

Studi Kasus Energy Saving for Air-Conditioning at Shopping Mall

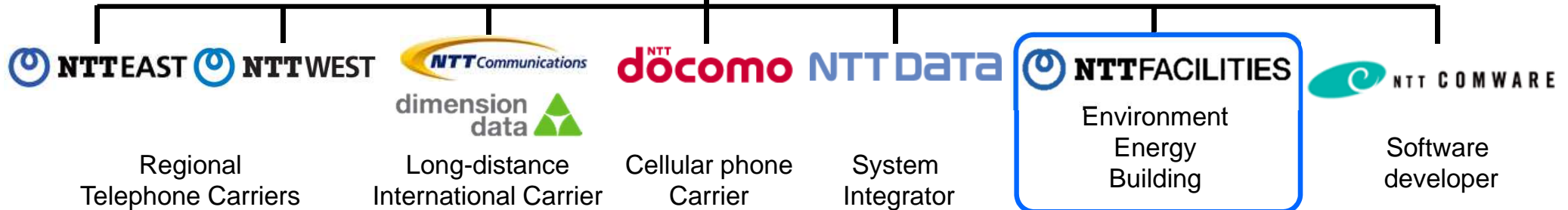


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1. Company Profile
 2. The stakeholder engagement process
 3. Project Outline
 4. Way forward

1 About NTT FACILITIES

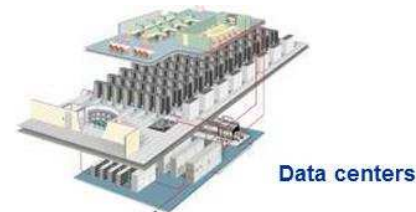
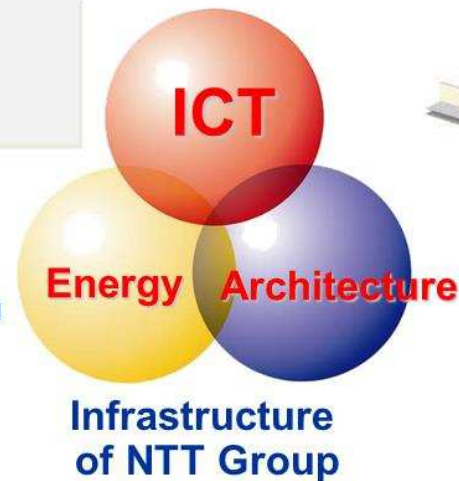
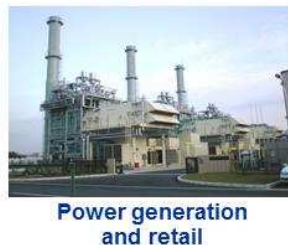
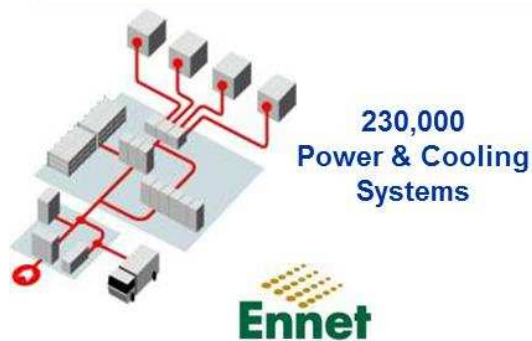


NTT NIPPON TELEGRAPH AND TELEPHONE CORPORATION (Holding Company)



