Attachment01
Kick-off seminar

Program

Kick off Meeting for
Feasibility Study for Developing Joint Crediting Mechanism (JCM) Projects under City-to-City Collaboration between Batam city and Yokohama city

- Date: July 14, 2016
- Time: 13:00 to 16:00, to be determined
- Venue: Harris Hotel in Batam
- Participants : Batam city (including the Mayor of Batam), BIFZA (including the chair of BIFZA), City of Yokohama (including Executive Director),
- PT. MEGA GREEN TECHNOLGY, PT. DESA AIR CARGO BATAM
- iFORCOM Tokyo Co., Ltd. , Finetech Co., Ltd., Nippon Koei Co., Ltd.
  (Total: 30~50 persons)

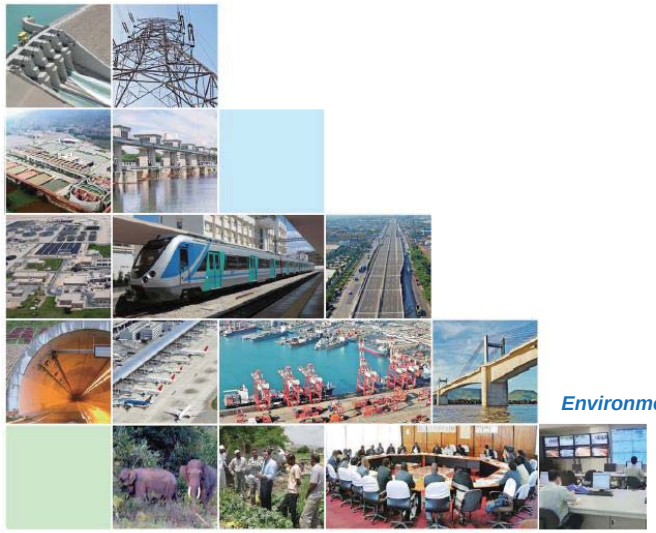
Agenda:

Time	Program	Speaker
13:00-13:05	Introduction of participants	MC
13:05-13:15	Opening remarks	Batam city
13:15-13:25	Opening remarks	BIFZA
13:25-13:45	Opening remarks	City of Yokohama
13:45-14:00	Current situation of JCM in Indonesia (tentative)	Indonesia JCM secretariat
14:00-14:15	Key note – Master plan (tentative)	Batam city
14:15-14:30	Key note – Waste to energy(tentative)	Batam city
14:30-14:45	Key note – TBD	BIFZA
14:45-15:00	Tea break	---
15:00-15:15	JCM project formulation study	iFORCOM etc.
15:15-15:30	JCM project formulation study	Finetech etc.
15:30-15:40	Way forward in 2016	Nippon Koei
15:40-15:45	Announcement of new member of “Task force for the city-to-city collaboration between Batam and Yokohama”	
15:45-15:55	Closing remarks	Batam city
15:55	Close	---

Note : Order and time of program will be fixed later.

End

Project for Development JCM Projects under City-to-City Collaboration between Batam city and Yokohama city



July 2016

Masaru Ishikawa (Mr.)

Manager, Climate Change Group
Environmental Science & Engineering Dept.
EM : Ishikawa-ms@n-koei.jp

NIPPON KOEI

Objectives of the city-to-city collaboration

NIPPON KOEI

- Our project aims to support (i) promotion of JCM project formulation and (ii) support on Green City Programme in Batam through city-to-city collaboration activities.
- Under the process of JCM project formulation, it aims not only "dissemination of green (low carbon) technologies" but also "share of knowledge and know-how " among Batam entities/organzations.

Advanced green (low carbon) products /technologies from Japanese entities

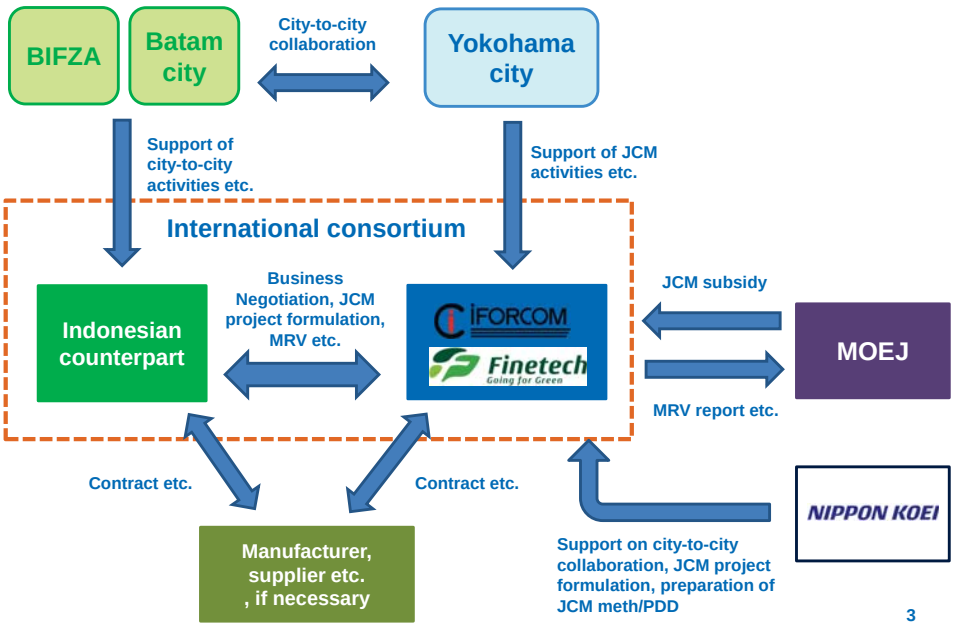
+

Sharing JCM experience , knowledge and know-how

→ Supporting the Green City Programme in Batam , in order to solve the current/urgent issues

Our support : Project mapping for future development (1/2)

NIPPON KOEI



Our support : Project mapping for future development (2/2)

NIPPON KOEI

Project mapping under the "Concept of Green city program" and realize the project after the next year

Green city program for Batam city

Three pillars for Sustainable city 2015-2045



I. Green transportation
- Plan for Bus Rapid transit system, Bike lanes, pedestrian walk

II. Green water
- Water quality improvement of reservoirs

III. Green waste water
- Recycling of wastewater in commercial and industrial area
- off site sanitation, IPLT and central IPAL
- Improvement of drainage system and flood control



Overall schedule

NIPPON KOEI

Items	6	7	8	9	10	11	12	1	2	3
1 : JCM project formulation										
1) Confirmation of current situation	■	■	■							
2) Check JCM applicability			■	■	■					
3) Prepare JCM documents for subsidy application					■	■	■	■	■	
2 : Support on prj. Mapping										
1) Confirmation of current situation	■	■	■							
2) Prj. matching to existing financial scheme etc.				■	■	■	■			
3) Support on future prj. formulation						■	■	■	■	
3 : Reporting							draft		final	
4 : Workshop etc.										
5 : Invitation to Japan etc.							■			

Ref : JCM examples (1/3)

NIPPON KOEI

MP2013-ID01&02 **Energy Saving for Air-conditioning and Process Cooling at Textile Factory** | Indonesia |

Expected GHG Emission Reductions

Project 1: 117 tCO_2/year
Project 2: 117 tCO_2/year



Batang, Central Java, Indonesia

Project Owner
Japan：Ebara Refrigeration Equipment & Systems and Nippon Koei Co., Ltd.
Indonesia：PT. Primatexco and PT. Ebara Indonesia

In Indonesia, humidity control is indispensable for the textile industry to maintain product quality and massive energy output, which is required for the adjustment of factory air conditioning. The target factory replaces old-fashioned chillers (230USRt and 250USRt) with high-efficiency chillers (500USRt), in order to save energy and mitigate CO_2 emissions. High-efficiency chillers adopt a high-performance economizer cycle and a super-cooling refrigerant cycle in order to save energy. Also, the chillers use low-pressure refrigerant (HFC-245fa) with zero ODP(Ozone Depletion Potential).







Source : JCM Feasibility Studies, GEC

Ref : JCM examples (2/3)

NIPPON KOEI

FS2014-16 **Introduction of Waste to Energy Plant in Yangon City** | Myanmar |

Expected GHG Emission Reductions

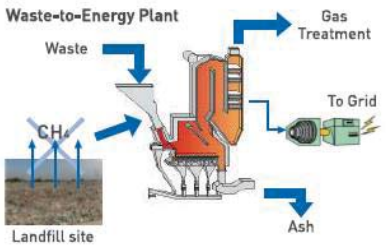
1,500 tCO_2/year



Yangon City, Myanmar

Implementing Entity：
JFE Engineering Corporation

By introducing a Waste-to-Energy plant, the reduction of the CH_4 emissions from landfill disposal sites and the substitution of electricity generated with fossil fuel reduce GHG emissions, reduce electricity shortages and achieve efficient waste treatment.









Source : JCM Feasibility Studies, GEC

Ref : JCM examples (3/3)

NIPPON KOEI

MP2014-MY01 **PV Power Generation and Relevant Monitoring System for the Office Building** | Malaysia |

Expected GHG Emission Reductions

179 tCO_2/year



Kuala Laupur, Malaysia

Project Owner
Japan：NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc
Malaysia：KEN TTDI SDN BHD

The PV panels installed on the top of building roof in Kuala Lumpur, Malaysia will generate electricity power and contribute to CO2 reduction.
The solar cell is made of a thin monocrystalline silicon wafer surrounded by ultra-thin amorphous silicon layers. This product offers the industry's leading performance and value; 19.4% conversion ratio. The electricity amount generated on solar panel will be monitored and managed in the data management server.



an example of Installation work of PV



INVERTER



PV mounting structure on metal deck roof



DATA LOGGER

Source : JCM Feasibility Studies, G9C

Ref : Yangon experience on city-to-city collaboration (1/2)

NIPPON KOEI

To solve energy issues in Industrial Park(IP) in Myanmar, the following renewal /introducing activities are expected as JCM project not only in IP infrastructure but also tenant facilities.

