Future City Kitakyushu

©teitan,City of Kitakyushu

Kitakyushu City's Activities for Low-carbonization in Asia

City of Kitakyushu,JAPAN

City located near to other Asian nations, rich in nature, and developed as a manufacturing area

Population: 957,000 (2016)

Area: 491.95 Km^2

GDP: 3,366 billion yen (2013)

Rich nature and branded food materials

Karst Plateau Hiraodai

Wakamatsuhoku Beach

Ouma Bamboo Shoots

Kanmon Straits Octopuses

Kokura Beef

Buzen-Sea Oysters

Wakamatsu Special Tomatoes

Major companies in Kitakyushu area

Nippon Steel Corporation

Yasukawa Electric Corporation

TOTO Ltd.

Mitsubishi Chemical Corporation

Toyota Motor Corporation · Nissan Motor Co., Ltd.

Mitsubishi Materials Corporation

Overcoming Severe Pollution: Kitakyushu's Experience

1960s

Today

Key Factors: Partnerships among Multi-Stakeholders

Residents

Residents observing a private company

Study session on air pollution measures with university professors

Partnership

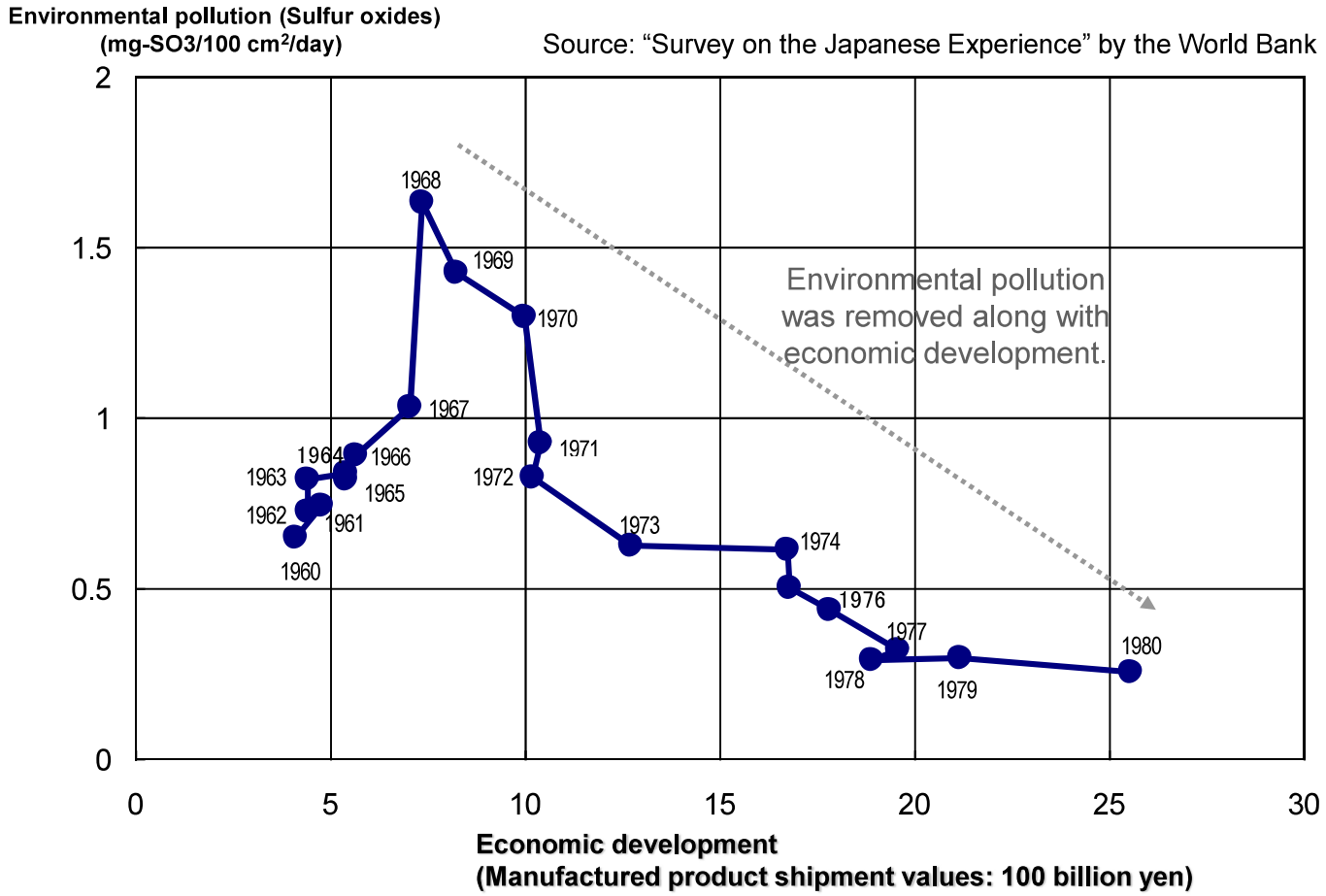
Environmental supervision & environmental infrastructure