NTT FACILITIES provides Energy-Architecture-ICT combined services

Est. : December 1, 1992
Employees: 5,000
Revenue : 276 billion JPY



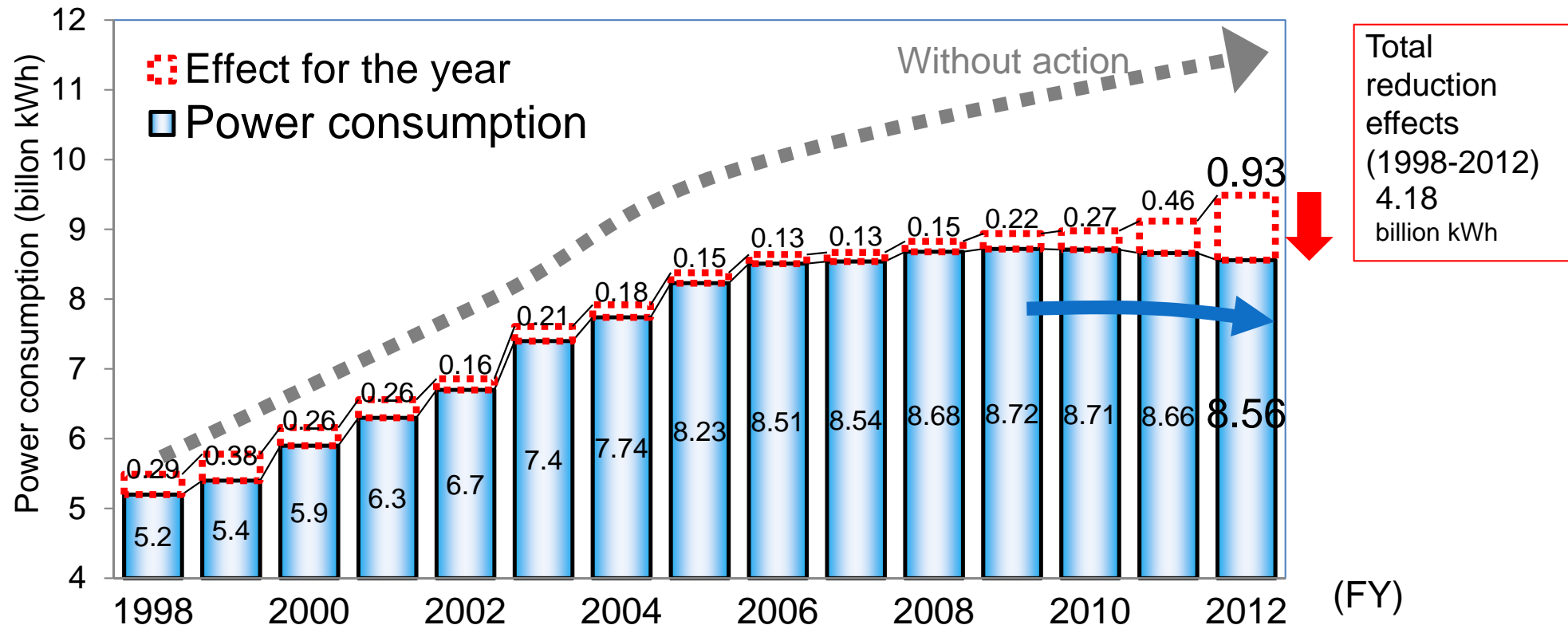
Effects of the **Total Power Reduction** campaign

✓ reduction effects

1997 – 2012 : 4.18 billion kWh

2012 : 0.93 billion kWh (\$ 150 million cost reduction)

In recent years, we have achieved the suppression of the amount of power used by the TPR Campaign.



NTT FACILITIES has led NTT group's effort for TPR

Design achievement of 30,000 buildings



GRAND FRONT OSAKA / Commercial, Office, Hotel



AKIHABARA UDX / Commercial, Office



NTT DOCOMO Sumida
/ Commercial, Office



NTT SHINAGAWA Bldg
/ Commercial, Office



NTT CRED OKAYAMA
/ Commercial, Office



KYOTO SHINPU-KAN / Commercial



TORRADO MEJIRO / Commercial



FUKAGAWA GATHARIA
/ Commercial, fitness



TCINGTAO CITY DESIGN / China



SAITAMA MEDIA WAVE / Telecom, Office



NTT DOCOMO YOYOGI / Telecom, Office



Asahi Broadcasting Corp Head-office
/ Office



Tokyo International Airport Terminal2
/ Airport

2 The stakeholder engagement process



1. Objective of the Kitakyushu Model

- Kitakyushu, which faced and overcame pollution for the first time in Asia, became a leading environmental city in Japan.
- Kitakyushu is developing the Kitakyushu Model (support tool) that systematically arranges information on the technologies and know-how of Kitakyushu from its experience in overcoming pollution to its quest as an environmental city.
- Kitakyushu is utilizing the Kitakyushu Model to promote the export of customized infrastructure packages to cities overseas, and grow together with Asia.