- High efficiency air conditioning system
- High efficiency lighting system
- High efficiency water supply system
- Solid waste energy system
- Back-up power supply system
- Distribution line etc.





Ref : Yangon experience on city-to-city collaboration (2/2)

NIPPON KOEI

Low carbon building management system

- High efficiency air conditioning system
- High efficiency lighting system
- Solid waste energy system
- Back-up power supply system
- Heat shield film/panel
- Solar power system etc.



Low carbon building management system

- High efficiency water pump system
- High efficiency waste water pump system
- Solid waste energy system etc.



Project identification of renewable energy /new energy

- Solar power system
- Biomass power generation system
- Biogas power generation system
- Back-up power supply system
- Application of natural gas etc.



City-to-City Collaboration

Toward Smart and Green Island of Batam

Y-PORT CENTER



Development Cooperation Division, International Affairs Bureau
City of Yokohama

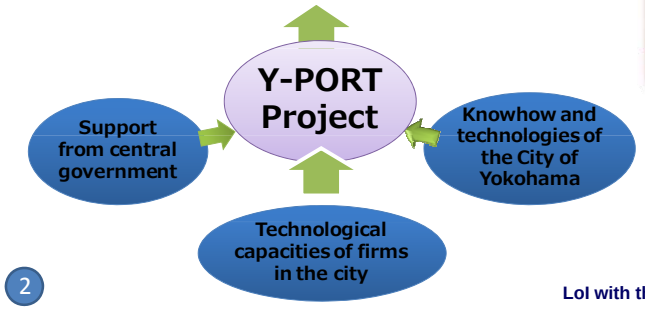
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Yokohama' s International Development Cooperation – Y-PORT

Yokohama
Partnership of Resources and Technologies

It is essential to provide not simple products but solutions through combining technologies and knowhow of the public and private sectors

Enhancement of international technical cooperation





MOU with JICA



MOU with ADB



LoI with the City of Batam in May, 2015

City to City Collaboration

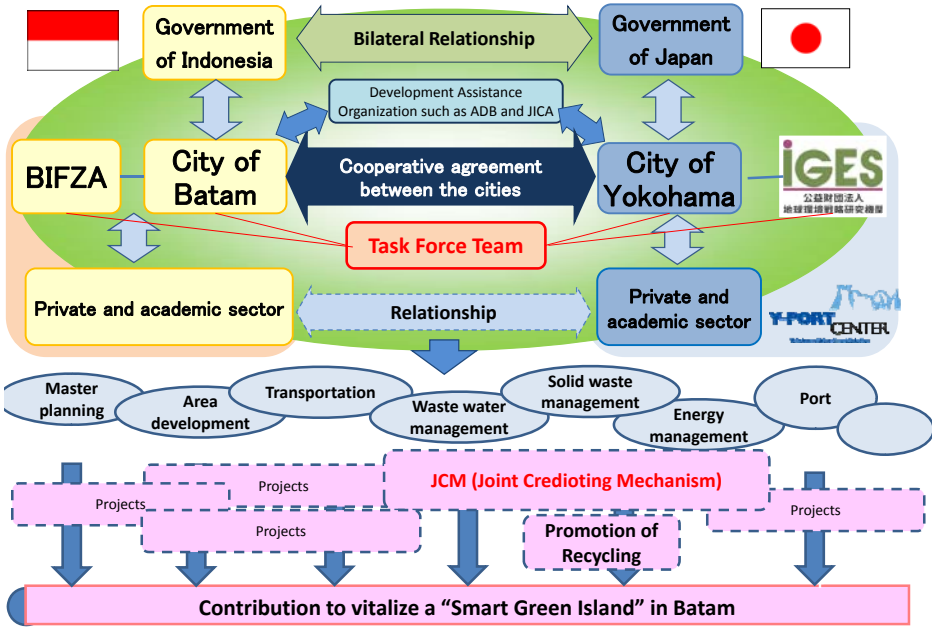
Letter of Intent on Technical Cooperation for Sustainable Urban Development Signed with the City of Batam, on 27th May, 2015.



Contents of Agreement

1. The City of Yokohama will offer technical advice in promoting the eco-city development of the City of Batam.
2. **The Parties will encourage participation of the private sector and academic organizations.**
3. The Parties will take action to obtain cooperation of the governments of both countries and international organizations.
4. The Parties will mutually provide information essential to implementing the above collaboration effectively..

Proposed Framework for Y-PORT activities under the City to City Cooperative Relationship



Dialogues among Batam City, BIFZA and Y-PORT Center





JCM study Missions
in April, August, December and January





Dialogues among Batam City, BIFZA and Y-PORT Center

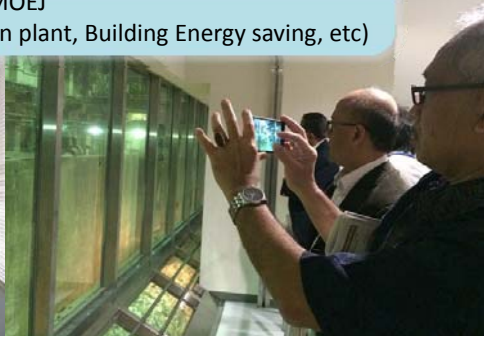




Activities in Yokohama in 2016

- Asia smart city Conference
- JCM Workshop organized by MOEJ
- Technical site visit (incineration plant, Building Energy saving, etc)





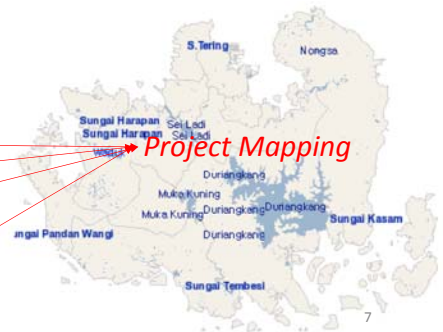
"BATAM TOWARDS GREEN & RESILIENT CITIES"

"TOWARDS A GREEN CITY"

1. Green Planning & Design
2. Green Open Space
3. Green Community
4. Green Energy
5. Green Waste
6. Green Water
7. Green Transportation
8. Green Building

Action Planning to realize Green Smart Island of Batam by identifying prioritized projects

Y-PORT Center can propose meaningful project composing Japanese cutting edge technologies, especially in four fields of Batam Master Plan



4. Green Energy
8. Green Building

Phase approaching



Generation 1



- **Energy-saving A/C System Project, supporting Eco-Airport Plan (iFORCOM, BIFZA)**

Preliminary approval by GEC/MOEJ with JCM Financial Support

Generation 2



- **Energy-saving Ferry terminal Project (iFORCOM, BIFZA)**
- **Energy-saving Hospital Project (iFORCOM, BIFZA, CoB)**
- **Energy-saving Hotel Project (iFORCOM, Harris Hotels)**



Feasibility studies are on going in 2016

4. Green Energy
5. Green Waste

Phase approaching



Generation 1:

- **Roof-top PV System with Demand Control Implementation Project (FINETECH, PT Desa Air Cargo)**

Applied to GEC/MOEJ in next round of the quickest possible manner



Generation 2:

- **High efficiency thermal desorption Project for Ship Oil Sludge (FINETECH, PT Mega Green)**

Feasibility studies are on going in 2016

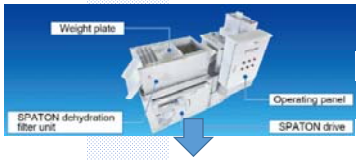


Generation 3:

- **PV System with Advanced Demand Control Implementation Project**
- **Add-on Biomass (Waste)-based Power Generator with Advanced Demand Control Implementation Project**

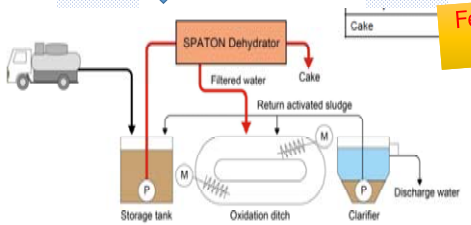
6. Green Water

Phase approaching



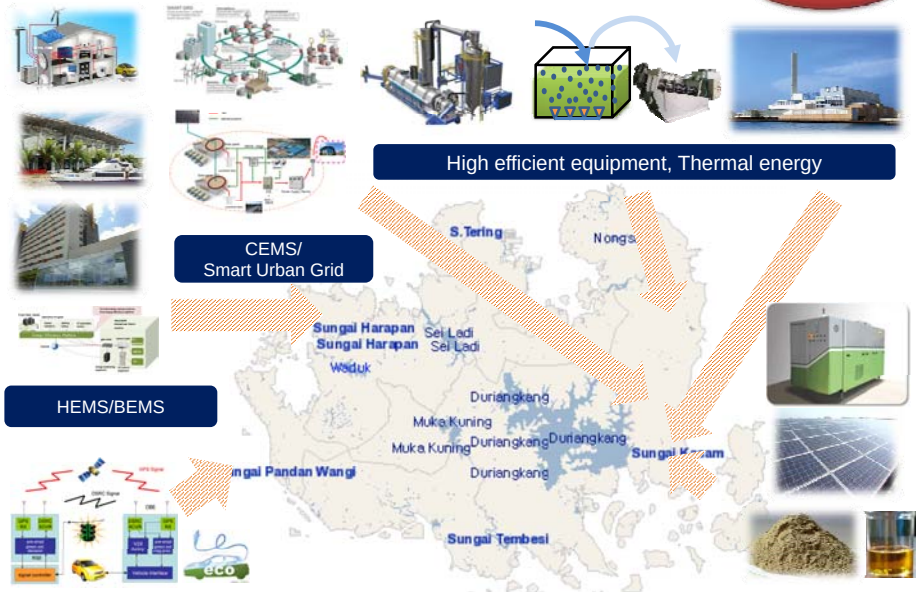
- **Septage Pre-treatment for improving IPAL of Batam Centre with dehydrator "SPATON" (JUSTEC-BIFZA)**

