: ESCAP "Kitakyushu Initiative for a Clean Environment

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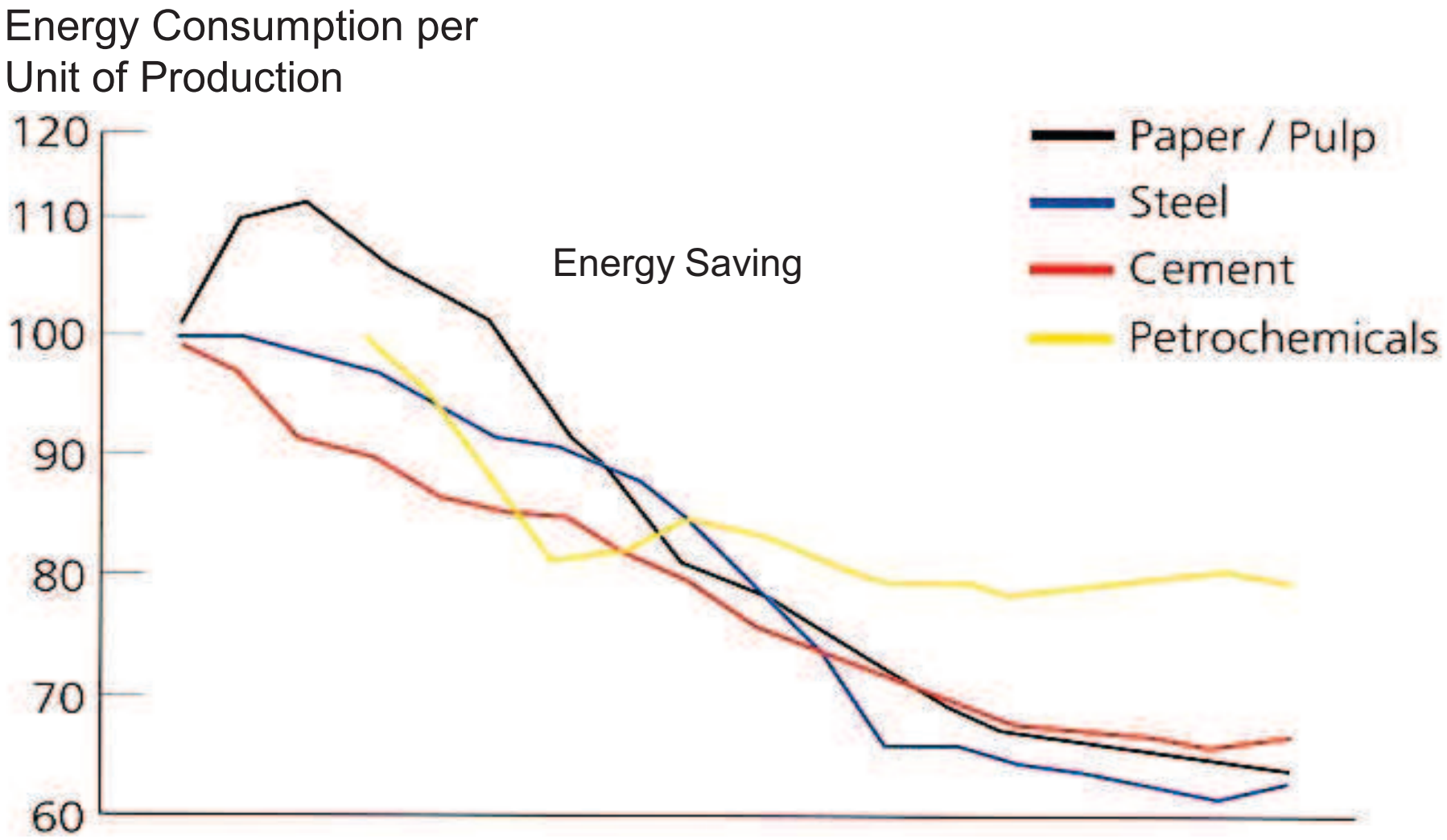
The First Phase

Co-Benefit Approach:Economic Development and Environmental Achievement



Cleaner Production increases productivity

The Second Phase

Asian Partnership Programme towards Shared Prosperity

Trainees Received: 137 countries 5,805 people, Experts Dispatched: 25 countries 153 people
Coordinating Cities' Cooperation Network in Asia , Promoting Environmental Projects in Asia

