



Case Study: City-to-City Cooperation under the JCM Scheme (Surabaya / Kitakyushu)

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History of city-to-city cooperation

Sign in the JCM
(Aug. 2013)

2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

National policy

「New Approach to Development Strategy」
(2009.12~)
JICA projects
(PPP, BOP, Support for SMEs)

「Kitakyushu new approach to development strategy」(2013.3)

City-to-city cooperation

「Environmental Cooperation Network of Asian Cities」
(1997 -)

「Joint statement on strategic environmental partnership」
(2011.3)

「Kitakyushu Initiative Network」
(2000 - 2010)

Kitakyushu Asian Center for Low Carbon Society
(2010.6)

「Green Sister City」
(2012.11)

City target: 150% of CO2 reduction in Asia by 2050



Human Resource



Ir. Tri Rismaharini

DKP Director
(2005~)

BAPPEKO Director
(2008~)

Mayor of Surabaya City
(2011~)



Receipt of Surabaya city staff: CLAIR

Mr. Gigin Ginanjar



2012

Mr. Satriyo Soesanto



2014

Receipt of trainees from Surabaya
(2003, 2004)



ウイスヌ・ウィボウオ
インドネシア東スラバヤ市
開発計画局

Compost training:
Surabaya City staff, NGO staff
(2005)

Receipt of trainees:
JICA, CLAIR, Kitakyushu city budget, IGES
(2006~2011)

Technology transfer

「Survey on sound waste management」
(2002)JBIC

「Cooperation project for Composting food waste」
(2004~06) GEF

「F/S study for manufacturing and selling composts」
(2007)

Capacity building for water quality management : (2007~08)

JICA grassroots cooperation project

Waste water treatment project:

(2011~13) JICA grassroots cooperation project

Energy

• Project for cogeneration & energy saving. Nippon Steel & Sumikin Engineering Co., Ltd. etc. (2012~)

Waste

• Pilot project for establishing recycling-oriented intermediate waste processing facility. Nishihara Corp. etc. (2012~)
• FS on waste-to-energy facility development. Hitachi Zosen Corporation. etc. (2014~)

Water

• Sewage improvement project. Original Engineering Consultants etc. (2012~)
• Installation of small solar-powered desalinization machine. Suido Kiko Kaisha Ltd. Toray Industries Inc. etc. (2011~)
• Demonstration project on production system for drinking water. Isikawa Engineering Co., Ltd. etc. (2014~)

Institutional Development



(2001)



(Current)

**JCM F/S project (MOEJ)
IGES etc. : (2013~)**

「Vision of Development Plan (2005-2025)」

Project on Low-Carbon City Planning in Surabaya (JCM F/S, FY2013)

Japan-side

City of Kitakyushu

Project Management

IGES

Kitakyushu Asian Center
for Low Carbon Society



Green Sister City (Nov. 2012)

Indonesia-side

City of Surabaya

**Development Planning
Bureau (BAPPEKO)**

Intern'l Cooperation Div.

Energy sector

**NTT DATA Institute
of Management
Consulting Inc.**

NTT Facilities Inc.
Green Prop Co., Ltd
KPMG Azusa LCC,

Cooperation:
Fuji Electric Co., Ltd.
Nippon Steel &
Sumikin Engineering
Co., Ltd.

FS for energy saving
and dispersed power
system



Local companies, city hall,
universities, hospitals,
shopping malls, data
centres etc.

Cogeneration
technology

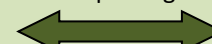


PT SIER, PT PIER, local
companies, National
Electricity Company
(PLN)

Solid waste sector

Cooperation:
Nishihara Co., Ltd.

Waste sorting,
recycling,
composting



Dept. of Cleanliness and
Landscaping (DKP),
Environment Dept. (BLH)

Hitachi Zosen Co., Ltd.

Waste-to-energy
(incineration)



Ministry of Energy and
Mineral Resources,
Ministry of Public Work,
Ministry of Environment

Amita Co., Ltd.

Waste-to-energy for
industrial waste



Local companies,
cement company

Transportation sector

Public transportation,
Improvement of traffic system for waste
collection vehicles, low emission vehicles

ALMEC VPI Co., Ltd.

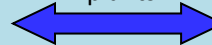


Transportation Dept., bus
and taxi companies, DKP

Water resource sector

Matsuo Sekkei Co., Ltd.
Kitakyushu City Waster
and Sewer Bureau

Energy saving at water
and sludge treatment
plants



PDAM, Keputih sludge
treatment plant, Industrial
Estate Company (PT SIER)

Cooperation: Findings of other projects in Surabaya funded by other sources were shared to this project.