Feasibility study funded by JICA is on going in 2017



Smart Green Island Project Conceptual Mapping

Tentative



Thank you for your attention

Y-PORT address: ki-yport@city.yokohama.jp

Y-PORT CENTER
Yokohama Urban Smart Solution

PRESENTATION

JCM project formulation study

～Energy Saving～

Company Profile

Company name	iFORCOM Co.,Ltd.
Address	Kagawa building, 1326 Nakano, Midori-ku, Sagamihara-shi, Kanagawa 252-0157
Telephone	+81-42-784-5700
Fax	+81-42-784-5540
Establishment	October 1985
Representative	Hiroshi Kagawa (Representative director)
Capital	¥100,000,000
Employees	350 persons (group whole)
Bank	Seibu Shinkin Bank・Bank of Yokohama・Yachiyo Bank・Shoko Chukin Bank・Bank of Tokyo-Mitsubishi UFJ
Certification	ISO / IEC 27001:2005 (Information Security Management) ISO 9001:2008 (Quality Management) ISO 14001:2004 (Environmental Management)

Japan :

iFORCOM Co.,Ltd (Sagamihara)
iFORCOM Tokyo Co.,Ltd (Sapporo, Hirosaki, Morioka, Sendai, Yokohama, Sagamihara, Akasaka, Nagoya, Osaka, Fukuoka)
iFORCOM Smart Ecology Co.,Ltd (Sagamihara, Akasaka)

ASEAN :

Representative office in Indonesia (Jakarta)
Representative office in Philippines (Manila)



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History of Energy Saving

2012 Electricity prices soaring
→Start power-saving consulting
【ECO-PRO Ver.4 】

2011 Great East Japan Earthquake

2010 More than 2000 agreement

2004 Conclusion of the Kyoto Protocol
→Start operational improvement consulting
→Visualization of electricity consumption with the CO2 reduction goal
【ECO-PRO Ver.1】

2003 More than 1000 agreement

1996 Electric industry law revision →Start contract improvement consulting

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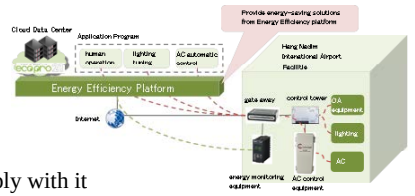
Overview

Energy-saving operation system

Business to build the best energy-saving promotion platform in response to user needs, we have track records to introduce more than 2500 facilities in Japan, then have developed in the office building, factory and mall in Indonesia.

Specifically, by utilizing the following, it is possible to construct verified optimum energy saving promotion platform at airports.

1. Know-how of the rule of "Energy efficiency improvement due to human operation (AC, OA equipment, etc.)"
2. Design know-how of the incentive scheme based on behavioral science in order to comply with it
3. Know-how to apply the "automatic control by utilizing information technology (active automatic control of AC)."



Customer in Indonesia

Sumitomo Corporation Polymatech

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Track Record

Japan









Overseas



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Offering Solution

We offer the following solution for the electricity usage reduction.

①Operational improvement on electricity usage

Check the usage of existing facilities, and by optimizing the operation method to reduce power consumption and achieve energy saving, saving CO2.

- Investigation in detail for the usage of office equipment, air conditioning (air conditioning related such as chiller, air handling units)
- Research and analysis for the optimal use development
- Rules formulated on how to use, documenting

②Inverter control of the chiller pump

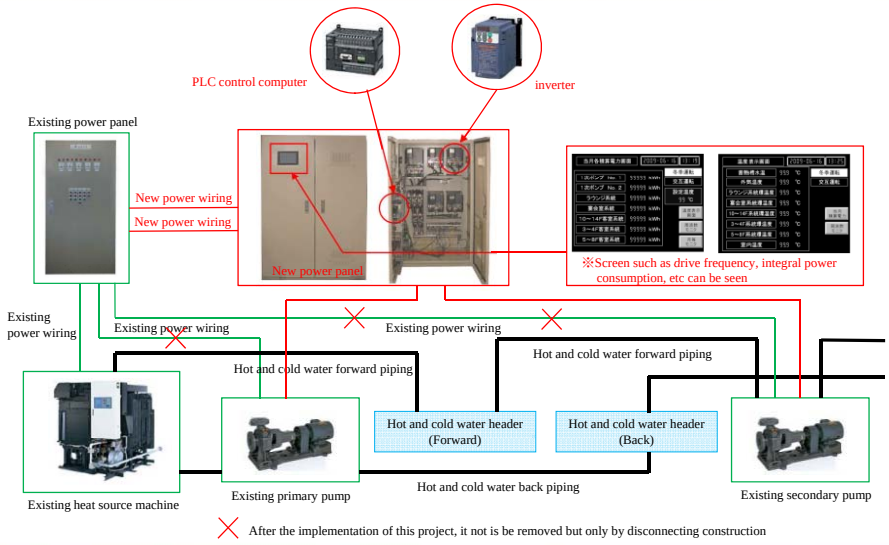
It established the inverter to the pump (motor) that comes with eight chiller, to control the output (number of revolutions). Check the operational status, if possible, it can also be carried schedule operation.

③Installation of the monitoring system

We will set up equipment to monitor the electricity usage.

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Overview of energy-saving equipment



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Calculation

We have calculated the electricity bills that can be reduced in Hang Nadim International Airport, from data on electricity usage that we receipt on the investigation on site on August 18, 2015.

①Operational improvement on electricity usage of airport facilities

- Improvement of operation method on air conditioning (air conditioning related such as chiller, air handling units)

  Reduction = 413,448kWh/year

- Improvement of operation method on office equipment

  Reduction = 215,812kWh/year

②Inverter control of the chiller pump

Reduction = 568,374kWh/year

Total reduction = 1,197,634kWh/year

CO2 reduction	= 1,005t CO2/year
CO2 reduction unit	= ¥4,975/tCO2

⇒reduced approximately 10%

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Phase Approaching Project



Generation 1

- Energy-saving A/C System Project, supporting Eco-Airport Plan

Generation 2 ← Where we are

- Energy-saving Ferry terminal Project
- Energy-saving Hospital Project
- Energy-saving Hotel Project







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Phase Approaching Project (Generation 2)

- **Energy-saving Ferry terminal Project**
  1. Ferry Terminal Sekupang
  2. Ferry Terminal Batam Center
  3. Ferry Terminal Telaga Punggur
  4. Ferry Terminal Harbour Bay
  5. Ferry Terminal Marina City
  6. Ferry Terminal Nongsa
- **Energy-saving Hospital Project**
  1. Rumah Sakit Otorita Batam
  2. RS Awal Bros
  3. RS Budi Kemuliaan
  4. RS Harapan Bunda
  5. RS BP Kawasan Batam
  6. RS St. Elisabeth
  7. RSUD Embung Fatimah Kota Batam
  8. Casa Medical Centre
- **Energy-saving Hotel Project**
  1. Harris Hotel Batam Center
  2. Harris Hotel Waterfront

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Tentative Schedule

Schedule

June	2016	Adoption of the propriety of application's equipment grant from the Ministry of the Environment, the determination of subsidy
July	2016	Kickoff (research, design, and installation)
August	2016	MOU
September	2016	Ministry of the Environment subsidy grant application
October	2016	Start the project
June	2017	Complete the project
July	2017	Start the monitoring
August	2017	Project for generation 2

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Contact us

iFORCOM Tokyo Co., Ltd.
Masakazu Hirokawa
Erwin Avianto

mail: m.hirokawa@iforcom.jp
e.avianto@iforcom.jp

Tokyo office
Tel :(+81)3-5510-5757
Fax:(+81)3-5510-5756

Representative office in Indonesia
Tel :(+62)21-2960-7507
Fax:(+62)21-2960-7501





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JCM Feasibility Study Kick-off Meeting
"Smart Green Island Project / Batam"
（Creating a Proposal for Low-Carbon Technology）

July 14, 2016, Batam, Indonesia

Going for Green

Finetech
Going for Green

www.finetech.co.jp

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FINETEC: Head Office / Labo / Plant / Associate



Finetech
Going for Green

Head Office (Laboratory : Tokyo Institute of Technology)
W-105 Tokyo Institute of Technology YVP
4259-3, Nagatsuta-cho, Midori-ku, Yokohama, Kanagawa, Japan 226-8510
TEL: 81+ 0453097901 FAX: 81+ 0453097902
WEB: www.finetech.co.jp

Fukushima Renewable Energy Co., Ltd



Koriyama Incubation center-3
1-1, Tamuramachi Tokusada aza Nakakawara, Koriyama-shi, Fukushima, Japan
963-1165
TEL 81+ 0249436521

Kita-kanto Green Plant



2969 Omata-cho, Ashikaga-shi, Tochigi 326-0141, Japan
326-0141
TEL 81+ 0284649314
FAX 81+ 0284649315

Tokyo Office



Rm407 Kikai Shinko Kaikan, 3-5-8 Shiba koen, Minato-ku, Tokyo, Japan
105-0011
TEL 81+ 0334361432
FAX 81+ 0334337901

Aizu-wakamatsu Office (Now New Open)

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Finetech
Going for Green

FINETECH : A member company of Y-PORT CENTER Yokohama Urban Smart Solution Alliance

Yokohama Urban Smart Solution Alliance

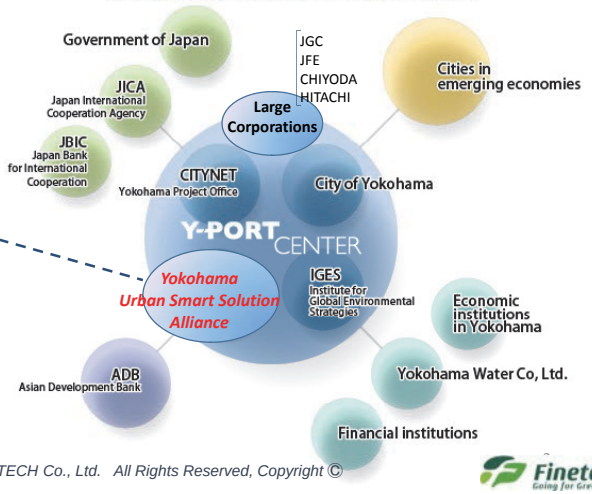
Over 10 Leading Private SMEs in Yokohama, including **FINETECH**, form up an alliance under the roof of Y-PORT CENTER to;

- Provide best available smart solutions
- Establish a showcase of smart urban solutions
- Serve and promote as one-stop shop with SME's knowledge and technologies

to cities in Asia and the world.