City of Dalian's Environmental Improvement, China
Dalian received the Global 500 Award from UNEP in 2001

Exchange of Memorandum on Cooperation for establishing Eco-Town with Tianjing at Prime Minister's Office

City of Surabaya's Composting Project,
Spreading to more than 20 thousand households

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The Third Phase

Kitakyushu Eco-Town

for facilitating Resource Circulation and Eco-Industries

Practical Research Area

Facilities for Practical Research: 15

Comprehensive Eco-Industrial Complex, Hibiki Recycling Area

Industrial Plants under Operation: 26

Outcome of Projects

Environment: Reduction of Environmental Impact, Saving Resources and Energy

Economy: Investment: 60 billion yen（Private sector: 68.6%, Government Sector: 31.4%）
Employee: 1,300 persons
Visitor: 750,000 persons (as of 2009.3)

The Third Phase

Examples of resource-circulation projects in Kitakyushu Eco-Town

Plastic PET Bottle Recycling Project

Office Equipment Recycling Project

Home Appliance Recycling Project

Automobile Recycling Project

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The Fourth Phase

Kitakyushu's Approach to Sustainable Development / Low Carbon Society

☑ **To Reduce CO_2 to Protect the Environment;**

☑ **To achieve Happiness and Health**
Comfortable and Convenient Life &
Accumulation of Prosperity by Generations

☑ **To simultaneously Achieve Sustainable Economic Development**
Not Compression but promotion of Economy

⇒ ***The Kitakyushu Green Frontier Plan***
will efficiently achieve these purpose

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Kitakyushu Green Frontier Plan

Made by Multi-stakeholders

Target: : Society with accumulated prosperity by generations

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

Citizens' Willingness & Partnership

Making a Sustainable Society

New Feeling of Values & Culture

Solution of Climate Change Issue

Increasing City's Happiness & Activeness

Asian Growth & Exchange

CO_2 Reduction Target with 40% of Economic Growth in 2050

☑ City Area : **50%**

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

5 Strateries for sustainable development

Urban Development

Industrial Development

Human Development

Social Development

Sustainable Development in Asia

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Leading Urban Development with integrated Low Carbon Technologies

Low Carbon Emission Town Development

Low Carbon and Human Friendly Town for an Aging Generation with Fewer Children

1) Private Vehicle Free Zone with Convenient Public Transportation System
2) Power Self-Support by the use of Renewable Energy
3) Long-life Housing with High Heat Insulation materials and Energy-saving Facilities
4) Rich Greenery with People's Planting
5) Environmentally Friendly Town with People's advanced awareness and activities

Sustainable Urban Development

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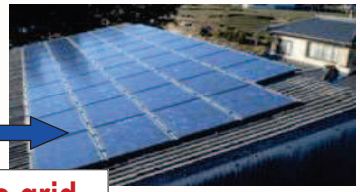
Leading Urban Development with integrated Low Carbon Technologies

Integrated Local Energy System

Higashida Co-Generation System with high efficiency

CO_2 Reduction:20% in Total



Photovoltaic generation

Micro grid

Sustainable Urban Development

→Thermal Supply for Factories

→Electric Supply for Town

Water Front Area

Space World

Factory Area

Environmentally Friendly Housing

Community Centre

Information Industry Area

Residence

Education Area

Train Station

Higashida Green Village Area

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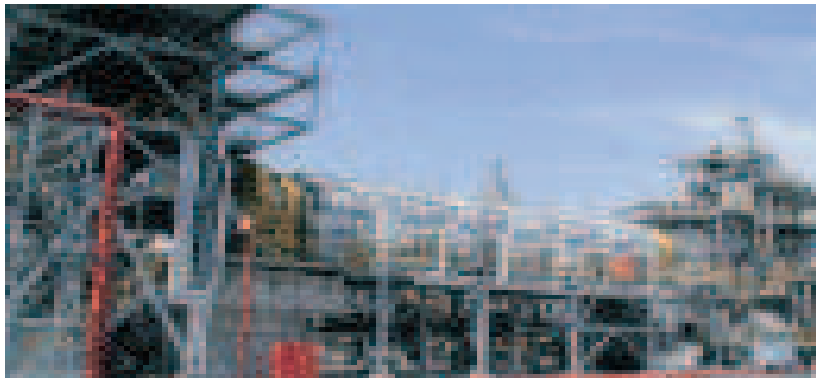
Industrial Development by Using of Local Potential