2. Applications of the Kitakyushu Model

- Support tool to examine future ideal city image and for cities to take appropriate measures and procedures to achieve this.
- Support tool to examine management systems for waste, energy, water and sewage services, and environmental protection.
- Support tool to develop sustainable master plans that integrates waste, energy, water and sewage services, and environmental protection.



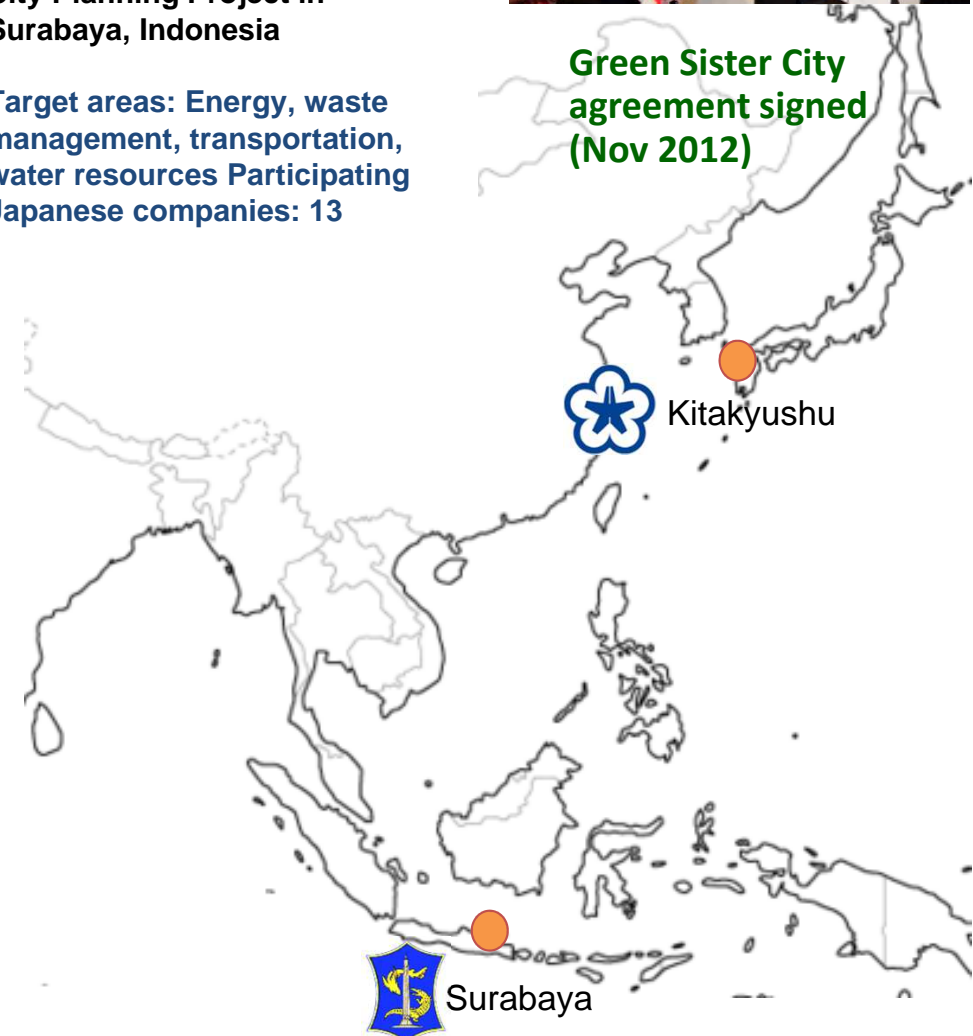
Surabaya, Indonesia:
2nd largest city in
Indonesia with a
population of 3 million

