Asia Center for Low Carbon Society (Asia Green Camp) Presentation Materials

Technology Transfer Manager, Makoto Iizuka
Establishment of Asia Center for Low Carbon Society: Background
The First Phase (~1980)
Overcoming Pollution (Women’s Groups, PPP)

The Second Phase (1980~)
International Cooperation (KITA, Two Summit Meetings, Awards)

The Third Phase (Early 1990s)
Toward a recycling society (Ecotown, PCB, Fees for waste collection, further waste separation)

The Fourth Phase (2005~)
Towards a Sustainable and Low Carbon Society
(Environmental Capital, Collaborating with Citizens, Environmental Model City)
Overcoming Pollution: Experience of Kitakyushu City

Schools were temporarily closed due to the worst air pollutions; even colon bacteria could not survive and the screws melted in the ‘sea of death’, Dokai. Kitakyushu residents overcame serious pollutions and have taken back blue sky and beautiful sea. The OECD environmental report mentioned that this city has changed from a gray city to a green city.

Worst Pollution in Japan: Elementary Schools were closed

『死の海』 水も溶けた; Not even Ecoli bacteria could not survive

Blue Skies

Sky and sea recovered; people enjoying the environment

The bay now
International Environmental Cooperation
Contribution to establishment of sustainable society

Trainees from 133 countries- 5366 people; dispatch of over 200 experts
Network of Asian Cities, Promotion of Environmental Projects
Improvement of Environment through International Environmental Cooperation

Environmental Improvement in Dalian
Dalian was awarded Global 500 prize from United Nations Environment Programme in 2001

Waterworks in Phnom Penh
Improvement of water loss from illegal extraction
72% (1993) → 8% (2006)

Environmental pollutions generated by kitchen waste landfills (Then)
Wastes converted into compost (Present)

An expert from Kitakyushu

Composting in Surabaya Indonesia; this method has proliferated over twenty thousand households. Improvement of environment and Recycling
Local Resources (Network of International Cities)

Kitakyushu Initiative Network
62 cities in 18 countries

Establish the Platform of Asia Environmental Cities by reorganizing the network and introducing low carbon society to the Asian countries.

Establishment of a platform of Asia Environmental Cities
Nominating one or two cities as leaders; their roles are to promote actively Low Carbon Society to their neighboring cities.

The Organization for the East Asia Economic Development
Network of 10 cities from Japan, China, and Korea

Practical network for cooperative solutions to environmental issues such as ocean garbage and photochemical oxidant in wide area.
Background of Asia Center for Low Carbon Society

Kitakyushu City Framework and Plan

Objective
Cultivating people and culture, a town with environment and technology, which connects with the world

The City’s Branding

World’s Environmental Capital
Build ‘the World Environmental Capital’ building further on the world recognized initiatives

Asia’s Technology Capital
Establish ‘the Asian Technology Capital’ by enhancing R&D institutes and promoting new promising industries

Environmental Model City

Authorized July 2008

Based on concept of stock-typed society
Creating a Low Carbon Society

Reduction of CO₂ (2050) Goal
50% in urban areas
Equivalent to 150% in Asian Region

Compatibility of Environment and Economy
The amount of emissions from Kitakyushu City

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
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<tbody>
<tr>
<td>1990</td>
<td>15,800,000 t</td>
</tr>
<tr>
<td>2005</td>
<td>1,5600000 t</td>
</tr>
<tr>
<td>2013</td>
<td>14,900,000 t</td>
</tr>
<tr>
<td>2020</td>
<td>13,500,000 t</td>
</tr>
<tr>
<td>2030</td>
<td>10,900,000 t</td>
</tr>
<tr>
<td>2050</td>
<td>7,800,000 t</td>
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</tbody>
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Reduction Target of Green House Gas

- 30% cut: 10,900,000 t
- 50% cut: 7,800,000 t

The amount of reduction of Asia regions

- 1990: 23,400,000 t
- 2005: 11,700,000 t
- 2013: 4,100,000 t
- 2020: 1,400,000 t
Asia Center for Low Carbon Society
(Overview of Green Camp)
The Center

What is Asia Center for Low Carbon Society…

One of the leading projects of this Environmental Model City

Establishment of Asia standard by putting together Japanese environmental technologies at the same time promoting Asia low carbon society through environmental businesses
Function and Organization Structure of Asia Low Carbon Society (Asia Green Camp)

Cooperation Process of Asia Center for Low Carbon Society

1. Utilization of local resources
2. Research/Dissemination of Information
   - Proliferation of a good example
   - Accumulation of local information
3. Support technology transfer
   - Develop a key person for technology transfer
   - Develop a locally available technology
4. Skills development of Specialists
5. Coordination/Adjustment among cooperative organizations
6. Monitoring
   - Promotion of Asian low carbon society at the same time achieving local economic growth
   - Strategy Review by considering a feedback

National/public organizations and other cooperative groups in city such as local companies and the Federation of Economic Organizations
Function and Organization Structure of Asia Low Carbon Society (Asia Green Camp)

Mr. Hiroshi Komiyama

- Human resources development
  - Environmental Cooperation Center of the Kitakyushu International Techno-cooperative Association (KITA)
- Technology transfer
  - Office for International Environmental Strategies Environment Bureau, Kitakyushu City
  - Technology Transfer Manager
- Surveys and researches
  - Kitakyushu Urban Centre of the Institute for Global Environmental Strategies (IGES)
1. Support of technology transfer to Asia at the same time establishing a new business models and technology
2. Development of a key person and an environmental specialist and implement of mutual training
3. R&D on environmental preventions in Asian cities; providing a support information from public sector, and sending information about technology transfer
4. Monitoring and Feedback on low carbon projects in Asia countries

Our roles and functions!!