Y-PORT CENTER
Yokohama Urban Smart Solution

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Finetech
Going for Green

"SMART GREEN WORLD"… where we will live.

Developing and Expanding Smart Communities

Utilizing Green Energy

FINETECH's Global Initiative

- Smart Green Park >>> JAPAN
- Smart Green City >>> Thailand
- Smart Green Heritage Park >>> Cambodia



Renewable & Biomass Energy Mix



Advanced EMS for
Energy saving / Demand Control
Remote Monitoring & Control



A-EMS

Developing Green New Materials



Green Nano　　Green Plastics

Smart Living Place
Smart Working Place
Smart Transportation
Smart Urban Grid

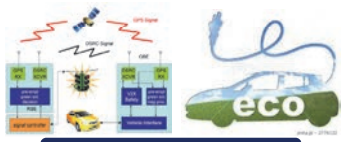
Smart Green Open Innovation Platform

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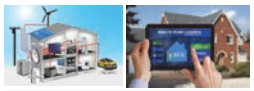
Smart Green Island Project Conceptual Mapping for BATAM



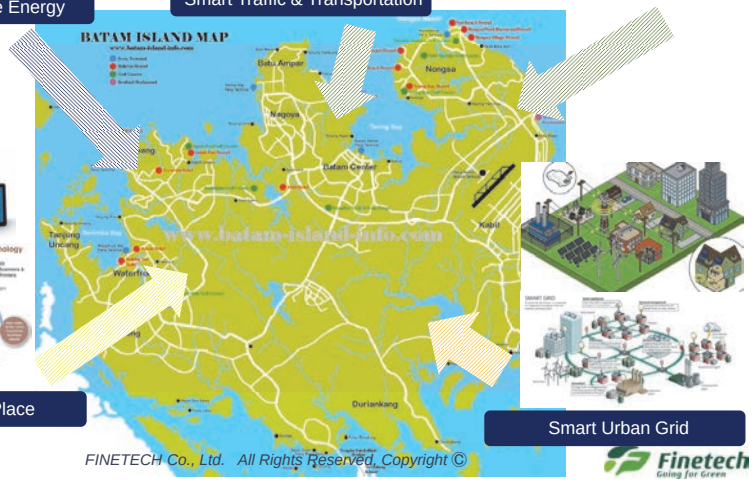
Smart Renewable Energy



Smart Traffic & Transportation



Smart Living Place





Smart Working Place

Smart Urban Grid

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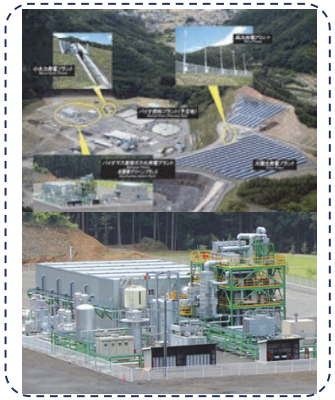
Finetech Going for Green

Smart Green Island Project : OFFICIAL SITE VISIT

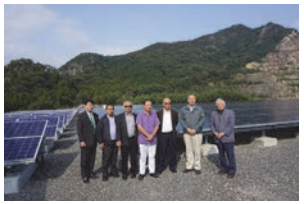
By *BATAM CITY Government / BIFZA / PT DESA AIR CARGO*

FINETECH received the BATAM Delegation at the "FINETECH's SMART GREEN PARK" on October 22, 2015

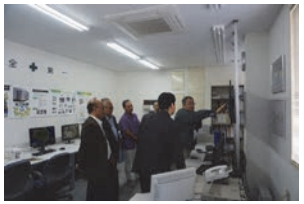




Smart Green Park







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Finetech Going for Green

Smart Green Park (Trademark of FINETECH)



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Finetech Going for Green

Key Findings of Three Opportunities for JCM

3 JCM Scheme Opportunities through the Survey in FY 2015



Key Opportunity #1 :

- **PV Solar Farm System with Advanced Energy Management System for Utilization of Energy Supply at the Industrial Zone**

planned site at PT DESA AIR CARGO



Key Opportunity # 2 :

- **Replacement for High Efficiency Equipment of Oil Sludge Treatment Process in the Waste Management Industry**

planned site at PT MEGA GREEN TECHNOLOGY



Key Opportunity # 3 :

- **Utilization of palm oil refinery process in which residue oil are extracted from spent bleaching earth in the Palm Oil Refinery Industry**

planned site at PT DESA AIR CARGO / PT Musim Mas

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Key Findings for Three Opportunities for JCM

3 JCM Scheme Opportunities through the Survey in FY 2015



Key Opportunity #1 : Application Submission for the Next JCM Financial Support Scheme

- PV Solar Farm System with Advanced Energy Management System for Utilization of Energy Supply at the Industrial Zone

planned site at PT DESA AIR CARGO



Key Opportunity # 2 : Approved under the JCM Feasibility Study for FY 2016

- Replacement for High Efficiency Equipment of Oil Sludge Treatment Process in the Waste Management Industry

planned site at PT MEGA GREEN TECHNOLOGY



Key Opportunity # 3 : Applied to the NEDO Scheme of Material Recycling for FY 2016

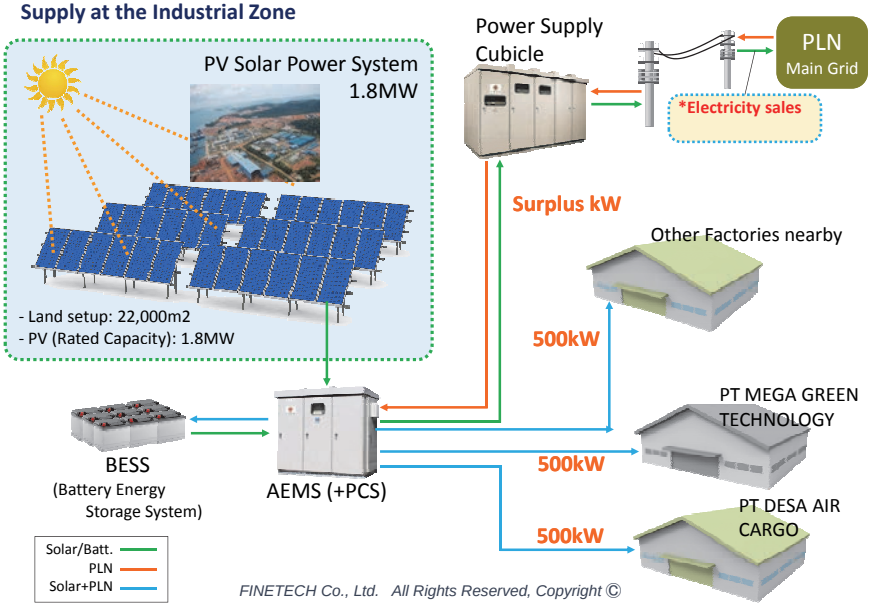
- Utilization of palm oil refinery process in which residue oil are extracted from spent bleaching earth in the Palm Oil Refinery Industry

planned site at PT DESA AIR CARGO / PT Musim Mas

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Key Opportunity #1 / Summary

- PV Solar Farm System with Advanced Energy Management System for Utilization of Energy Supply at the Industrial Zone



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Key Opportunity #3 / Summary

- Utilization of palm oil refinery process in which residue oil are extracted from spent bleaching earth in the Palm Oil Refinery Industry
  - Under the strict operation of B3 management, FINETECH will try to find out opportunities of Waste-to-Material Technology Implementation, focusing on Spent Bleaching Earth emitted from PT MUSIM MAS Palm Oil Refinery Factory,

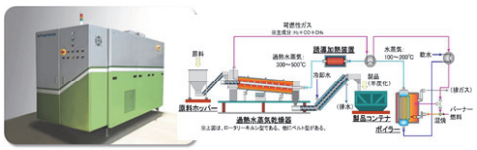
MUSIM MAS



Spent Bleaching Earth



  - Applying our technology of the "Super-heated Steam" to Spent Bleaching Earth with oil content of 36%, oil essences could be separated and recovered for re-usage as lubricating machine oil etc..