Local Government

Cleaner Production & pollution control equipment

Private Enterprises

Balance of environmental policies and economic policies in Kitakyushu City



Development of international cooperation on environmental issues

Partnership with other Asian nations for mutual prosperity

Accepted trainees: 8,207 persons from 156 nations; Dispatched specialists: 192 persons to 25 nations
Promotion of cooperation networking between Asian cities and environmental improvement projects

UN ESCAP Ministerial Conference on Environment and Development (2000)

Contribution to environmental improvements in Dalian, China
(Dalian City received the Global 500 Award in 2001.)

Exchanged memorandum for cooperation on eco-town with Tianjin City
(At the Prime Minister's official residence)

Water supply project at Phnom Penh

Air pollution survey in Mongolia

Driving forward the waste composting project with Surabaya City, Indonesia
(Adopted by over 20,000 families)

Kitakyushu New Green Frontier Plan

Kitakyushu Global Warming Implementation Plan & Environmental Model City Action Plan

Taking on the challenge to create a low-carbon society built upon the strong environmental power of the city's residents

Basic Policies

- Low-carbon society as an industrial city
- Low-carbon society in response to an aging society with low birthrates
- Intercity environmental diplomacy towards the development of a low-carbon Asia

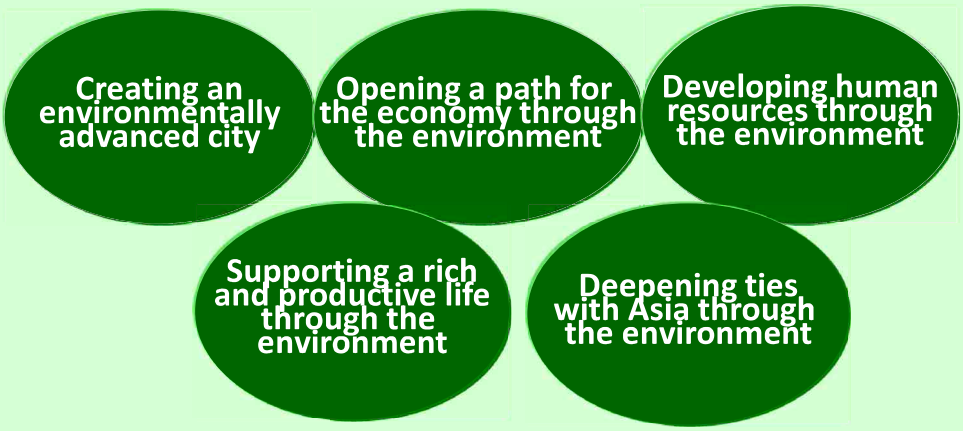
CO_2 emission reduction target (2050)

(2005 emissions: 1,630 tons/year)

- Kitakyushu area: 50%

Consider higher upper load based on low-term national targets

- Asian region: Equivalent to 150%



Featured Initiatives in Kitakyushu

Eco-Town（Recycling base）

Japan's largest Eco-Town
1997: 1st certified eco-town
Expanded to about 30 recycling businesses

CO_2 emission reductions About 380,000 t/year

Smart Community

Comprehensive management of energy in an entire city area (Yahatahigashi area)

CO_2 emission reductions (Compared with general city area)
Residential sector: Reduced 28%
Industrial sector: Reduced 50%

Urban Monorail

Japan's first urban monorail (Successful case of public transit-oriented development (TOD) leading to urban development along railways ～OECD～

Reduction of automobile exhaust gas

Reduction in vehicular traffic in the city limits due to the convenience of public transportation

Citizen Solar Power Plant

Raise construction funds from the citizens and return profit to them using a part of power selling incomes

Scale: About 1.5MW

Make the civic life better by greening activities etc.