Project on Low-Carbon City Planning in Surabaya (JCM F/S, FY2014)

Japan-side

City of Kitakyushu

Project Management

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Green Sister City (Nov. 2012)

Indonesia-side

City of Surabaya

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NTT Facilities Inc.
Fuji Electric Co., Ltd.
Nippon Steel & Sumikin
Engineering Co., Ltd.
AT GREEN Co., Ltd

Energy saving and
dispersed power
system for buildings



Dept. of Construction,
Institute of Technology
Surabaya (ITS), office
buildings, hotels,
city hall, universities,
hospitals, shopping malls

Cogeneration
technology



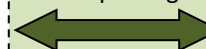
PT SIER, PT PIER, local
companies, National
Electricity Company (PT
PLN), gas companies

Solid waste sector

Cooperation:
Nishihara Co., Ltd.

Funded by JICA

Waste sorting,
recycling,
composting



Dept. of Cleanliness and
Landscaping (DKP),
Environment Dept. (BLH),
fertilizer company (PT
Petrokimia)

Cooperation:
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Co., Ltd.**

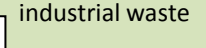
Funded by MOEJ

Waste-to-energy
(incineration)



Ministry of Energy and Mineral
Resources (ESDM), Ministry of
Public Work, Ministry of
Environment, Dept. of
Cleanliness and Landscaping
(DKP), landfill management
company (PT Sumber Organik)

Waste-to-energy for
industrial waste



Amita Co., Ltd.

Ministry of Environment, Dept.
of Industry, local companies,
cement companies (PT Semen
Indonesia), paper producing
companies

Cooperation: Findings of other projects in Surabaya funded by other sources were shared to this project.

Results of F/S in FY2014: CO2 Emissions Reduction Potential

[] Including avoidance of methane emissions

Area		Contents	Emissions reduction potential (t-CO2/yr)	Project cost [USD 1,000]	1. Cost performance [USD /t-CO2/yr]	2. Cost performance per subsidy [USD/t-CO2]	Co-benefits (other impacts)
Energy	Energy saving in buildings (LED lights, A/C, BEMS, co-generation)	Hotel A	250	130	520	17 [15 yrs]	Reducing electricity consumption
		Hotel B	3,600	4,000	1,100	37 [15 yrs]	
		Commercial building A	1,600	3,400	2,100	70 [15 yrs]	
		Office building A	200	350	1,800	60 [15 yrs]	
	Heat and power supply (co-generation) at industrial zone	SIER (70MW, 30t/hr)	190,000	85,000	450	15 [15 yrs]	Energy saving, CNG utilization
		PIER (700MW, 30t/hr)	190,000	85,000	450	15 [15 yrs]	
Solid Waste	Waste separation, recycling, composting	150t/day capacity, reducing frequency collection vehicles	[8,300]	2,000-3,000	[240-360]	[13-20] [15 yrs]	Recycling, reducing landfill waste
	Waste-to-energy, incineration	500t/day capacity, power 9,330kW (4MPa x 400°C)	30,200	50,000	160	53 [15 yrs]	Reducing landfill waste, resource efficiency
	Utilization of industrial waste	Liquid fuel: 5,000t/yr, Cement material: 24,000t/yr	6,200	3,400	550	30 [9 yrs]	Efficient use of hazardous waste

1. Cost performance = Project Cost / Emissions reduction potential

2. Cost performance per subsidy = Cost performance / expected useful life / 50% subsidy

Implementation Plan of JCM Pilot Projects

Area		Contents	Project cost [USD 1,000]	FY2015	FY2016	FY2017	FY2018 - 2019	Fund
Energy	Energy saving in buildings	1 hotel	4,000	EPC	O&M, MRV			MOEJ
		1 hotel, 1 commercial building, 1 office building	4,300	P/S	EPC	O&M, MRV		
	Heat and power supply (co-generation) at industrial zone	SIER (70MW, 30t/hr)	85,000	Detailed F/S	P/S	EPC	O&M in FY2019	JICA & MOEJ
		PIER (70MW, 30t/hr)	85,000	Detailed F/S	P/S	EPC	O&M in FY2019	
Solid waste	Waste separation, recycling, composting	150t/day capacity	2,000-3,000	EPC	O&M, MRV			JICA & MOEJ
	Waste-to-energy, incineration	500t/day capacity, power generation: 9,330kW (4MPa x 400°C)	50,000	Detailed F/S	P/S	EPC	O&M in FY2019	JICA & MOEJ
	Utilization of industrial waste	Liquid substitute fuel: 5,000t/yr Cement raw material: 24,000t/yr	3,400	Detailed F/S	P/S, EPC	O&M, MRV		MOEJ