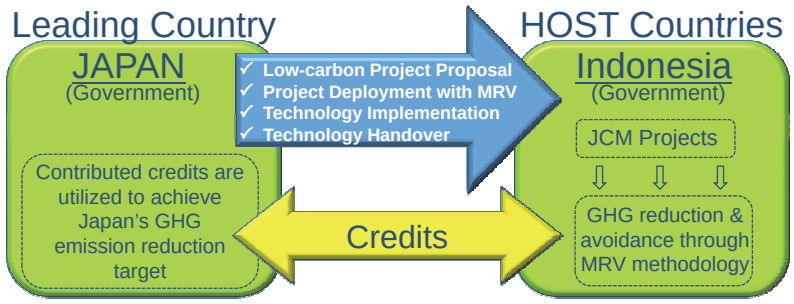


Waste Recovering Machine by Super-heated Technology



Recovered Oil (Image)

JCM Feasibility Study in Batam for FY2016 (FINETECH)



Finetech
Going for Green

< Key Opportunity #2 >

- Replacement for High Efficiency Equipment of Oil Sludge Treatment Process in the Waste Management Industry

PT. MEGA GREEN TECHNOLOGY

Oil Sludge Treatment Service Provider

Joint Initiative

JCM Supporting Platform

Center of JCM Mission

OPEN YOKOHAMA
横浜市 City of Yokohama
Y-PORT Yokohama Partnership of Resources and Technologies
BIFZA Batam Indonesia Free Zone Authority
NIPPON KOEI
IGES Institute for Global Environmental Strategies
Finetech Going for Green

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Survey Project Overview

➢ Objective of the Study

This study aims to conduct technical feasibility study to promote promising JCM projects in Batam-city, namely ***installation of high efficiency thermal desorption unit***, replacing the old rotary kiln system for the process of Oil Sludge Treatment.




➢ Project Location

The study is going to be conducted at facilities and factories of ***PT MEGA GREEN TECHNOLOGY.***




➢ Project Implementation Plan

Step1: Base-lining /Data Collection

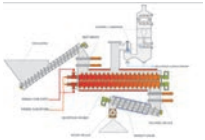
Step2: Design for Small-scale Pilot in JPN

Step3: Analyze / Pre-Proposal

Step4: Design for Deployment / Final Proposal

➢ Rough estimation of expected GHG emission reductions (unit: tCO2/year)

8,000 – 10,000tCO2/year
(to be surveyed and analyzed)



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FINETECH

Going for Green

the way we work…

www.finetech.co.jp



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Attachment02
Invitation to City of Yokohama & Kita-Kyusyu

City-to-City collaboration under the Joint Crediting Mechanism (JCM) Project

- Program in City of Yokohama and JCM workshop in Kita-Kyusyu -

■ Program

Date/ Time		Schedule
16th (Sun.)	22:45	Dep. from Singapore Airport
17th (Mon.)	06:45	Arrival at Haneda Airport
	08:30	Arrival at Navios Yokohama hotel.
	13:50	Meeting at the lobby of Navios Yokohama hotel ➢ To share outline of this invitation and the schedule in Yokohama city and Kita-Kyusyu.
	14:00	Site Visit: Minatomirai 21 for low carbon initiative and technologies in Yokohama City
	15:30	Meeting at Yokohama city hall, International Affairs Bureau
	16:30	Courtesy visit to a chief of the Bureau
18th (Tue.)	09:00	Dep. from Navios Yokohama hotel
	11:30	Site Visit: Smart Green Park (Finetech) ➢ Overview Presentation of the Park ・ Featuring Pesentation from FINETECH ➢ Site-visit in the Park Facilities ・ Mega Solar Power Generation Plant ・ Hydro Power Generation Plant Unit ・ Biogas Power Generation Plant ・ SCADA Monitoring & Controlling System ➢ Discussion and Q & A Session ➢ Recommendation for Next Steps
	13:30	Lunch at Smart Green Park
	15:00	Dep. from Smart Green Park
	19:30	Arrival at Navios Yokohama hotel
19th (Wed.)	08:30	Dep. from Navios Yokohama hotel
	09:30	Site Visit: Shiroyama Kogyo Co., Ltd.（iFORCOM） ➢ Introduction ➢ Shiroyama Industrial Co,Ltd: Company Introduction ➢ Energy measures: Ecopro21, Current Situation ➢ Factory tour: Epo Media Factory
	11:00	Dep. from Shiroyama Kogyo Co., Ltd.
	13:00	Arrival at Haneda Airport
	-----	Lunch at the airport

	15:30 17:10	Dep. from Haneda Airport Arrival at Kita-Kyusyu Airport
20th (Thu.)	9:00~17:00	JCM Workshop in Kitakyushu (1) Please see the attachment of the workshop schedule.
21st (Fri.)	9:00~17:00	JCM Workshop in Kitakyushu (2) Please see the attachment of the workshop schedule.
22nd (Sat.)	10:00 15:25	Dep. From Fukuoka Airport Arrival at Singapore Airport

Attachment03
COP22

ATTENDANCE TO INTERNATIONAL CONFERENCE
COP22

COP22 was held in Marrakech from 8th to 18th of November in 2016. The project for city to city collaboration between Batam city and Yokohama city was presented at Japan pavilion on 8th as one of the event of JCM seminar.



Japan pavilion at COP22



Panel discussion



Booth at Japan pavilion



PR by Yokohama city



COP22 venue



COP22 venie

Attachment04
Final seminar in Batam
(January 2017)

Final Seminar for City-to-City Collaboration under the JCM Project between Batam City and City of Yokohama

Overall Agenda:

Date	Time	Program	Venue
18 Jan (Wed)	AM	**Site tour**: Visit potential project sites in Batam by Japanese companies with technologies (Sewage, water recycling, desalination, LED streetlight with wifi, waste management (municipal solid waste and industrial waste), airport expansion)	Sites in Batam island
	PM		
19 Jan (Thu)	AM	**Final Seminar**	Harris hotel Batam center
	14:00	**Courtesy call** on Chairman of BIFZA	Offices of BIFZA and Batam City
	15:00	**Courtesy call** on Mayor of Batam City	

Detail agenda for Final Seminar on 19th January 2017

Time	Program	Speaker
8:40-9:00	Registration	---
9:00-9:05	Introduction of participants	Mr. Amir Rusli (MC)
9:05-9:15	Opening remarks	Dr. Ir. Purba Robert Sianipar (BIFZA)
9:15-9:25	Opening remarks	Batam city
9:25-9:45	Presentation on City to City Collaboration/City of Yokohama	Mr. Toru Hashimoto
9:45-9:55	Overall progress of the study/Nippon Koei	Mr. SAITO Tetsuya
9:55-10:15	Result of JCM project formulation study/ iFORCOM	Mr. Erwin Avianto
10:15-10:35	Result of JCM project formulation study/ Finetech	Mr. Motoyuki Okada Mr. Kikuo Sagawa
10:35-10:50	Tea break	---
10:50-11:00	Introduction of green technologies/ Hitachi, Ltd.	Mr. Katsumi Shida
11:00-11:10	Introduction of green technologies/ AGC Asahi Glass Co., Ltd.	Mr. LIM Yew Meng
11:10-11:20	Introduction of green technologies/ Kajima Corporation	Mr. Ryohei Tsukada
11:20-11:30	Explanation of relevant technologies of 3 or 4 companies (LED: Stanley Electric and Sodick LED, water leakage monitoring system: Suido Technical Service, IT: NEC)	Nippon Koei Co., Ltd
11:30-12:20	Panel session on Project Map - Introduction of RPJMD and green city program (Batam City) - Potential development projects (BIFZA) - Draft project map (Nippon Koei) - Contribution from City of Yokohama (City of Yokohama) Discussion	BIFZA Batam City City of Yokohama Nippon Koei iFORCOM Finetech
12:20-12:30	Implementation of JCM Project in Indonesia/ Indonesia JCM secretariat	Mr. Dicky Edwin Hindarto
12:30-12:35	Closing remarks	BIFZA
12:35-12:40	Closing remarks	Batam city
12:40-12:50	Way forward to Activities in 2016/ City of Yokohama	Mr. Toru Hashimoto
12:50-	Lunch	---

Developing JCM Projects Through the City-to-City Collaborations Under Y-PORT (Yokohama Partnership of Resources and Technologies)



Development Cooperation Division
International Affairs Bureau
City of Yokohama

COP 22 Japan Pavilion on 8th November 2016

Phot Source: Port and Harbor Bureau, the City of Yokohama

Contents

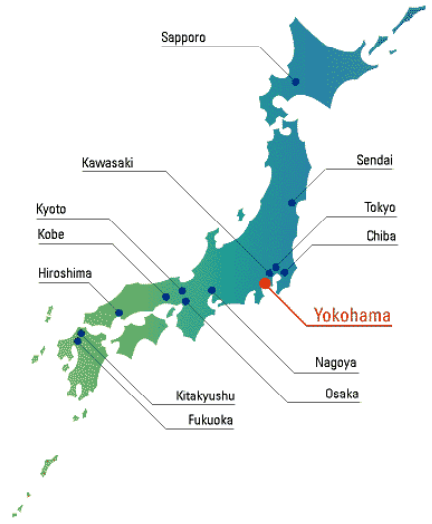
1. Introduction of Yokohama City and Its Development History

2. Challenges for Global Warming in Yokohama

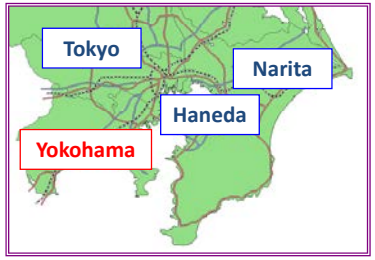
3. Our Efforts to Develop JCM Projects through City to City Collaboration (Y-PORT Project)

1. Introduction of Yokohama City and Its Development History

Overview of Yokohama City



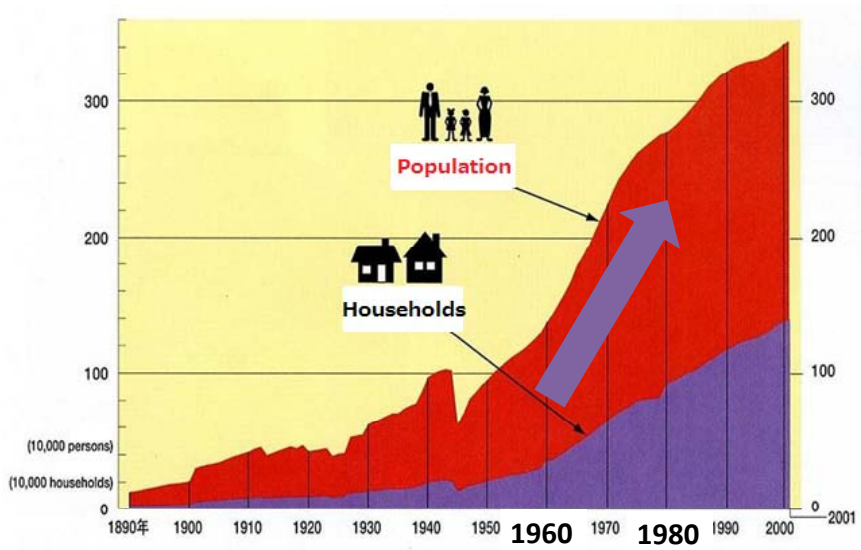
- International port city
  Opening of port of Yokohama in 1859
- Population: approx. 3.7 million
  Largest municipality in Japan
- GDP: approx. 12.7 trillion JPY
- Approx. 20 minutes from Haneda Airport (Tokyo)