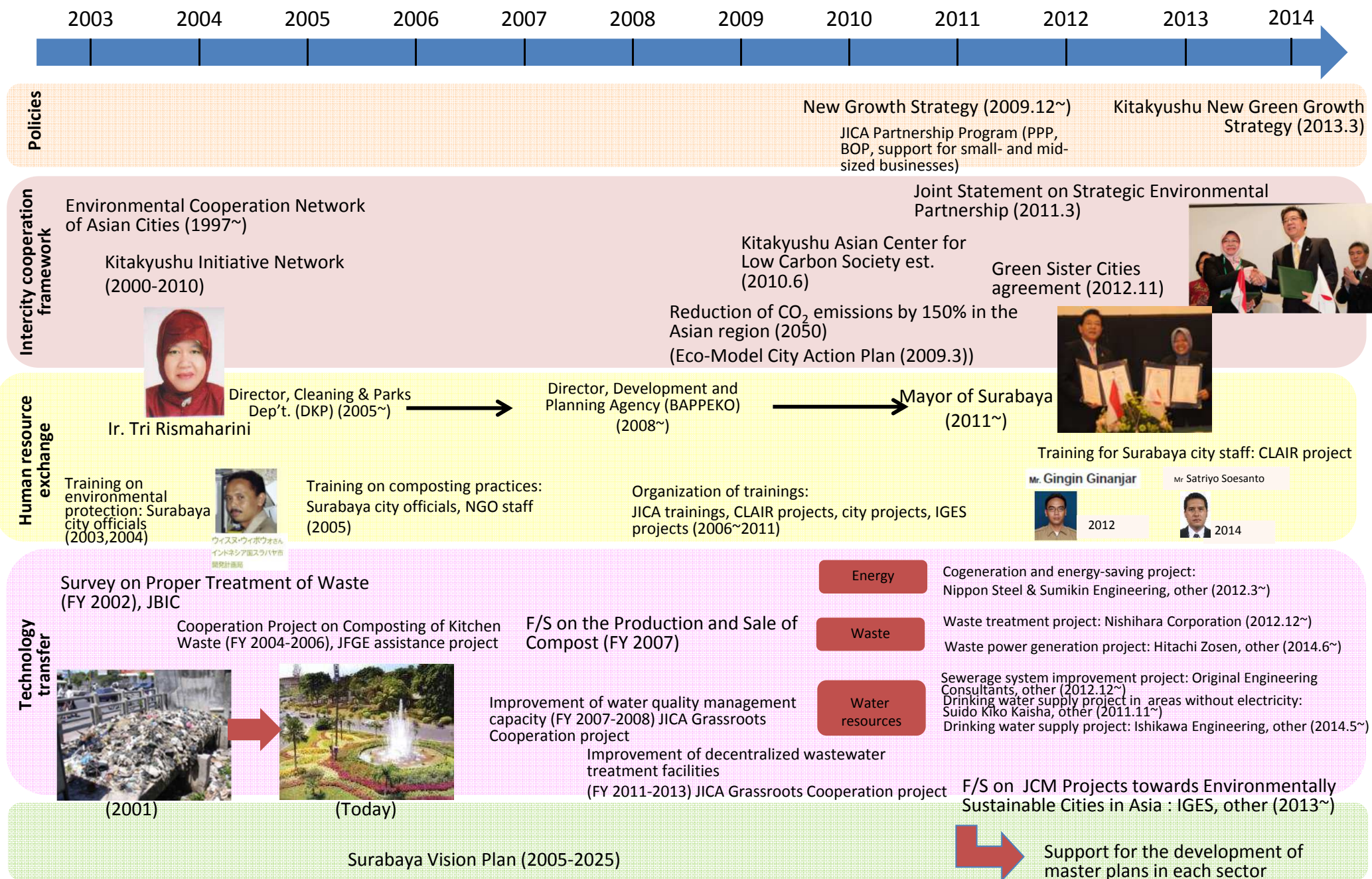
<FY 2013- 2015> Low Carbon
City Planning Project in
Surabaya, Indonesia