Taking on the Challenge of a Resource Recycling Society
Kitakyushu Eco-Town Project

Automobile recycling

Japan's Largest Eco-Town

Approved 1997, Started operations 1998
No. business facilities: 29
No. research facilities: 16

R&D on recycling technologies for solar power systems

Collection/treatment of rare metals

- Investment ~66 billion yen
- Employees ~1,300
- Visitors ~1,500,000 (1998-October 2016)

Fluorescent lighting recycling

Kitakyushu Smart Community Development Project

Creating a new lifestyle with locally produced and locally consumed energy
Selected as one of four bases in Japan in April 2010

Smart buildings

Fuel cells

Hydrogen network

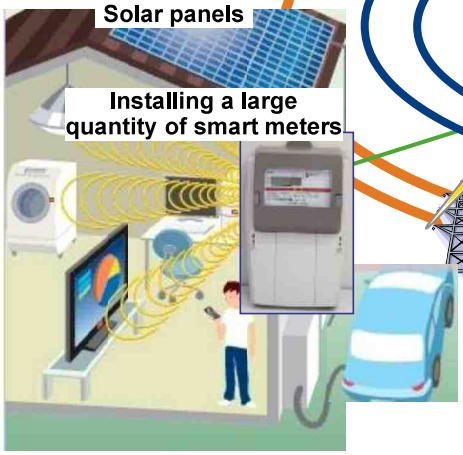
Hydrogen by-products

Next-generation SS

Power grid

IT grid

Smart housing



Solar panels

Installing a large quantity of smart meters

Local power conservation center

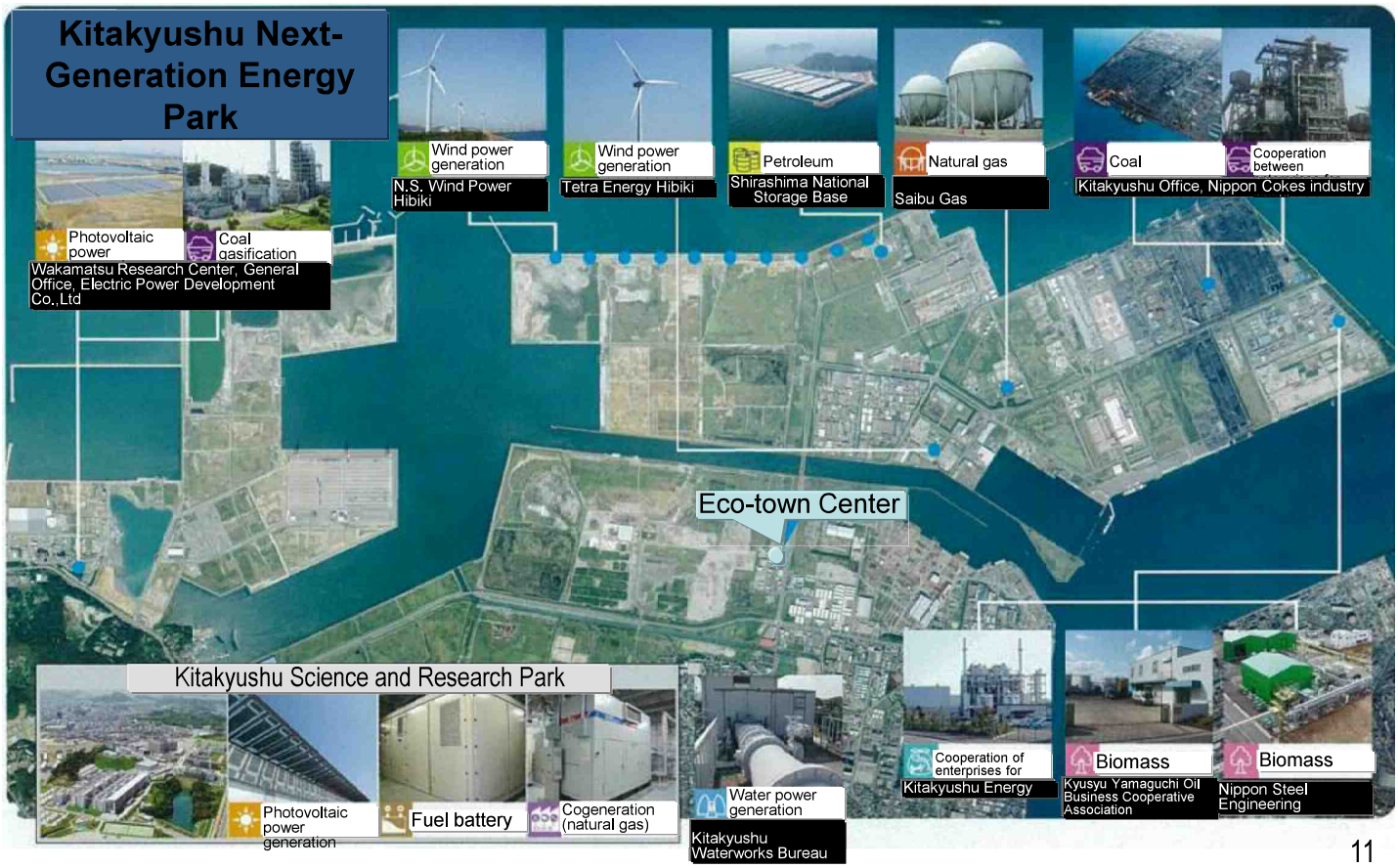
Wind power

Smart schools

Natural gas co-generation

Next-generation Energy Park

Formation of low-carbon society developing in each region



Environmental Education

Workbooks for elementary school children “Green Notebook”

Kitakyushu Environmental Museum

Guidebook for separate collection

Eco Life Stage

OECD Green Cities Programme

Paris, France

Chicago, U.S.A.

Stockholm, Sweden

Kitakyushu, Japan

"Green Growth in Kitakyushu, Japan " issued by OECD in 2013

Once a polluted industrial zone, Kitakyushu is now a modern industrial city pursuing green growth.

OECD Green Cities Programme Commemorative Meeting on the Publication of Kitakyushu Report, 18 October, 2013

Mayor Kitahashi received the report from Director of Public Governance and Territorial Development, OECD.

G7 Kitakyushu Energy Ministerial Meeting

Kitakyushu Initiative on Energy Security for Global Growth Joint Statement

- Energy Investment for Global Growth
- Gas Security
- Nuclear Energy and Safety
- Cyber Security ,Electricity Security
- Innovation and Development of Energy Technologies

Kitakyushu Asian Center for Low Carbon Society

Center established as engine for green growth activities

Concept : Developing interactions that place value on the relationship between cities and that will help Japan gain respect from international society in order to contribute to the creation of green cities in Asia