History of Yokohama's Urban development



City of Yokohama faced rapid urbanization during 1960s to 80s



Due to Rapid Growth



Towards Sustainable City



External Recognition on Achievement by the City of Yokohama

LEE KUAN YEW WORLD CITY PRIZE

2014 SPECIAL MENTION: CITY OF YOKOHAMA



URBAN REDEVELOPMENT AUTHORITY SINGAPORE
CENTRE for LiveableCities SINGAPORE

WORLD CITIES SUMMIT

- The Lee Kuan Yew World City Prize is a biennial international award that honours outstanding achievements and contributions to the creation of liveable, vibrant and sustainable urban communities around the world.
- In 2014, Yokohama was selected for Special Mention, and will be awarded during the World Cities Summit in June.
- Yokohama was recognised for overcoming its urban challenges faced over the last 40 years through excellent partnership with its citizens and stakeholders. Also the Y-PORT programme was mentioned for its clever marriage of economic growth and international contribution by tying up with local businesses to export urban solutions to emerging cities.

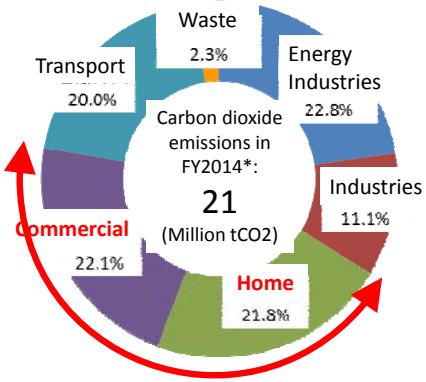
2. Challenges for Global Warming in Yokohama

Y-PORT CENTER
Yokohama Urban Smart Solution

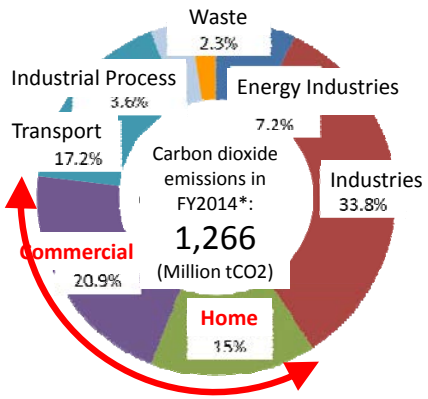
CO2 emission in Yokohama City

Yokohama city emitted CO2s more by household and commercial sector because of the largest population in Japan

In Yokohama City



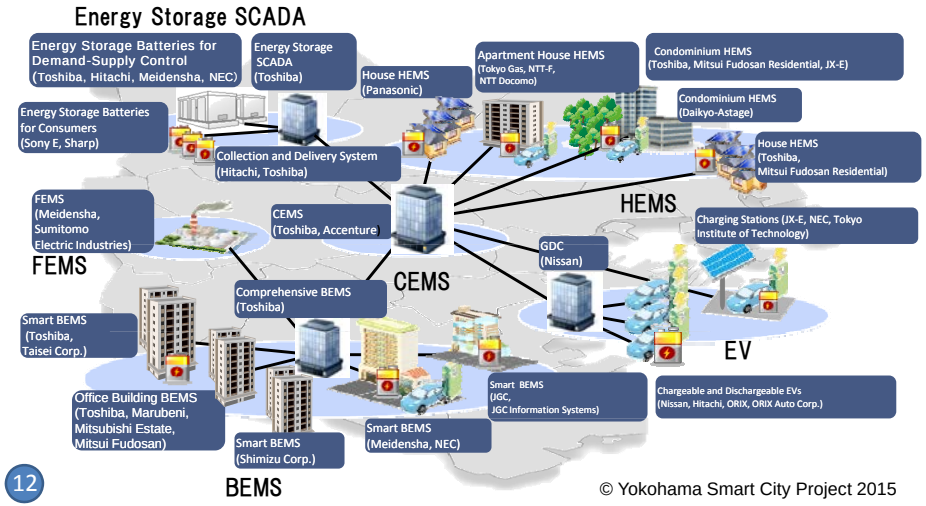
In Japan



*Carbon dioxide emission value in the graphs shows preliminary results in 2014

Yokohama Smart City Project (YSCP)

■ Results (To FY2013)／Targets（FY2010-FY2014）
HEMS(Home energy management system)(4,200/4,000) PV（37MW/27MW) EV（2,300/2,000）



© Yokohama Smart City Project 2015

Yokohama Smart Business Association (YSBA)

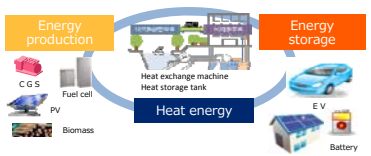
Yokohama Smart Business Association

<8 secretary members>

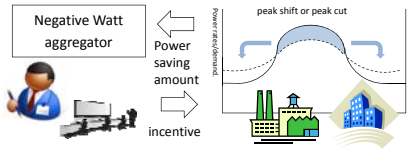
<8 general members>

Achievement of an "Energy - recycling City"

Promote local energy production for local consumption



Use BEMS to verify public facility demand response



Aiming for an Energy Recycling City

Main measures (5 pillars) of Energy Action Plan established in March 2015



- Development of energy management
- Use of renewable/unused energy
- Use of hydrogen
- Introduction of energy-saving technology
- Integration with urban development









3. Our Efforts to Develop JCM Projects through City to City Collaboration (Y-PORT Project)

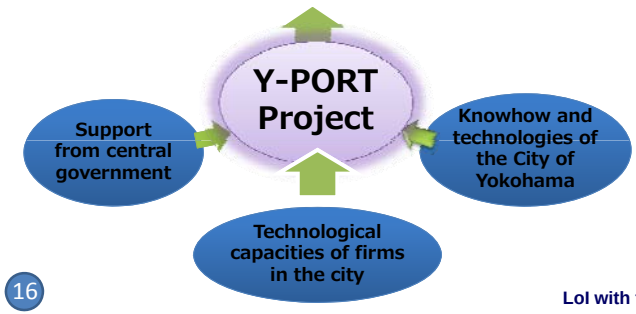
Y-PORT CENTER
Yokohama Urban Smart Solution

Yokohama' s International Development Cooperation – Y-PORT

Yokohama Partnership of Resources and Technologies

It is essential to provide not simple products but solutions through combining technologies and knowhow of ***the public and private sectors***

Enhancement of international technical cooperation





MOU with JICA



MOU with ADB



LoI with the City of Batam in May, 2015

Master Plans which the City of Yokohama has worked together with Four Cities under City-to-City collaboration

Bangkok, Thailand
- Bangkok Master Plan on Climate Change



JICA

- JICA Report
" Technical cooperation project on the Bangkok master plan on climate change 2013-2023 in the Kingdom of Thailand" (1)http://libopac.jica.go.jp/images/report/P1000025878.html (2)http://libopac.jica.go.jp/images/report/P1000025879.html

Da Nang City, Vietnam
- Da Nang Urban Development Forum (Making Urban Development Action Plan)



JICA

- JICA Report
" Data collection survey on sustainable and integrated urban development in Danang final report" http://libopac.jica.go.jp/images/report/P1000026544.html

Yokohama City

Cebu City, Philippines
- Mega Cebu Roadmap 2050



JICA

- JICA Report
"The Roadmap study for sustainable urban development in Metro Cebu final report "
http://libopac.jica.go.jp/images/report/P1000022002.html

Batam City, Indonesia
- Project Mapping (planned) based on Batam Green Cities Program



Under Implementation in JCM Study in JFY2016

JCM Projects as one of Schemes to Make the City's Plan and Prioritized Initiatives into Shape

Making Master Plans and Action Plan

Bangkok Master Plan on Climate Change 2013-2023



Capacity buildings through working together for city's plans

BMA — JICA — OECC — Yokohama — OPEN YOKOHAMA

Implementation with Private Sector



Project Implementation for Sustainable Urban Development

(JCM Finance)

Public/Business — Business

Flagship Projects by City to City Collaboration in Four Cities

Bangkok, Thailand



JCM 1,344*tCO_2/year

Rooftop solar power system and advanced EMS for power supply in Factory by Finetech CO. Ltd.

Da Nang City, Vietnam



JCM 1,145*tCO_2/year

Introduction of high efficiency pumps in the water purification plant by Yokohama Water Co., Ltd.

Yokohama City

Cebu City Philippines

JICA



Efficient dewatering process of septage sludge by Amcon INC.

JICA



Waste plastic recycling by Mansei Recycling Systems Co., Ltd.