Target areas: Energy, waste
management, transportation,
water resources Participating
Japanese companies: 13



Green Sister City
agreement signed
(Nov 2012)





FY2013

FY2014

FY2015

Energy sector

63,000t-CO₂/yr

Energy sector

Energy sector

Transportation sector

1,000t-CO₂/yr

Solid waste sector

72,000t-CO₂/yr

Solid waste sector

Solid waste sector

Water resource sector

15,000t-CO₂/yr



Coordinating Ministry
for Economic Affairs
Republic of Indonesia

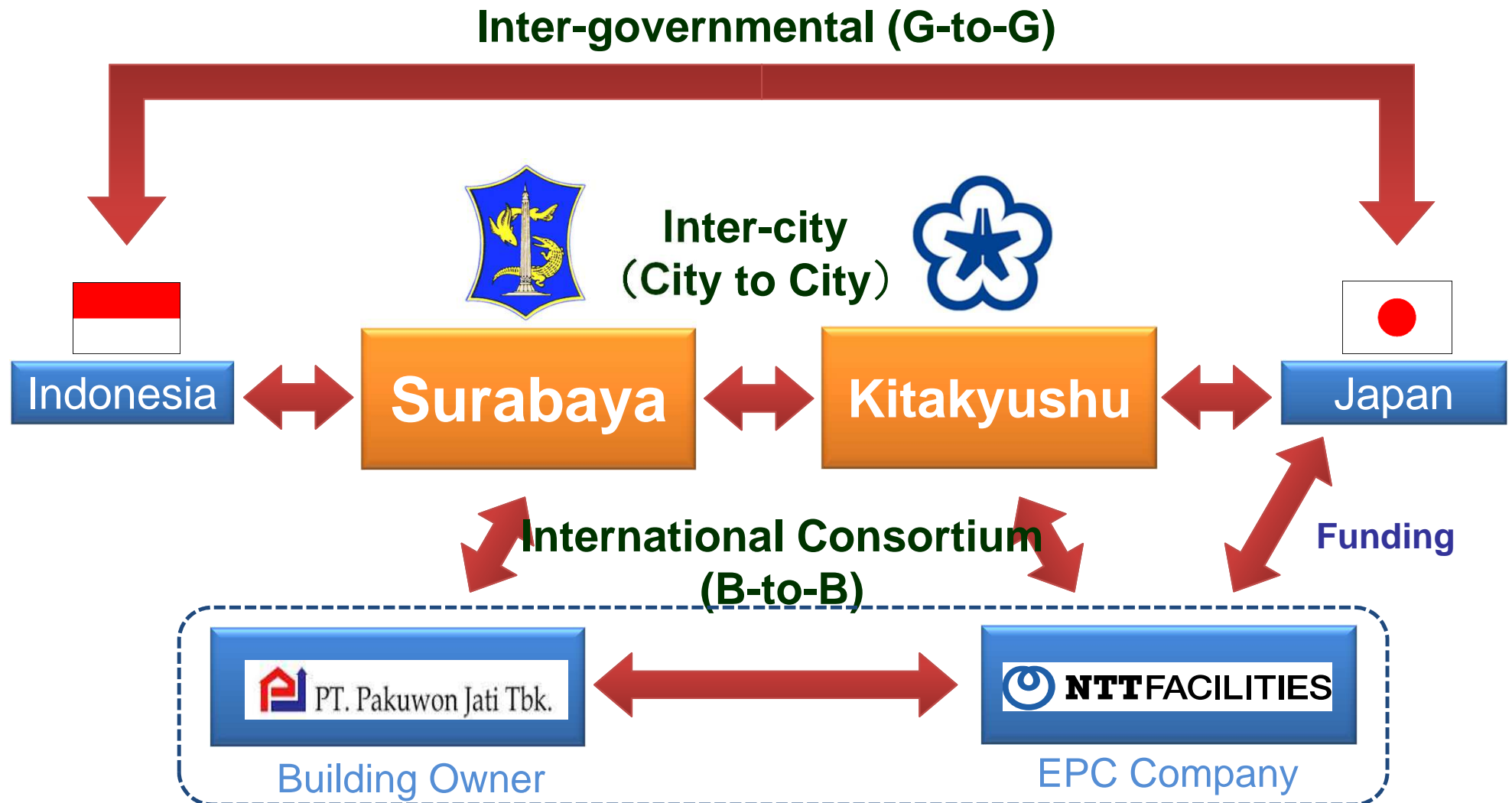


Ministry of the Environment
Government of Japan

**Joint Crediting Mechanism (JCM)
Model Project (2015)
INDONESIA and JAPAN**

Prioritization
(feasibility & cost-effectiveness)

Application & Expansion
(feasibility study → model project)



3

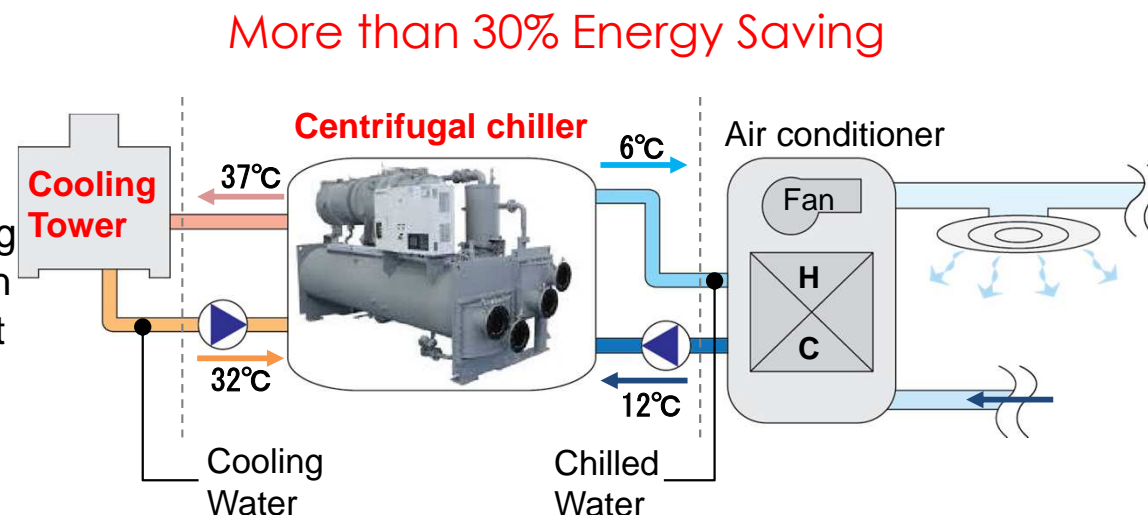
Project Outline



Outline of GHG Mitigation Activity

The project aims to reduce electricity consumption in the shopping mall through introducing advanced & efficient Japanese centrifugal Chiller system.

The project is to replace existing central cooling system with high efficient centrifugal chiller with capacity of 966TR x 4 units and 569TR x 1 unit in Pakuwon's shopping mall, Tunjungan Plaza, as well as to replace existing 8 cooling towers with efficient Japanese models.



Expected GHG Emission Reductions

996tCO₂/year

The GHG emission reductions are calculated based on the estimated electricity consumptions based on the conservatively estimated COP of a reference cooling system and a project COP of the centrifugal chiller as well as the grid emission factor.

Sites of JCM Model Project



Java Island



Tunjungan Plaza (@Surabaya)

