Green Growth Strategy in Kitakyushu, JAPAN

Toshiro YAMASHITA

Executive Director
Control and Inspection department
City of Kitakyushu, Japan
Profile of Kitakyushu City

Population: 1 million
Area: 488 km²
Industrial City with International Trade
Rich Nature with Biodiversity

Hiraodai Karst Plateau with Biodiversity

Larus saundersi
(Migratory: China~Japan)

Limulina
Largest number in Japan

Sone Tidal Flat
The History of Environmental Policy in Kitakyushu City

1901
- Government-run Yawata Steel Works
- We have developed as an Industrial City
- Industrial Wastewater
- Exhaust Emission

1950
- Aggravation of Pollution Problems

1960’s
- Women’s Movement against Environmental Pollution
- City Government
  - Organizational Arrangement, Ordinance, and Pollution Control Agreement with Companies
- Private Enterprise
  - Cleaner Production
  - Improvement of Production Process
  - Treatment of Pollutant, Tree Planting

1980’s
- Establishment of “KITA” (1980)

- Environmental International Cooperation (1988～)
- Agenda 21 Kitakyushu (1996)
- Kitakyushu Eco-Town (1998)
- Environmental Preservation and Industrial Promotion

2002
- Reduction of Domestic Waste by Introducing New System and Citizen Participation (First one at Designated Cities)
- Decision of Establishing PCB Treatment Facility (2001)
- Johannesburg Summit (2002) identified Kitakyushu Initiative for a Clean Environment

2008
- Grand design on World Capital of Sustainable Development (2004)
- Implementation and Evaluation of Practical Activities
- Johannesburg Initiative for a Clean Environment

2008

KITA: Kitakyushu International Techno-cooperative Association

Creation of Local and Global Sustainable Society

Pollution Control Policy

Local Diplomacy Policy

Resource-Circulating Society Policy

Sustainable Society Policy

Low Carbon Society Policy

Pollution Control Policy
History of Environmental Policy for Overcoming Pollution

Overcoming Severe Environmental Pollution

In 1960’s

Worst Air Pollution caused closures a school

“The Dokai Bay, Sea of Death”
Corroded boat propeller and E. coli bacteria died.

In 1980’s

Citizen enjoying blue sky

Swimming at Dokai Bay

Recovered Blue Skies and Sea, people enjoying environment

Kitakyushu was introduced by the OECD’s Environmental Report as “from Grey City to Green City” in 1985.
Outcome of Environmental policy for Resource-Circulating Society

Citizen’s Activities for Achieving Resource-Circulating Society

Domestic Waste Generation (g/day/capita)

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<tbody>
<tr>
<td>Can &amp; Glass Bottle</td>
<td>748</td>
<td>703</td>
<td>701</td>
<td>698</td>
<td>706</td>
<td>705</td>
<td>706</td>
<td>704</td>
<td>696</td>
<td>536</td>
<td>522</td>
<td>506</td>
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<tr>
<td>Waste Plastic Pet Bottle</td>
<td>705</td>
<td>704</td>
<td>706</td>
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<td>706</td>
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<td>696</td>
<td>536</td>
<td>522</td>
<td>506</td>
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<tr>
<td>Waste Plastic Package</td>
<td>704</td>
<td>706</td>
<td>705</td>
<td>706</td>
<td>704</td>
<td>696</td>
<td>536</td>
<td>522</td>
<td>506</td>
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Recycling Ratio (%)

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<tbody>
<tr>
<td>Can &amp; Glass Bottle</td>
<td>12.1</td>
<td>12.3</td>
<td>13.1</td>
<td>14.6</td>
<td>15.2</td>
<td>15.8</td>
<td>15.0</td>
<td>15.8</td>
<td>18.9</td>
<td>23.1</td>
<td>30.0</td>
<td>30.6</td>
<td>30.4</td>
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Resource-Circulation Station

Citizen’s Activities towards Achieving Resource-Circulating Society

Reduction of Domestic Waste & Increasing of Recycling

50 JPY/bag

12 JPY/bag

Waste Separation at Home
Kitakyushu Eco-Town
(First and Maximum in Japan)
facilitating Resource Circulation and Eco-Industries

Outcome of Environmental policy for Resource-Circulating Society

Outcome of Projects

Environment: Reduction of Environmental Impact / 0.2 million ton CO₂, Saving Resources and Energy

Economy: Investment: 60 billion yen (Private sector: 68.6%, Government Sector: 31.4%) Employees: 1,300 people Visitors: 840,000 people (as of March 2010)
International Cooperation for Sustainable Development in Asia

International Environmental Cooperation for Green Growth in Asian Countries

140 countries
6,638 people
As of 31 March 2012

Number of Participants from Overseas
(KITA)

International Cooperation Organisations in Kitakyushu
Japan International Cooperation (JICA) Kyushu International Centre
Kitakyushu International Techno-cooperative Association (KITA)
Institute for Global Environmental Strategies (IGES) Kitakyushu Urban Centre
Kitakyushu Forum on Asian Women (KFAW)
Kitakyushu Asian Center for Low Carbon Society