Batam City, Indonesia

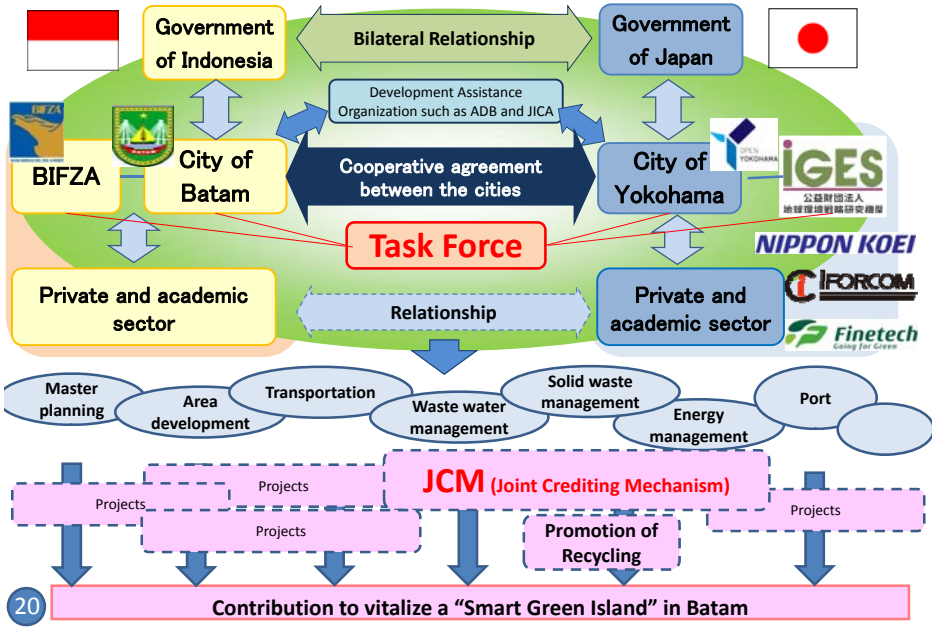


JCM 533*tCO_2/year

Energy Saving for Air-Conditioning Utility System in the airport terminal by iForcom Tokyo Co., Ltd.

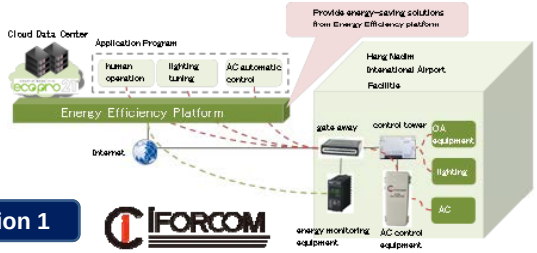
*Expected CO_2 Emission Reductions(tCO_2/year)

Framework of City-to-City Collaboration with Batam in this Year



Phase approaching by JCM in Batam City





Generation 1

IFORCOM

- **Energy-saving A/C System for the Airport terminal**

Preliminary approval by GEC/MOEJ with JCM Financial Support

Generation 2

- **Energy-saving at Ferry terminals**
- **Energy-saving at Hospitals**
- **Energy-saving at Hotels**

Feasibility studies are on going in JFY 2016

Aiming to spread benefit over whole of the City

- ***From Flagship Model Project to wide-range fields of projects***
- ***From "BtoG" to "BtoB" businesses***



Sharing best practices on smart urban solutions

JOIN the 5TH ASIA SMART CITY CONFERENCE on 16th-18th November in Yokohama, Japan

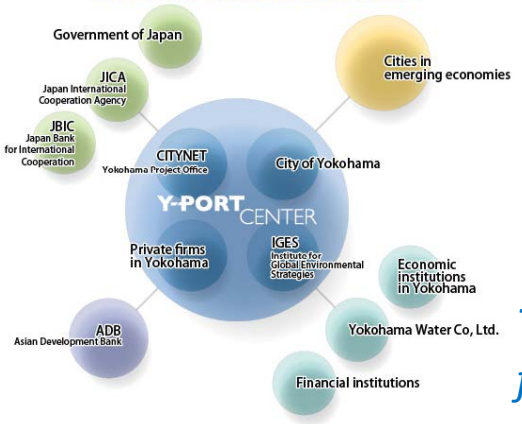


Y-PORT CENTER – Knowledge hub for smart city management

Please visit our web site:
http://www.city.yokohama.lg.jp/kokusai/yport/en/

Development Cooperation Division,
International Affairs Bureau
City of Yokohama, Japan
Email : ki-yport@city.yokohama.jp

Y-PORT CENTER
Yokohama Urban Smart Solution



Thank you for your attention

City-to-City Collaboration
Toward Smart and Green Island of Batam

Y-PORT CENTER
Yokohama Urban Smart Solution

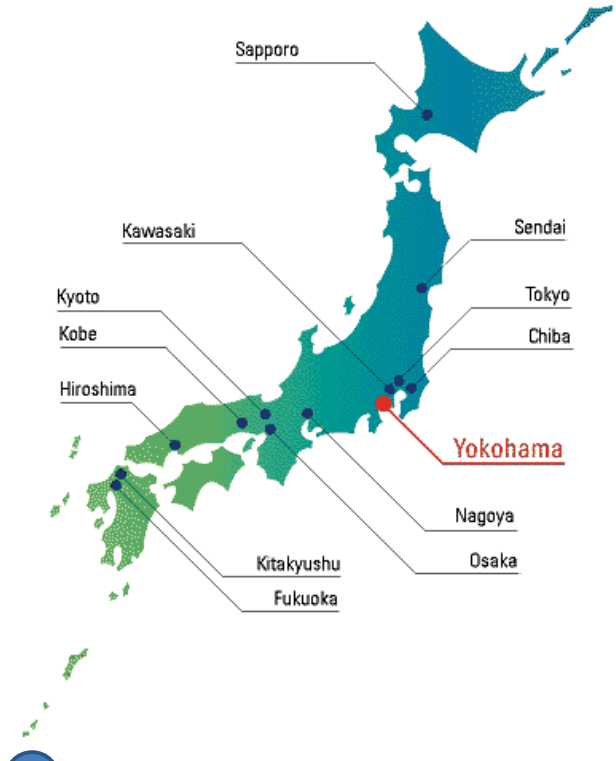


Development Cooperation Division, International Affairs Bureau
City of Yokohama

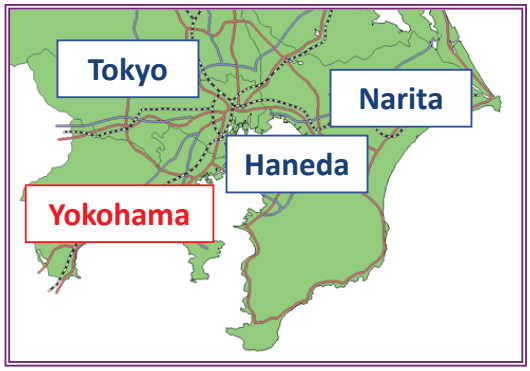
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Overview of Yokohama City

OPEN YOKOHAMA



- International port city
  Opening of port of Yokohama in 1859
- Population: approx. 3.7 million
  Largest city in Japan
- GDP: approx. 12.7 trillion JPY
  (approx. 107 billion USD)
- 21 minutes from Haneda Airport (Tokyo)



External Recognition on Achievement by the City of Yokohama

LEE KUAN YEW WORLD CITY PRIZE

2014 SPECIAL MENTION: CITY OF YOKOHAMA



URBAN REDEVELOPMENT AUTHORITY SINGAPORE

CENTRE for LiveableCities SINGAPORE

WORLD CITIES SUMMIT

Y-PORT CENTER
Yokohama Urban Smart Solution

The 5th Asia Smart City Conference Declaration - " Yokohama Declaration "-

For the past 5 years, the Asia Smart City Conference in Yokohama Japan, has been held with an aim to enhance city to city collaborations and partnerships among cities and related international institutions with the purpose of achieving smart and sustainable growth in Asia.

In the 5th Asia Smart City Conference, the participants concluded this "Yokohama Declaration" on Nov. 18, 2016.



5th Asia Smart City Conference "Yokohama Declaration"

For the past 5 years, the Asia Smart City Conference has been held with an aim to enhance city to city collaborations and partnerships among cities and related international institutions with the purpose of achieving smart and sustainable growth in Asia.

In order to reinforce the outcomes of the past four conferences and based on the spirit of the 1st and 4th Asia Smart City Conference Declarations, we have agreed upon the following:

1. At the 5th Asia Smart City Conference, over 40 cities, international institutions and specialized institutions came together, bringing various issues and expertise to the table, and held practical discussions aimed at realizing livable inclusive sustainable and resilient cities and communities. Specifically, opinions from various specialized and technical points of view were exchanged on the following four themes:

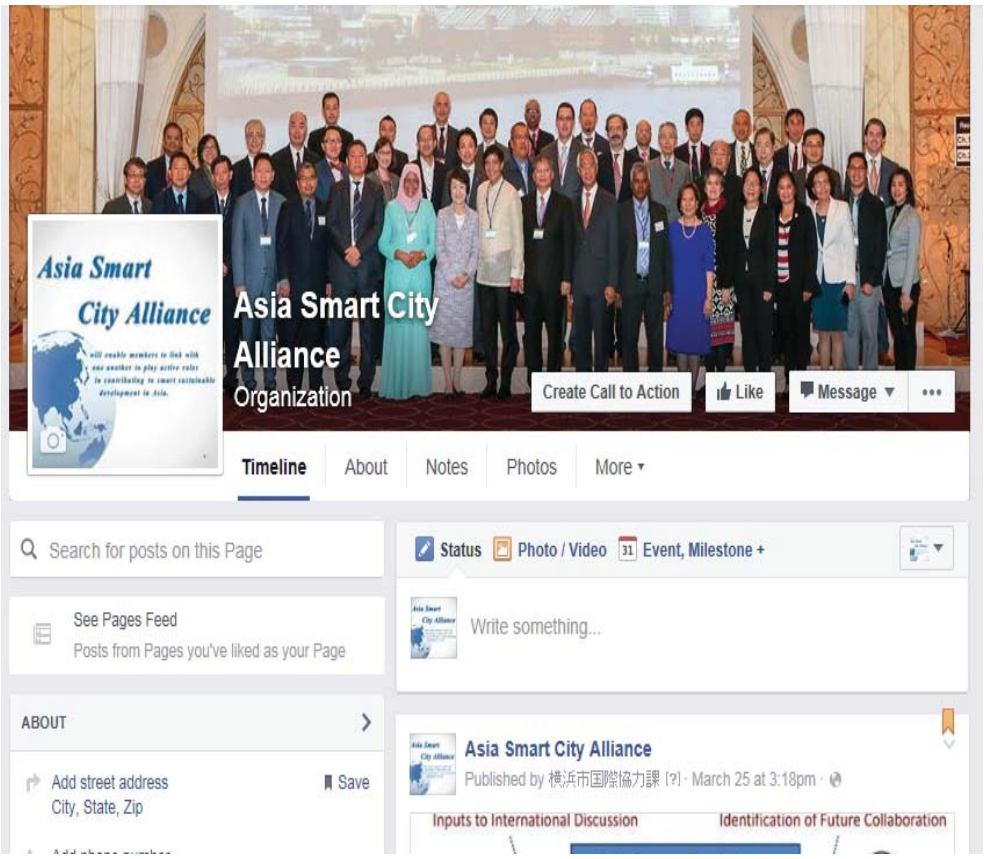
1) City to city cooperation towards sustainable urban development
2) Roles of city leaders to attract high quality involvement of private sector and co-create urban solutions through smart technologies
3) Mobilize further financing to achieve smart urban development
4) Effective modalities for knowledge sharing and capacity building towards smart urban development