Compile the experiences and know-how of the city from the process of overcoming pollution and becoming an environmental city in order to Create the "Kitakyushu Model"

141 projects in cooperation with 106 Japanese companies and universities in 57 Asian cities

Exporting Green Cities Using the Kitakyushu Model

- Create the "Kitakyushu Model," which is a systematic compilation of the technology and know-how of the city from the process of overcoming pollution to becoming an environmental city.
- Support tools to create sustainable green cities that integrate waste, energy, water and sewage, and environmental protection.

—Organization of the Kitakyushu Model—

Kitakyushu's Story

- Overcoming pollution
- History as green city
- Background of the Kitakyushu Model

Sustainable urban development (Sustainability framework)

- Waste Management
- Energy Management
- Water Management
- Pollution Management
- Transportation Management

①Understand situation
②Develop strategies
③Develop specific policies
④Verify & measure policies
⑤Orders & financing

Kitakyushu's case

Kitakyushu's Involvement in Large-Scale JCM Project Development

Promotion of low-carbon development of entire cities using intercity cooperation

Surabaya, Indonesia: 2nd largest city in Indonesia with a population of 3 million

<FY 2013- 2015> Low Carbon City Planning Project in Surabaya, Indonesia

Target areas: Energy, waste management, transportation, water resources

Participating Japanese companies: 13

Green Sister City agreement signed (Nov 2012)

Haiphong, Viet Nam: Major port city in Viet Nam with a population of 1.9 million

<FY 2014-2016>Green Growth Promotion Plan of the City of Hai Phong

Target areas: Low-carbon city planning, energy, waste management, conservation of Cat Ba island

Participating Japanese companies: 10

Sister city agreement signed (Apr 2014)

Iskandar, Malaysia: 2nd largest economic zone in Malaysia

<FY 2014-2016> GHG Emissions Reduction Project in Iskandar

Target areas: Waste-to-energy, energy savings and industrial waste recycling in an industrial estate

Participating Japanese companies: 4

Consultation with Mayor of Pasir Gudang City (Feb 2015)