Smart Usage of Industrial Potential Energy

Large-scale of Photovoltaic Generation
on Roofs of Factories



Usage of Abundant potential
Energy of Factories

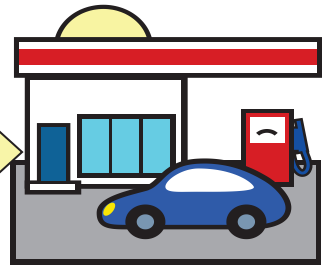
Houses & Buildings

Urban
Agriculture

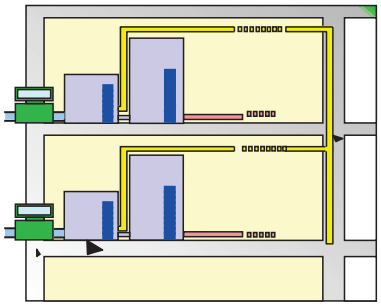
Hydrogen Town

Coke Factory

Hydrogen



Hydrogen Station
for Vehicle



Houses & Stores

Sustainable Industrial Development

Industrial Development by Using of Local Potential

Kitakyushu Eco Premium

Win-Win Approach through Products and Services

Water-saving type automatic cock with a self-power generation function

Rented type Eco-Apartment House with Photovoltaic Power Generation, First in Japan

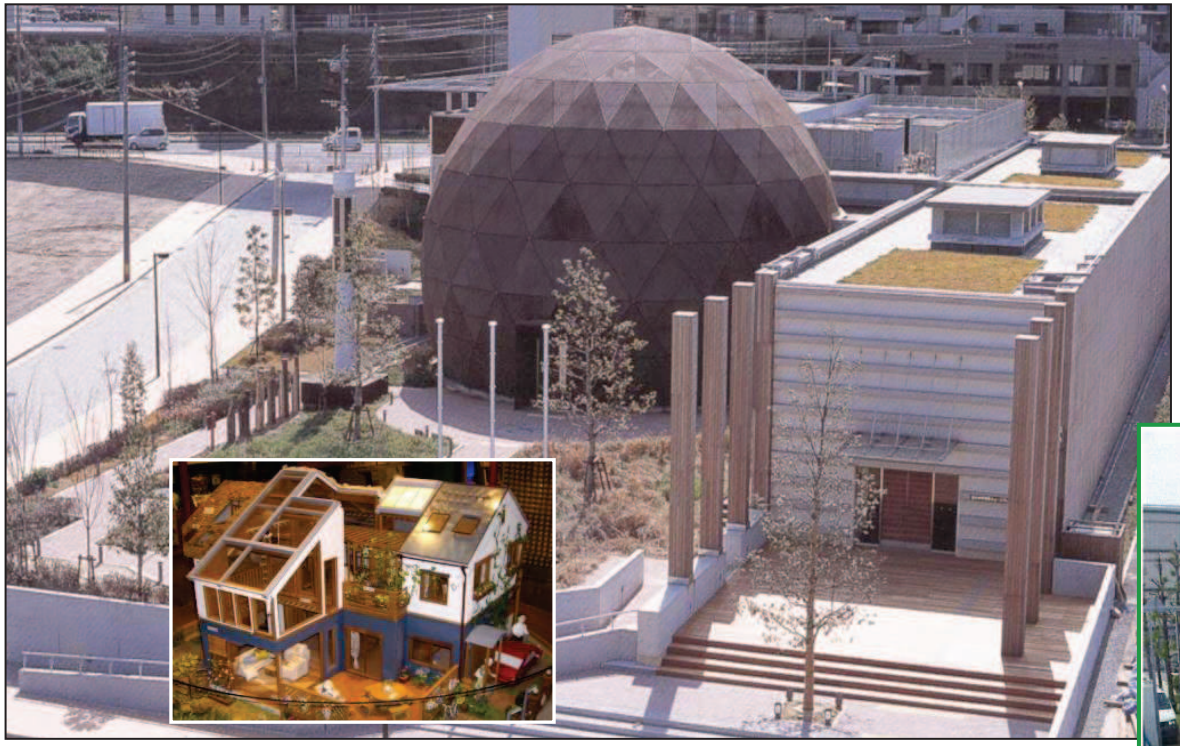
Efficient electromagnetic plate and sheet which contributes to energy saving

The technology and the product (eco-products), and service (eco-service) which lead to environmental impact reduction in the city are designted as the "**Eco-Premium**". Environmental consideration activity of the whole city through industrial field is promoted to its expansion and osmosis.