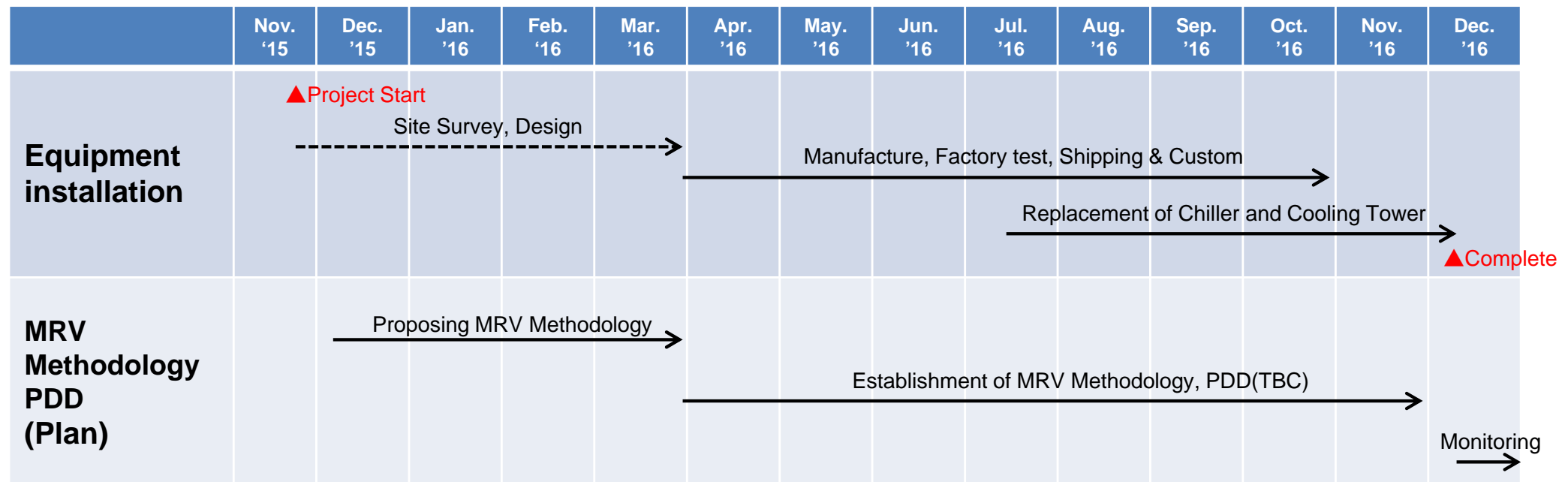
Scope

More than 30% Energy Saving



Centrifugal Chillers: 569TR x 1 unit, 966TR x 4 units
Cooling Towers : 3,200kW x 8 units

Schedule



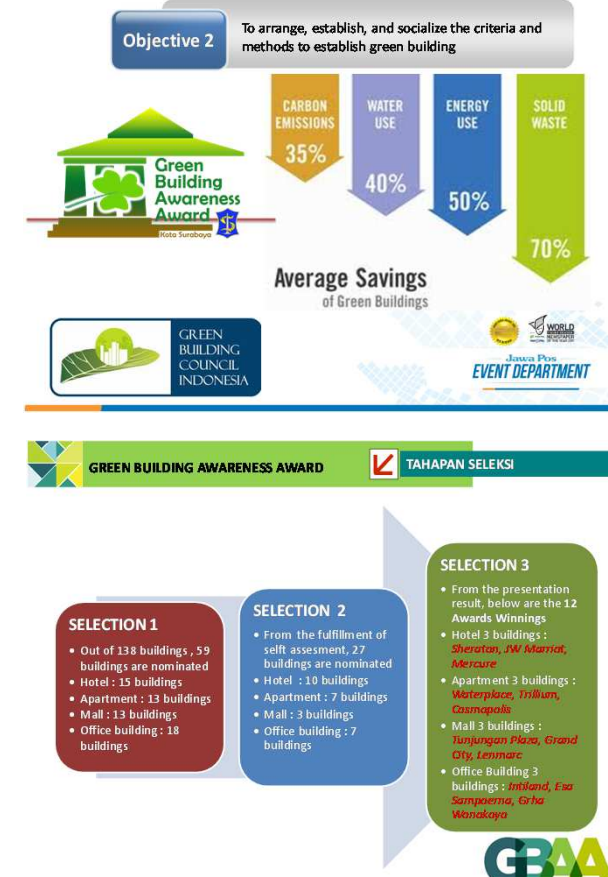
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Way forward



Surabaya City enforced Green Building Awareness Award as part of their measurements to spread buildings being conscious of energy efficiency, etc. We have been discussing JCM FS based on this effort.