Rayong Province, Thailand: Major heavy chemical industrial zone in Thailand with 2 large industrial parks

<FY 2015-2016>GHG Emissions Reduction Project in Rayong Province

Target areas: Waste-to-energy project, energy savings, total recycling of industrial waste in an industrial zone Participating Japanese companies: 4

MOU signed with Department of Industrial Works (Dec 2014)

Phnom Penh, Cambodia: Capital City of Cambodia with a population of 1.7 million

<FY 2016>Action Plan for the climate change strategy in Phnom Penh Capital City

Target areas: Low-carbon city planning, energy

Participating Japanese companies: 4

Sister city agreement signed (Mar 2016)

Green Sister City : Surabaya, Indonesia

International cooperation for composting household waste started in 2004

- ✓ 30% reduction of waste
- ✓ Streets decorated with flowers
- ✓ Improvement of public environmental awareness

Building a relationship of trust

"Green Sister City" agreement was signed in November 2012 between Surabaya and Kitakyushu

Exporting "Green City" to Surabaya

Energy Saving in Commercial Establishments & Hotels

Introduction of High-Efficiency Air Conditioner System

This project was adopted as one of the financing program for JCM model projects in FY2015.

- ✓ Participating company: NTT FACILITIES, INC.
- ✓ Target: Tunjungan Plaza in Surabaya, Indonesia
- ✓ Business expenses: about 230 million yen

High-efficiency turbo, chiller, pumps, cooling towers,EMS

Hai Phong Green Growth Promotion Plan

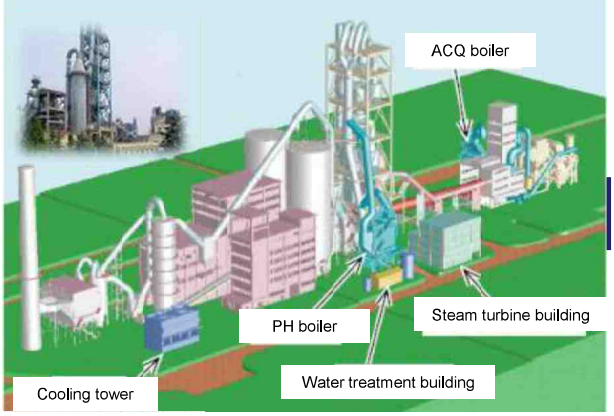
Promoting 15 Pilot Projects

Waste	①Separation and composting of household waste
	②Waste heat recovery power generation & utilization of industrial waste
	③Recycling of e-waste
Energy	④Energy savings and introduction of decentralized energy systems in factories & buildings
Transportation	⑤Introduction of low-emission buses
	⑥Promotion of the use of public transportation
Cat Ba Island	⑦Development of comprehensive resource recycling system
	⑧Energy savings and introduction of renewable energy and EV buses in Cat Ba Island
Water & Sewage, Rainwater Drainage	⑨U-BCF expansion project
	⑩Handicraft village wastewater measures
	⑪Introduction of sewerage registry system
Environmental Protection	⑫Restoration of Tay Nam canal
	⑬Development of air and noise monitoring systems
Green Production	⑭Installation of high-efficiency furnaces in foundries
	⑮Promotion of green agriculture

Creation of Eco-Friendly Cement Factory

Waste Heat Recovery Power Generation

- NTT Data Institute of Management Consulting, Kawasaki Heavy Industries
- Siam City Public Company Limited (Saraburi Province, Thailand)
- Adopted as FY 2016 JCM equipment subsidy project
- Project scale: ~JPY 1.96 billion (subsidy of JPY 580 million)



Horizontal expansion

Utilization of Industrial Waste

Waste emitters

Waste

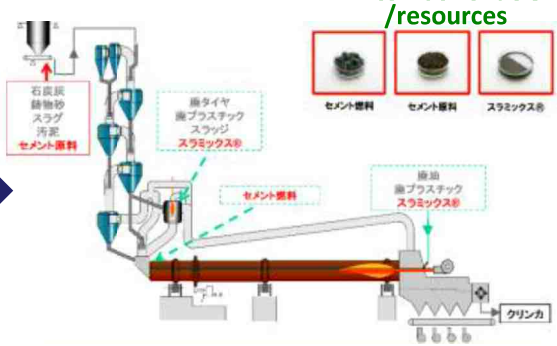
AMITA:
Waste treatment operator

Sludge, dust & soot, cinders, waste oil, waste solvent, waste acid, waste alkali, slag, used catalysts, metal waste, waste plastic, other