Point: Saving Energy, Saving Resources, Maintenance Free, etc.

Advanced Human Development & Eco-Tourism Industry

Overall Learning System on Sustainable Development



Human Development

Centre for the System / Environmental Museum & Eco-House (under construction)

We will introduce PG into every elementary and Junior High school

Photovoltaic Generation at Elementary School

Mobilizing Citizens for Sustainable Development & Enhancing Quality of Life

Kitakyushu Eco-Life Stage

Citizens make the “stage” for making presentation on environmental activities.
Through the exchange of information, environmental awareness and actions is being spread

Participants: 150,000 people / 2 days

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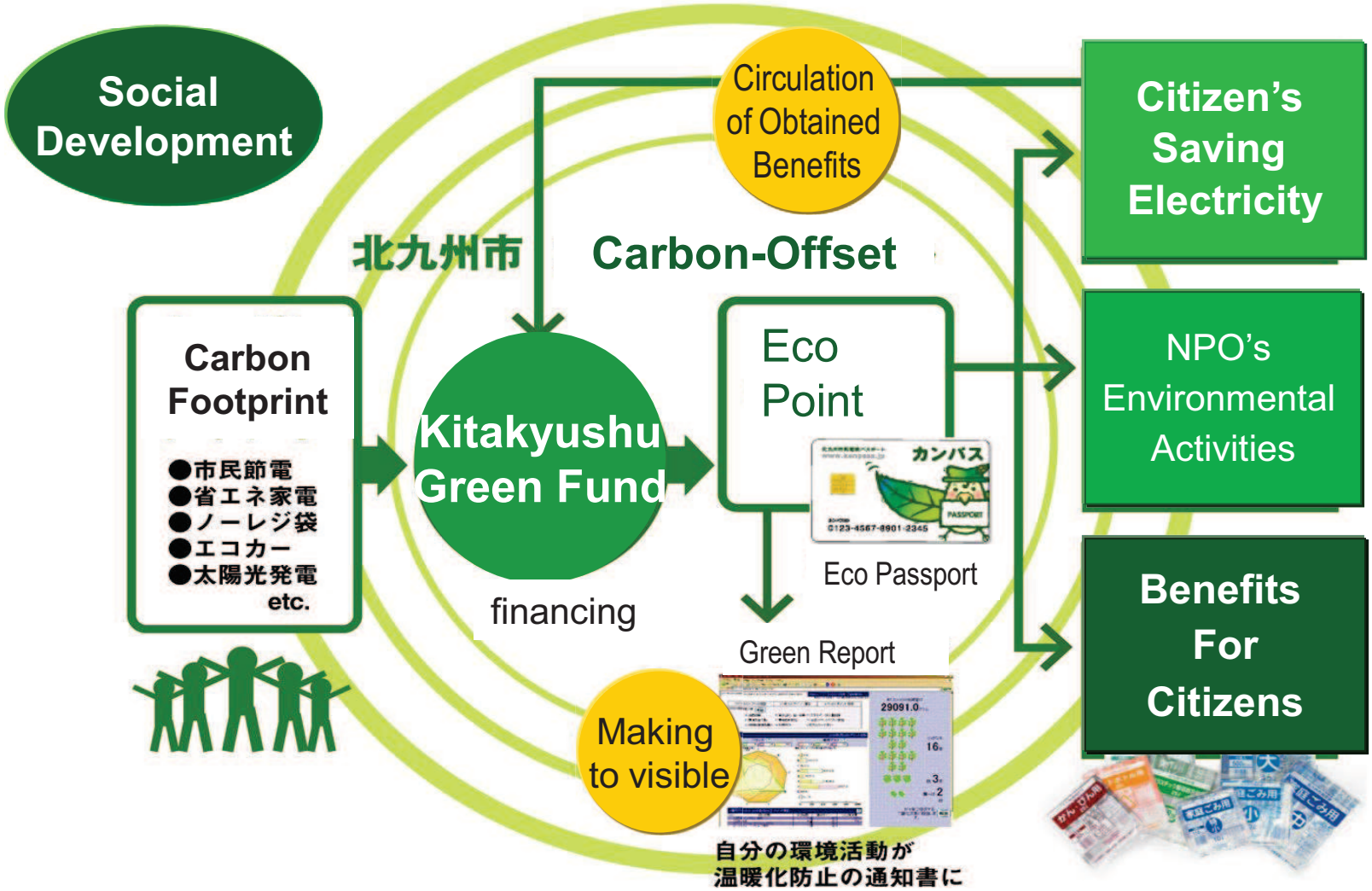
Social Development

Mobilizing Citizens for Sustainable Development & Enhancing Quality of Life

Integrated System on Carbon-Offset & Eco-Point



Mobilizing Citizens for Sustainable Development & Enhancing Quality of Life

CO_2 Absorption
Hibiki Green Road with Singing Birds Project

Planting Activity by Citizens

after Planting

Social Development

300,000 trees will be planted for 15 years.