1. Support of technology transfer to Asia at the same time establishing a new business models and technology
2. Development of a key person and an environmental specialist and implement of mutual training
3. R&D on environmental preventions in Asian cities; providing a support information from public sector, and sending information about technology transfer
4. Monitoring and Feedback on low carbon projects in Asia countries

Our Strategies of technology transfer

1. Introduction of technology which fits with local conditions
2. Establish value-added business by adding packaged technology and service which fit with local conditions
3. Social technology transfer; establishment of social rules, urban planning and public awareness
4. R&D on building a new business model which benefits the next generations

Establishment of Asian Standard Technologies

Collaboration with traditional and cutting-edge technologies through technology transfer and interexchange
Doing Environmental Business in Asia by utilizing the Asia Low Carbon Center

Extracted from http://asiangreencamp.net/eng/func1.html
Cities in Asia
Reduction of CO2, Reduction of Pollution and Improvement in QOL

Kitakyushu City
Local Businesses going outward Asia, contributing to the regional economy.

WIN—WIN Situation

Transfer of Environmental and Social Technology

Asia Low Carbon Center

The Focal Point of Asia’s Low Carbon Innovation “

Corporates
Citizens
NPO
Academia
authorities

Low Carbon Center

Cities in Asia

Kitakyushu City

Cities in Asia

Kitakyushu City

Cities in Asia

Kitakyushu City

Cities in Asia

Kitakyushu City

Cities in Asia

Kitakyushu City

Cities in Asia

Kitakyushu City
Energy businesses

**Packaged Model 1**

**Power Generation Projects**

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**Yahata-Higashida Smart Community Plan**

This Plan aims to construct and verify a "smart community model," which has the ability of minimizing GHG emissions while concurrently improving convenience for people's lives. As part of this plan, the world's first verification experiment was carried out, in which hydrogen generated at a plant as a by-product is supplied to diverse facilities through a pipeline.

- Natural gas cogeneration
- Large-size storage batteries
- Smart buildings
- Nuclear power plants
- Next-generation gas stations
- Solar energy generation
- Internet
- Smart homes
- Smart offices
- Local facility for energy-saving operations

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**Project for Improving Fossil Fuel Efficiency**

- Integrated coal gasification combined cycle (IGCC)
- Integrated coal gasification fuel cell combined cycle (IGFC)
- Research and development of CCS (carbon capture & storage) technologies

The northern part of Kyushu has Paleogene strata over a large area, and this particular geographic formation is considered to have a high potential for CO₂ sequestration. To confirm such potential, a geographic survey has been conducted in Wakamatsu-ku.

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Extracted from http://asiangreencamp.net/eng/func101.html
Water businesses

Water Projects

- Water Plaza
  - Water purification verification plant equipped with an integrated system combining membrane filtration of sewage with a seawater desalting system (Hiagari Sewage Treatment Plant)
  - Purification capacity for sewage: 1,000 m³/day
  - Purification capacity for seawater: 400 m³/day

- Assistance for Phnom Penh, Cambodia
  - Improved maintenance/management of piping system
  - The rate of non-revenue water has decreased: 72% (1993) → 8% (2006)

Extracted from http://asiangreencamp.net/eng/func101.html
Recycle businesses

Recycling Projects

● Kitakyushu Eco-town Project

Estimated economic effect (25 projects)
- Direct investment
- Created employment
  - approx. 60 billion yen
  - approx. 1,300 persons

● Our recycling initiative has led to the materialization of the Japan-China collaborative project for promoting recycling-oriented urban design (eco-town collaboration).

- Qingdao:
  (FY2007 to 2008)
- Tianjin:
  (FY 2008 to 2009)
- Dalian:
  (FY2009 to 2010)

Extracted from http://asiangreencamp.net/eng/func101.html
Cleaner Production

Environmental Impact Control Projects

Cleaner production and EOP (end-of-pipe) technology

- Resource inputs
  - Design
  - Raw materials
  - Water
  - Energy
  - etc.

- Production
  - Manufacturing process
    - Introduce energy-saving equipment.
    - Introduce high-thermal-efficiency equipment.
    - Introduce user-friendly equipment that is easy to clean and inspect.

- Output
  - Products
  - By-products
    - Wastes, wastewater
    - Waste gas, waste heat
  - Treatment facility
  - Sale
  - Discharge

- Treatment
  - Flue gas desulfurization system
  - Electric dust collector
  - Wastewater treatment facility

- Reuse
  - Use waste heat. Recycle coolants. Recycle wastes and refuse. Use by-products generated through the use of wastes.

- Operations management
  - Inspect operations to minimize leakage, loss or pollution. Introduce high-efficiency equipment, layouts or piping. Ensure eco-conscious room temperatures. Implement effective inventory management to minimize deadstock.

- Transportation
  - Reduce the number of transshipments. Simplify packages. Utilize returning cargo carriers.

Cleaner Production (CP)
High productivity and low environmental impacts

End-of-pipe treatment (EOP)
1. The Conclusion of memorandum

Mutual Agreement to realize low carbon societies in developing Countries

日時：2010年6月14日（月）

場所：北九州市本庁舎 プレゼンルーム

UNIDO：カンデ・ユムケラー事務局長

北九州市：北橋健治市長

2. Memorandum overview

◆ Mutual cooperation for establishment of low carbon society in developing countries, mainly Asian countries.

1. Enlightenment of ‘Eco-Town Conception’ to revive Waste industries.

2. Capacity development on environmental technology and waste recycle service
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Inquiries and Visits Welcomed!
http://www.asiangreencamp.net/