Blending

VICEM HAIPHONG CEMENT

Alternative fuels /resources



Conservation Projects on Cat Ba Island

Demonstration run of EV bus in conjunction with solar power

Low-carbon technical innovation creation project for developing countries

Demonstration period: Dec 2015 to Feb 2020

Joint development by local company, Soft Energy Controls, with a Chinese company (provider of technologies to control storage batteries)

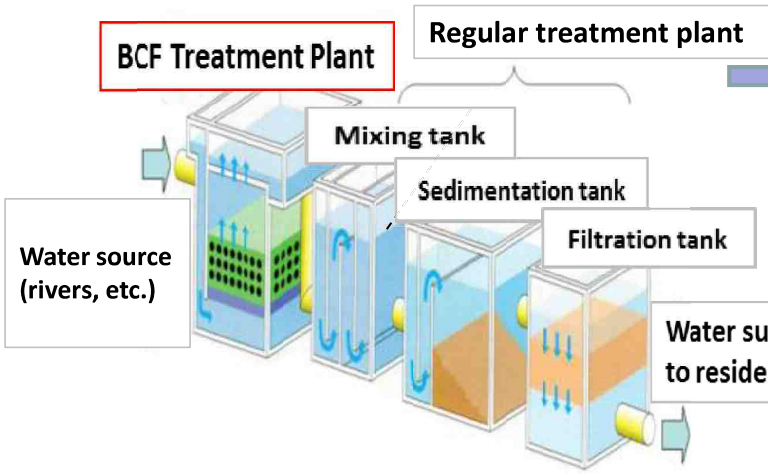
Introduction of first EV bus in Viet Nam
- Temporary import measures→Approved by prime minister
- Demonstration run→Development of guidelines by the Ministry of Transport

Development of Comprehensive Resource Recycling System

- Production of biogas from wet waste and sludge
- Ecological agriculture using liquid fertilizer
- Processing solid fuel from dry waste

Introduction of U-BCF to Main Water Treatment Plant in Hai Phong, Viet Nam

Introduction of U-BCF from small-scale water treatment plant in Hai Phong to main water treatment plant (using grant aid)



Compared with conventional advanced treatment
- **Construction costs: 1/2**
- **Running costs: 1/20**

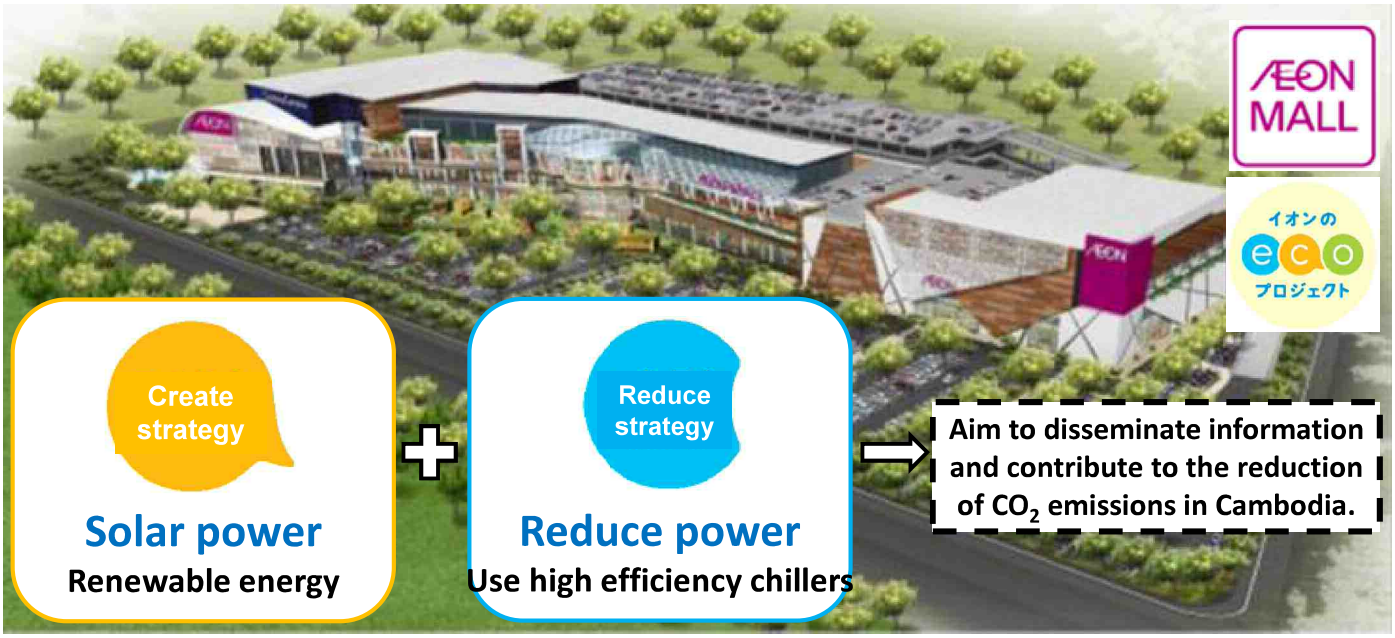
Main water treatment plant (An Duong Water Treatment Plant)