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Realizing Sustainable Development in Asia

Kitakyushu Asian Center for low Carbon Society

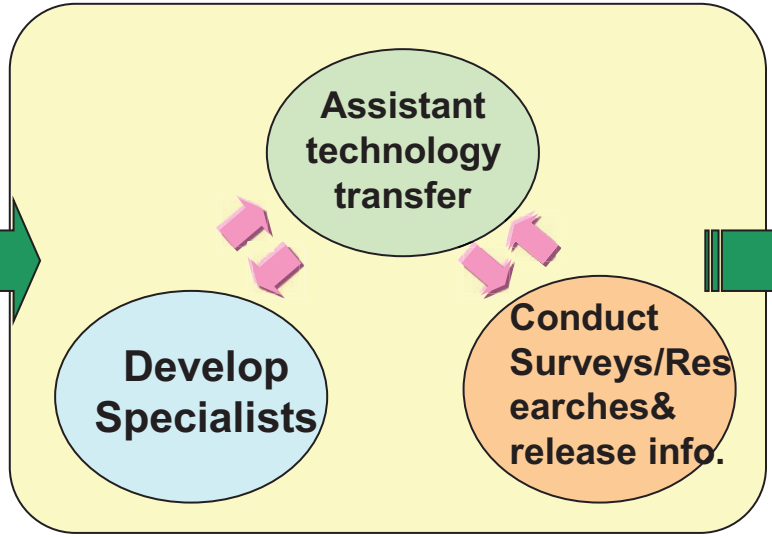
President

Hiroshi Komiyama
(Former President of University of Tokyo)

Utilize regional resources

○Integrate excellent environmental technologies
- Resources-saving or energy-saving technologies
- Cleaner Production

○a network of Asian cites



Promote carbon reduction & vitalize economy in Asia

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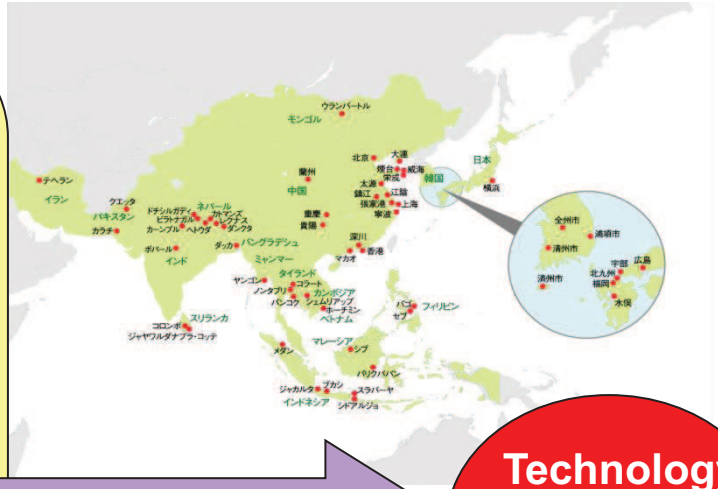
Method of technology transfer

Services for firms

1 **Integrate technologies as a customized package**
2 **Assist technologies renovation to address needs**
3 Assist verification testing
4 Assist in surveys for confirming marketability
5 Assist in submission of application for subsidy
6 Sending a delegate etc.