GREEN BUILDING AWARENESS AWARD



Source: City of Surabaya

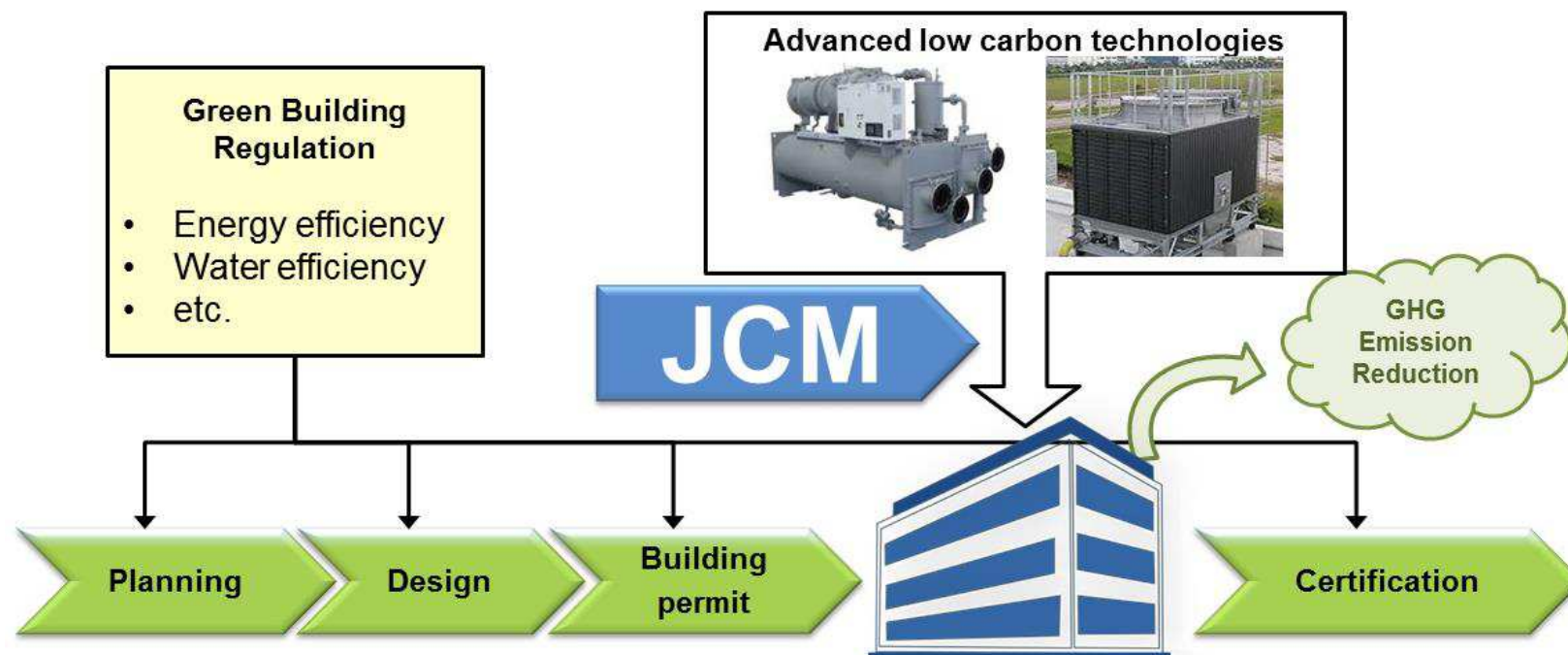
1 Expansion to other private buildings

Propose to other potential buildings which is owned by the developer based on this successful model project.

2 Cooperation with GBAA

GBAA has been led by BAPPEKO so far, after FY2016, however, the initiative of GBAA will move to Cipta Karya and they will newly develop Green Building Regulation.

It is expected that the needs of JCM subsidy for facilities will be increasing under this regulation because this may ask in the future all the buildings of new construction satisfied the energy saving requirements, etc.



Terima kasih atas perhatian Anda.