Expansion throughout Viet Nam and other countries in Southeast Asia

Energy Savings in Large Shopping Mall

Aeon Mall Cambodia will introduce “solar power” and “high efficiency chillers” in Aeon Mall II Phnom Penh (PPC, tentative name, scheduled to open in summer 2018).

- Adopted as a FY 2016 JCM equipment subsidy project
- Project scale: ~JPY 580 million (subsidy of JPY 230 million)



Recycling of Electrical and Electronic Waste

Nippon Magnetic Dressing Co., Ltd.

Nippon Magnetic Dressing has **developed technologies for the concentrated recovery of rare and precious metals (secondary treatment)** from household waste electronic circuit boards, mobile phones, and small electronic devices, and started plant operations in Kitakyushu Eco-Town in May 2012. As part of this project, Nippon Magnetic Dressing imports waste electronic circuit boards from overseas with the aim to treat this waste together with electronic waste in Japan.

India

In order to prevent the improper recovery of rare metals that may have adverse impacts on health and the environment, waste electronic circuit boards, such as computers, started to be imported to Japan which possesses proper advanced recovery technologies

Viet Nam

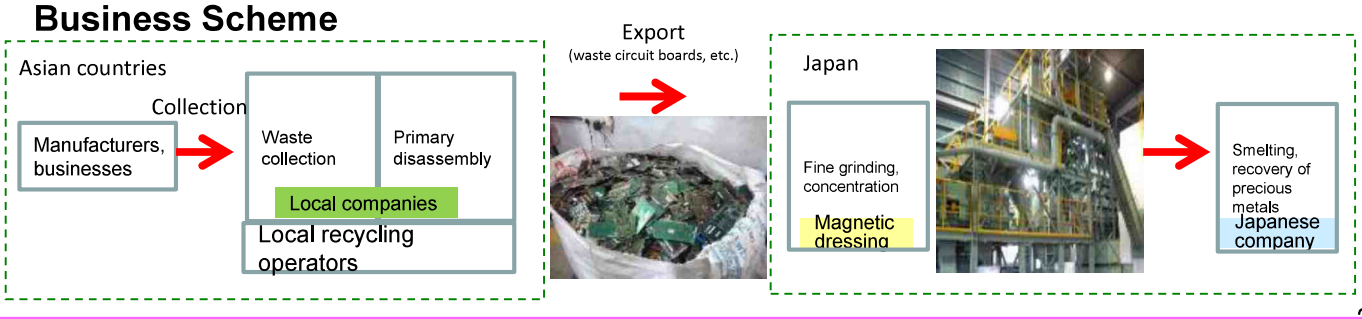
Expansion of recycling of electrical and electronic equipment waste, such as mobile phones and computers that generate large amounts of waste due to the rapid introduction of new products.

Philippines

Installation of collection boxes in communities and large-scale commercial facilities in Cebu and Manila for small electrical/electronic household waste, such as cell phones, and implementation of collection projects with the participation of the public.

Import of electrical and electronic waste from India and Viet Nam are the first cases in the world under the Basel Convention.

Business Scheme



Sharing Benefits as Part of Asia

Kitakyushu: Economic benefits
- Activate the local economy
- Create new industries by learning from Asia

Asian Cities: Social benefits
- Improved lifestyles
- Solutions for environmental issues
- Improved energy efficiency

A relationship of mutual learning and support!

Thank you for your attention!

For further information, please contact

Kitakyushu Asian Center for Low Carbon Society

Environment Bureau, City of Kitakyushu, Japan

http://www.asiangreencamp.net/