Technology Transfer to Asian Market

Establishment of Business Model For Technology Transfer

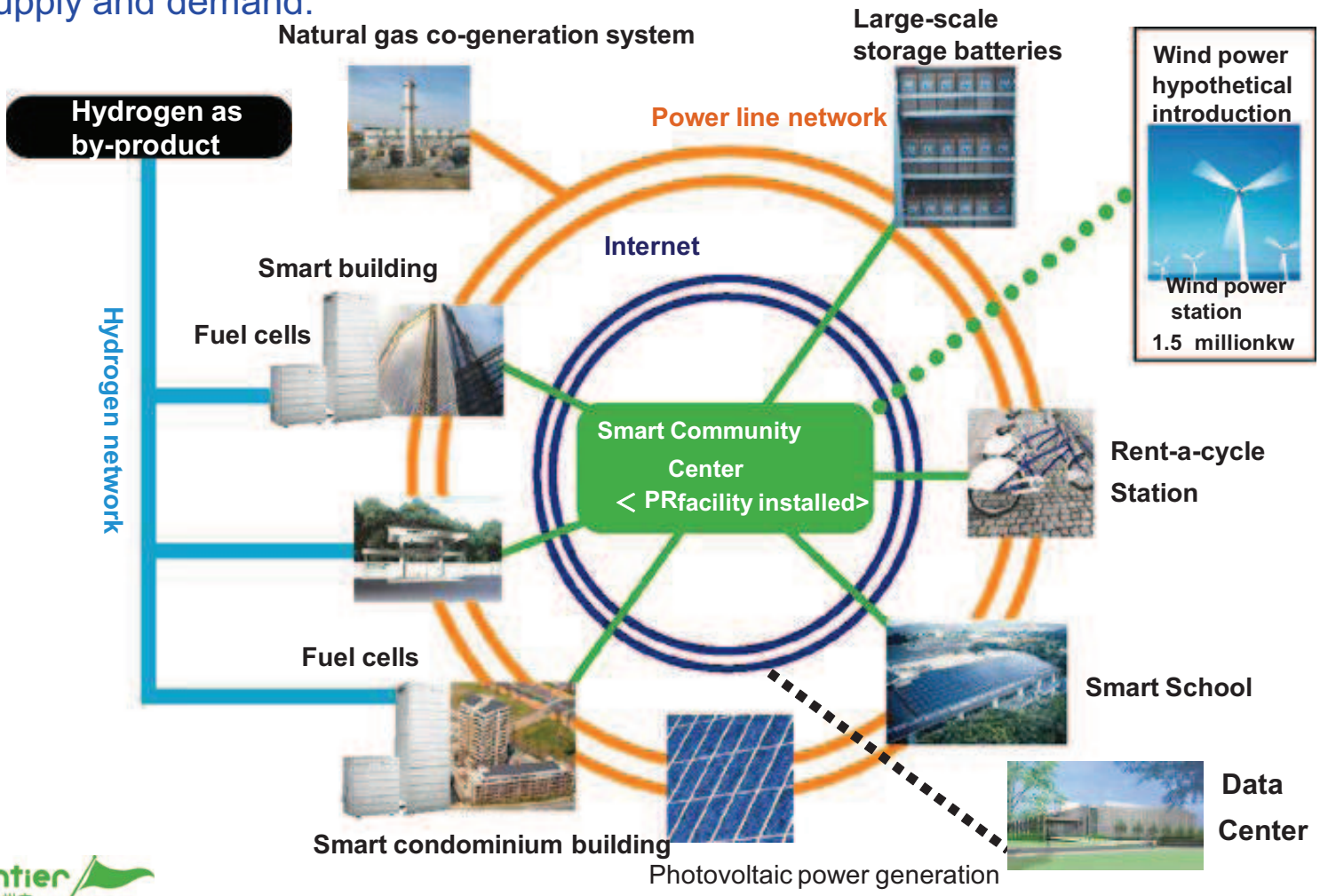
Utilizing a network of Asian cites

/Organization for sustainable urban Design for Asia
/Organization for the East Asia Economic Development

Example of system technology application (1)

