An Asian Base for Green (Low Carbon) Revolution

Kitakyushu Asian Center for Low Carbon Society
Kitakyushu City, Japan

The origin of the industrial revolution in Japan
An origin of the Green Revolution in Asia

1901: Yawata Steel Works (Japan’s first state-run steel refinery) opens

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 Background of Kitakyushu Asian Center for Low Carbon Society

Kitakyushu City’s Master Plan
Eco-Model city

Created in July 2008

Environmental capital of the world
Technology capital of Asia

Consistence of environment and economy

Approach from an Integrated Perspective

Low carbon society
Energy conservation
CO₂ reduction

Recycling society
Symbiotic society
Biodiversity

Consistence of environment and economy

Regional Resources (The Leading Businesses in the Kitakyushu Region)

Nippon Steel Yawata Works
Toyota Motor & Nissan Motor
Yaskawa Electric

Mitsubishi Chemical
Mitsubishi Materials
TOYO

Regional Resources (Outstanding Manufacturing Technologies)

The need for pollution control measures (period of rapid economic expansion)
Pursuit of conservation in resources and energy (two oil crises)

High production efficiency & low environmental impact
Development of low-pollution production technologies by business enterprises in the city (Energy & resources conservation technologies, cleaner production, etc.)

Aggregation of technologies contributing to carbon level reduction

For development of a low-carbon society
R&D in Innovative Technologies
Regional Resources (International Inter-City Network)

- Kitakyushu Initiative Network: 62 cities in 18 countries of the Asia/Pacific
- Environment Group, the Organization for the East Asia Economic Development: Network of 10 cities in Japan, China, & Korea
- Network for practical action in promoting environmental technologies and cooperation to resolve wide-area environmental issues such as ocean garbage and photochemical oxidants

What the Kitakyushu Asian Center Aspires to Achieve

- Promote aggressive transfer of environmental and social technologies,
- Push for reform in social mechanisms,
- Create new values and culture,
- And become a center for "Low Carbon Revolution in Asia"

The Principal Role and Functions of the Center

- Development of inter-business exchange based on inter-city exchange
- Extension from soft power (consulting) to hardware (equipment)
- Introduction of technology suited to the partner enterprise in the target area
- Improved added value through packaging element technologies
- Establishment of the Asian standard technology
- Reform in social mechanisms through transfer of social technologies

Basic Direction of Technology Transfer

- Development of technology transfer & exchange
- Promotion of technology transfer & exchange
- Development of specialized human resources
- Research & information communication
- Monitoring

Example of technologies contributing to carbon level reduction (1)

- Advanced coal application technology: Electric Power Development Co., Ltd. (J-POWER)
  - Development and application of "multi-purpose coal gas production technology" for high-efficiency power generation through coal gasification combined with fuel cells.
  - CO₂ emission reduction by more than 30% projected.

Example of technologies contributing to carbon level reduction (2)

- Energy conservation for plant infrastructure facilities: Yaskawa Electric Corporation
  - Utilizing JETRO’s projects, a demonstration project promoting energy conservation with invertors was started in September 2008 at a model plant in Dalian, China.
  - Presently, Yaskawa Electric inverters are used for energy conservation in dust collector fans and the wind/hydropower machinery for wastewater tanks at the model plant in Dalian City.
Example of technologies contributing to carbon level reduction (3)

Pilot plant for water recycling (Water Plaza)

- Water Plaza
- Location of Water Plaza
- Water output from sewage water: 1,000 m$^3$/day
- Output from seawater: 400 m$^3$/day

Water Plaza is:
- A water recycling pilot plant combining membrane filtration of waste water and seawater desalination (capacity: 1,400 m$^3$/day)
- Development & demonstration of world-class technology
- Application in field training of overseas trainees
- Water output from sewage water: 1,000 m$^3$/day
- Output from seawater: 400 m$^3$/day

Example of social system technology application (1)

Kitakyushu Eco-Town Project (Zero Emission)

- Various Asian cities
- Kitakyushu City
- Development of WIN-WIN relations
- Stimulation of the region through overseas environmental business operation chiefly by Kitakyushu businesses
- Transfer of environmental & social technologies

Example of social system technology application (2)

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

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