* F/S: Feasibility Study P/S: Project Formulation Study MOEJ: Ministry of the Environment, Japan JICA: Japan International Cooperation Agency
EPC: Engineering, procurement and construction O&M: Operation and maintenance MRV: Measurement, reporting and verification

Low-Carbon Action Plan Development in Surabaya (JCM F/S, FY2015)

Japan-side

City of Kitakyushu

Project Management

IGES

Kitakyushu Asian Center
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Green Sister City (Nov. 2012)

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dispersed power
system for buildings



Dept. of Construction, Cipta
Karya, Institute of
Technology Surabaya (ITS),
office buildings, hotels,
city hall, universities,
hospitals, shopping malls

Cogeneration
technology



PT SIER, PT PIER, local
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Waste-to-energy
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Waste-to-energy for
industrial waste



Ministry of Environment, Dept.
of Industry, local companies,
cement companies (PT Semen
Indonesia), paper producing
companies

Cooperation:

Findings of other projects in Surabaya funded by other
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IGES is developing more efficient way to promote JCM project in FY2015



SURABAYA GREEN BUILDING AWARENESS AWARD 2014



SELECTION 1

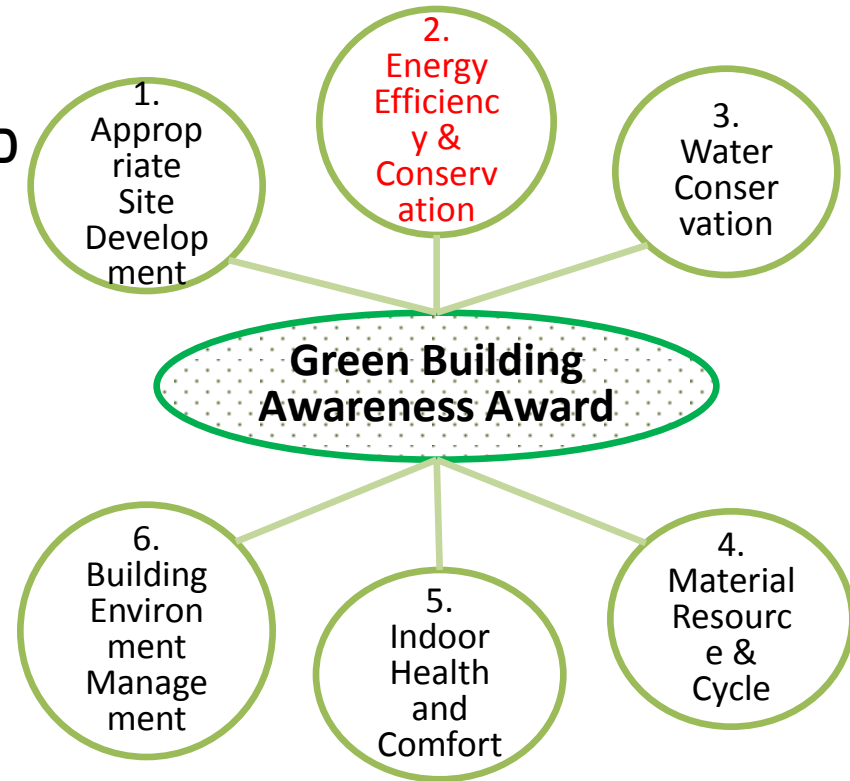
- Out of 138 buildings, 59 buildings are nominated
- Hotel : 15 buildings
- Apartment : 13 buildings
- Mall : 13 buildings
- Office building : 18 buildings

SELECTION 2

- From the fulfillment of self assesment, 27 buildings are nominated
- Hotel : 10 buildings
- Apartment : 7 buildings
- Mall : 3 buildings
- Office building : 7 buildings

SELECTION 3

- From the presentation result, below are the 12 Awards Winnings
- Hotel 3 buildings : *Sheraton, JW Marriott, Alanaura*
- Apartment 3 buildings : *Waterplace, Tribium, Cosmopolis*
- Mall 3 buildings : *Tunjungan Plaza, Grand City, Linnara*
- Office Building 3 buildings : *Indofood, Eze Sampurna, Gino Wanasari*





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