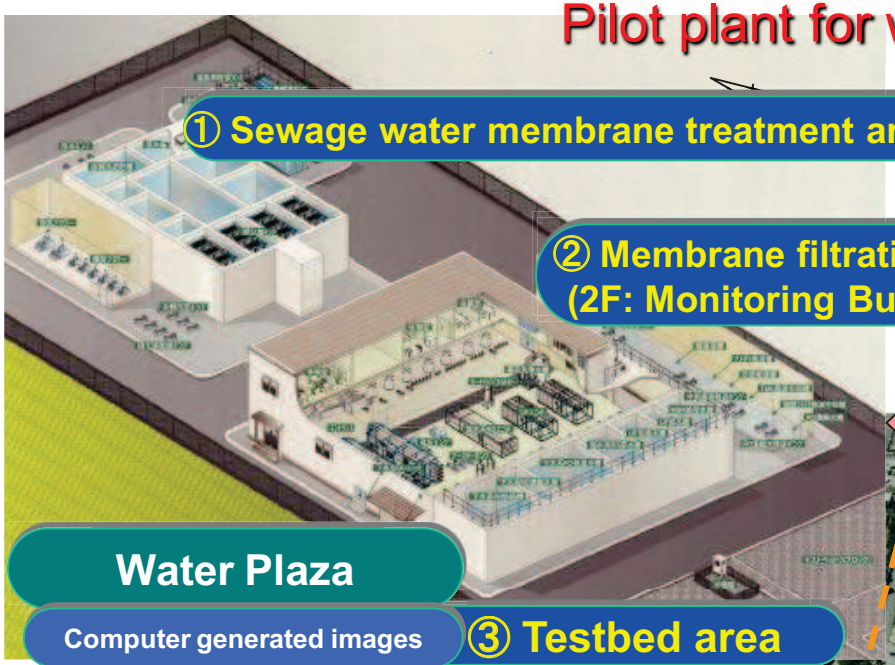
Yahata-Higashida Smart Community Plan

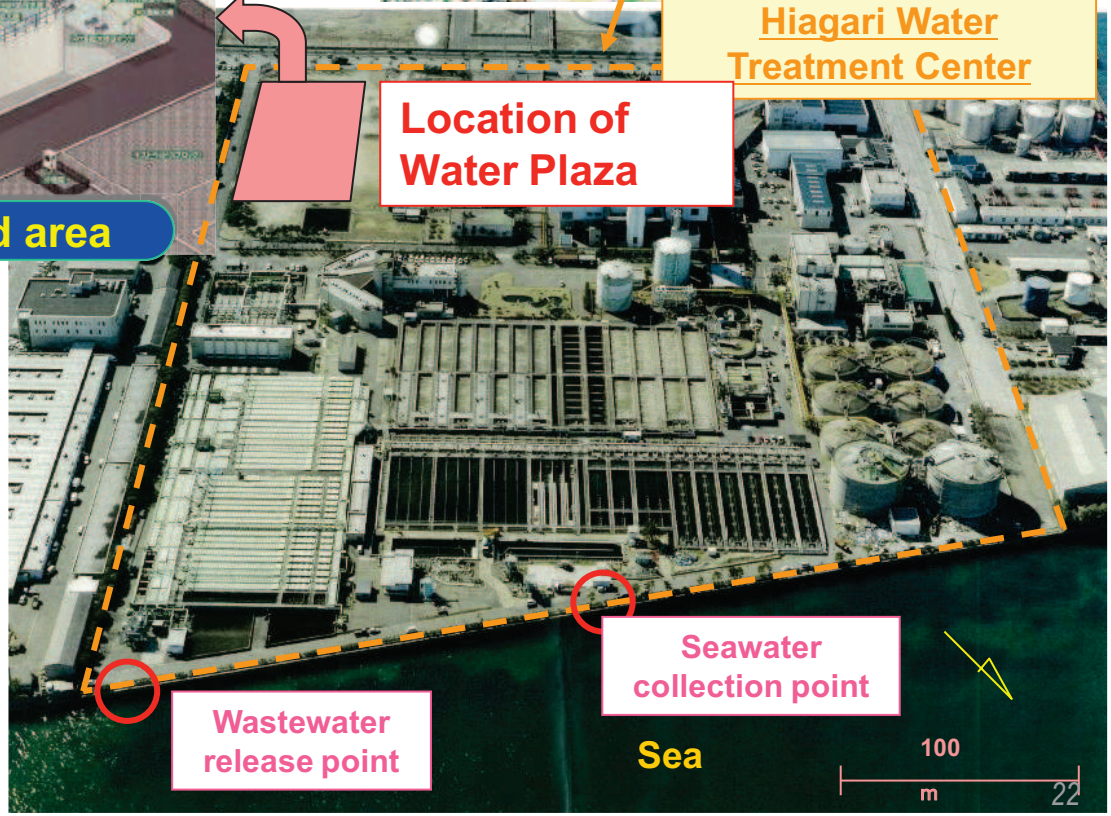
Realization of optimized energy use per region, through coordination between new and mainstay energy sources and introduction of a control system for both energy supply and demand.