Joint Beach Cleaning Project by 10 cities of 3 countries
Dalian Environmental Demonstration Zone Project in Dalian, China

In 1994

At present

Dalian Received the Global 500 Awards from UNEP in 2001

Outcome of Environmental Collaboration in Asia
### Water Supply Improvement in Phnom Penh, Cambodia

<table>
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<tr>
<th>in 1993</th>
<th>→ Improvement →</th>
<th>in 2006</th>
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<tbody>
<tr>
<td>22 people</td>
<td>Number of Personnel / 1,000 Water Tap</td>
<td>4 people</td>
</tr>
<tr>
<td>65,000</td>
<td>Water Supply in Maximum (m³/day)</td>
<td>235,000</td>
</tr>
<tr>
<td>25%</td>
<td>Diffusion Ratio of Water Supply</td>
<td>90%</td>
</tr>
<tr>
<td>10 hours</td>
<td>Operation Time</td>
<td>24 hours</td>
</tr>
<tr>
<td>0.2 kgf/cm²</td>
<td>Average Water Pressure</td>
<td>2.5 kgf/cm²</td>
</tr>
<tr>
<td>26,881</td>
<td>Number of Household Serviced</td>
<td>147,000</td>
</tr>
<tr>
<td>72%</td>
<td>Ratio of Non-Revenue Water</td>
<td>8%</td>
</tr>
<tr>
<td>48%</td>
<td>Ration of Payment for Water Charge</td>
<td>99.9%</td>
</tr>
</tbody>
</table>

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

Expanded to **30,000 households**, as well as other cities and countries, and **30% reduction of solid waste** landfill in Surabaya.
Present Progressive Environmental Policy for Low-Carbon Society

Higashida Low-Carbon Area in Kitakyushu
Integrated Local Energy System with 30% Reduction of CO₂

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

→ Thermal Supply for Factories

→ Electric Supply for Town

Train Station

Higashida Low-Carbon Area
Present Progressive Environmental Policy for Low-Carbon Society

Kitakyushu Smart Community: Local Energy System

- **Hydrogen (by-product)**
  - Natural Gas Co-Generation System
  - Large Scale Battery
  - Wind Power 15,000 kw (Virtual)
  - Hydrogen Supply Station
  - Fuel cells
  - Smart Building
  - Smart Community Center
  - Smart Schools
  - Photovoltaic Generation
  - Smart Data Center

**Power grid**

**IT grid**

**Dynamic Pricing**: 15JPY ~ 150JPY /kwh

**Joint Project by 50 Private Enterprises & Local Government**

- **Term**: 2010 to 2014
- **Investment**: $190 million
- **CO₂ Reduction**: 50%
- **Renewable Energy**: 10%

*Kitakyushu Smart Community: Local Energy System*
Technology and products (eco-products) and services (eco-services) which lead to the reduction of environmental impacts in the city are designated as “Eco Premiums.” Environmental activities throughout the city promote the expansion and integration of Eco Premiums through industries.

**Examples of Green Products**

**ECO PREMIUM (Green Products and Green Services)**

**TOTO Neo Rest Hybrid Series RH Type**
Hybrid ecology system can realise 4.8 l washing as well as high energy saving

**Shibaura Eco-apartment house**
(rented units) with solar power (first in Japan)

**Takagi Automatic Sprinkler**
with moisture sensor for saving water supply

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

*Increasing sales by certification*
*A company's Lightning System: 4 times increasing*
Present Progressive Environmental Policy for Low-Carbon Society

Zero Emission Building
Nippon Steel Engineering, LTD.

Usage of Nature Energy
Power of the Wind
Light of the Sun
Heat of the Land

CO₂ Saving Building System
Building Insulating
BEMS
High Efficiency Air Conditioner
Lightening

↓
CO₂ reduction : 36%
(Saving Energy Cost)
Environmental Collaboration for Green Growth in Myanmar

Kitakyushu Asian Center for Low Carbon Society

Eco-Business through City-to-City Environmental Cooperation Network in Asia

Water Supply  Solid Waste Management  Energy Management & Cleaner Production  Sewerage  Eco-Town  Smart Community

Kitakyushu Asian Center for Low Carbon Society

Packaging of Low Carbon Items
- Planning
- Technology
- Operation
- Institution
- Incentives
- Funding
- Education, etc.

Concentration Of Related Items

Arrangement for Partners

Organisations
- Coordination for Transferring
- Arranging Transferring Scheme

City of Kitakyushu (LG)
- City-to-City Cooperation
- Collaboration of Stakeholders

International Framework
- International Organizations
- National Governments

Private Enterprise
- Products, technologies, etc.

Citizen NGO
- Awareness
- Lifestyle, etc.

Research Institute, etc.
- Technologies
- System, etc.

Local Government
- Policies
- Institution, etc.
Thank you for your kind attention!

For further information, please contact:

Toshiro YAMASHITA
Executive Director
Control and Inspection department
City of Kitakyushu, Japan
E-mail: kan-kokusai@city.kitakyushu.lg.jp