Example of system technology application (2)

Pilot plant for water recycling (Water Plaza)





Water Plaza is:

A water recycling pilot plant combining membrane filtration of waste water and seawater desalination (capacity: 1,400m³/day)

- Development & demonstration of world-class technology
- Showroom function for communicating information
- Application in field training of overseas trainees

Water output from sewage water 1,000m³/day
Output from seawater 400m³/day

 # Startup in FY2010 (schedule)

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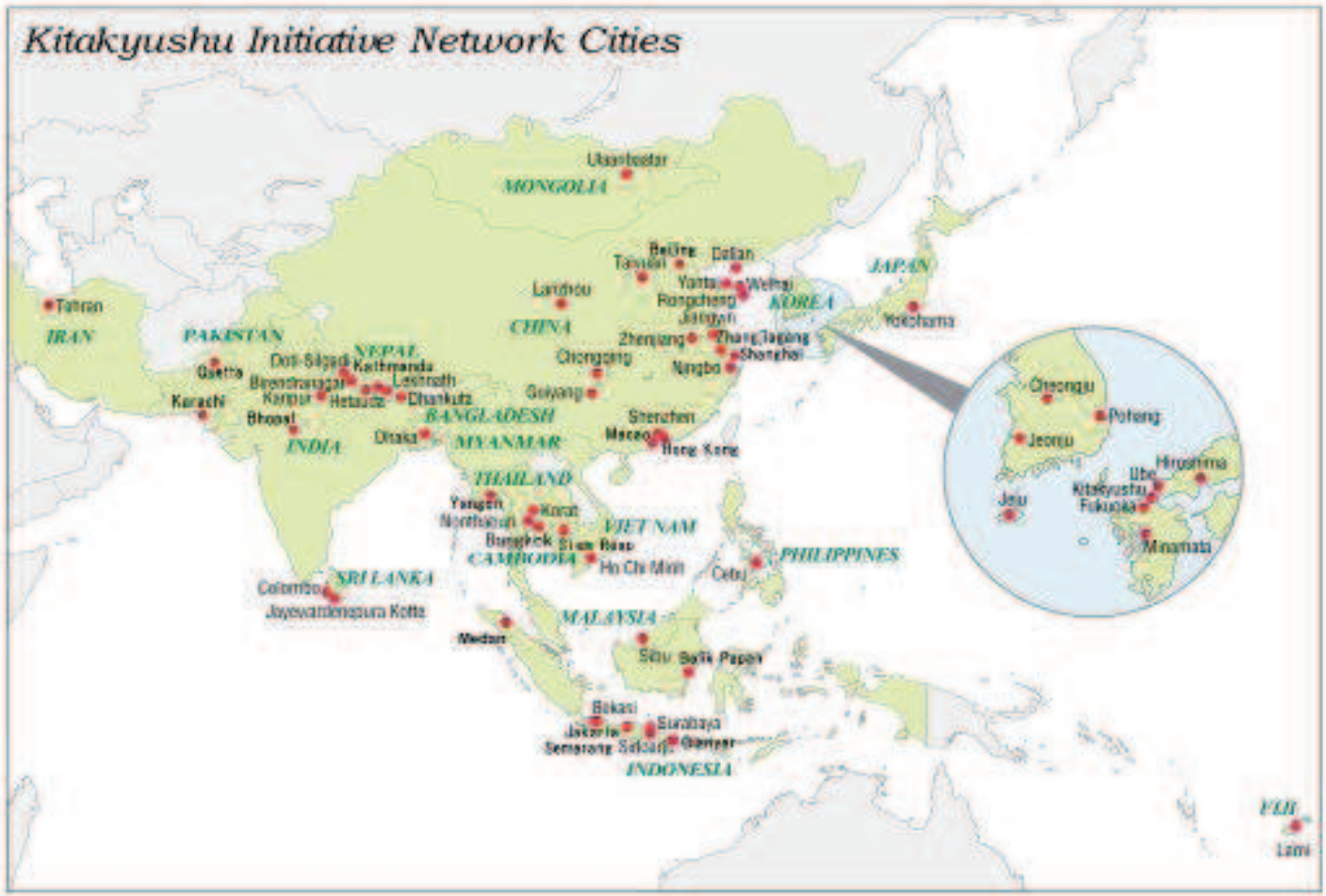
Development of WIN-WIN relations

Various Asian cities

Reduced pollution & improved quality of life, together with CO2 reduction

Kitakyushu City

Stimulation of the region through overseas environmental business operation chiefly by Kitakyushu businesses



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

WE Can Realize Sustainable Development.

(Economic Growth and Environmental Achievement)

For Further Information, please contact;
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