2. The participants observed current international frameworks such as Sustainable Development Goals (SDGs), New Urban Agenda under HABITAT III, and the Paris Agreement under Conference of the Parties (COP21) that acknowledge key roles of sub-national and local governments. Participants reconfirmed that for each city to righteously evolve further, it is essential for each city leader to exhibit strong leadership, in cooperation with citizens and business entities, to ensure successful urban transformation through sustainable smart city management.

3. In the 4th Asia Smart City Conference, the cities and the other supporting agencies participated in the Conference declared to form the Asia Smart City Alliance (ASCA). The participants were pleased to observe that alliance enabled members to link with one another to play active roles in contributing to smart sustainable development in Asia. It was further agreed to enhance the knowledge sharing activities of ASCA.

4. We will report the content of this Yokohama declaration to Conference of the Parties 22 (COP22) which is being concluded in Marrakesh, Morocco today.

Networking through Asia Smart City Alliance(ASCA)

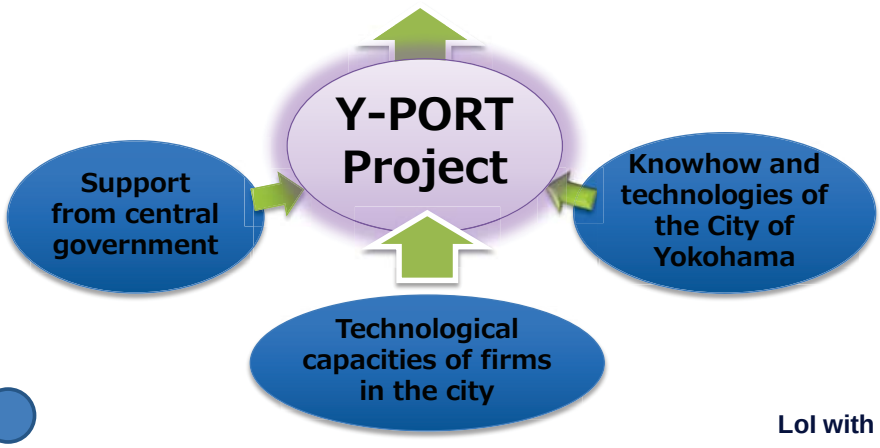


Yokohama' s International Development Cooperation – Y-PORT

Yokohama
Partnership of Resources and Technologies

It is essential to provide not simple products but solutions through combining technologies and knowhow of the public and private sectors

Enhancement of international technical cooperation





MOU with JICA



MOU with ADB



LoI with the City of Batam in May, 2015

Master Plans which the City of Yokohama has worked together with Four Cities under City-to-City collaboration

Bangkok, Thailand

- Bangkok Master Plan on Climate Change



JICA

- JICA Report

" Technical cooperation project on the Bangkok master plan on climate change 2013-2023 in the Kingdom of Thailand" (1)http://libopac.jica.go.jp/images/report/P1000025878.html (2)http://libopac.jica.go.jp/images/report/P1000025879.html

Da Nang City, Vietnam

- Da Nang Urban Development Forum (Making Urban Development Action Plan)



JICA

- JICA Report

" Data collection survey on sustainable and integrated urban development in Danang final report" http://libopac.jica.go.jp/images/report/P1000026544.html

Yokohama City

Cebu City, Philippines

- Mega Cebu Roadmap 2050





JICA

- JICA Report

"The Roadmap study for sustainable urban development in Metro Cebu final report " http://libopac.jica.go.jp/images/report/P1000022002.html

Batam City, Indonesia

- Project Mapping (planned) based on Batam Green Cities Program





Under Implementation in JCM Study in JFY2016

Flagship Projects by City to City Collaboration in Four Cities

Bangkok, Thailand



JCM 1,344*tCO2/year

Rooftop solar power system and advanced EMS for power supply in Factory by Finetech CO. Ltd.

Da Nang City, Vietnam



JCM 1,145*tCO2/year

Introduction of high efficiency pumps in the water purification plant by Yokohama Water Co., Ltd.

Yokohama City

Cebu City Philippines

JICA



Efficient dewatering process of septage sludge by Amcon INC.

JICA



Waste plastic recycling by Mansei Recycling Systems Co., Ltd.

Batam City, Indonesia



JCM 533*tCO2/year

Energy Saving for Air-Conditioning Utility System in the airport terminal by iForcom Tokyo Co., Ltd.

*Expected CO_2 Emission Reductions(tCO_2/year)

City to City Collaboration in Batam

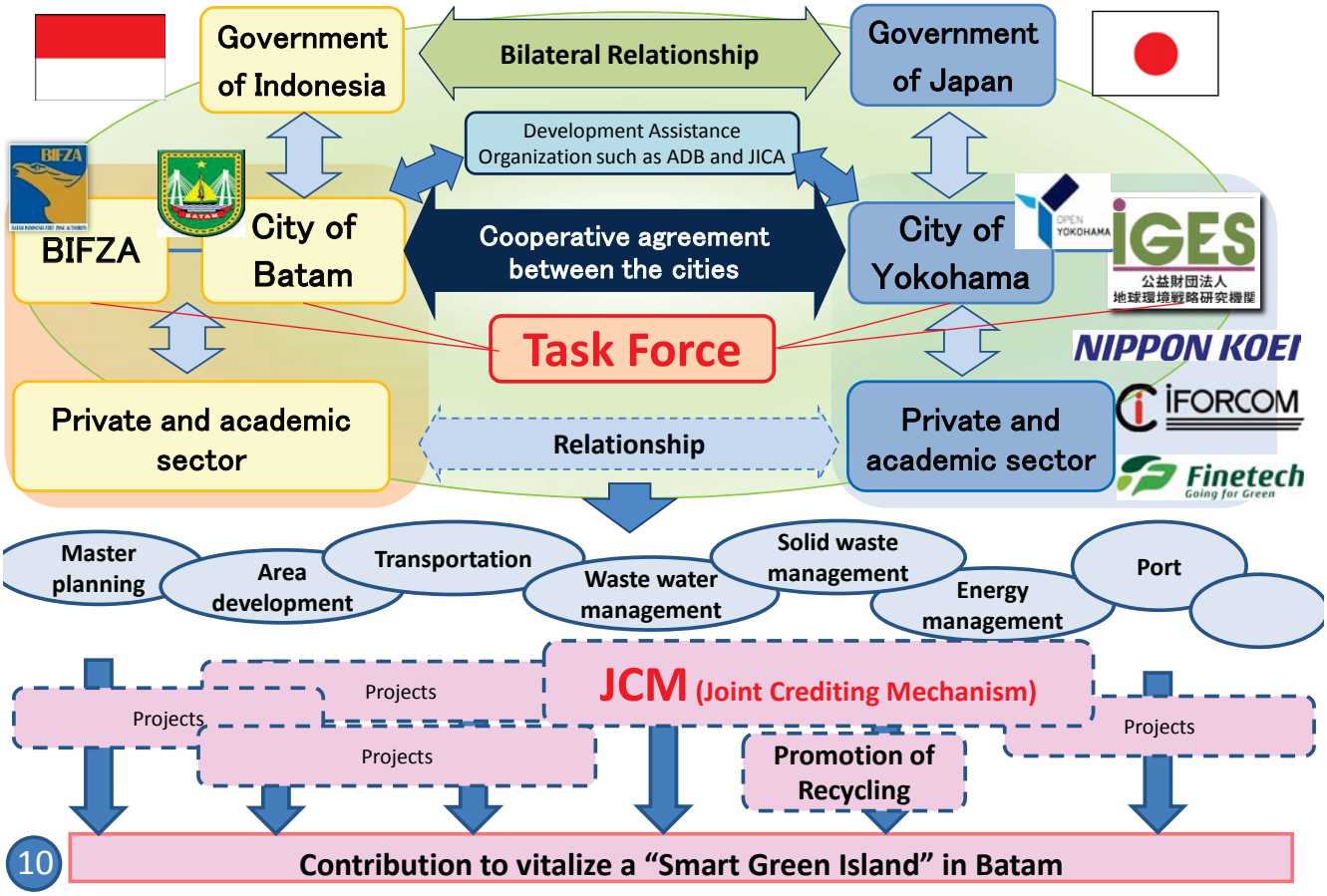
Letter of Intent on Technical Cooperation for Sustainable Urban Development Signed with the City of Batam, on 27th May, 2015.



Contents of Agreement

1. The City of Yokohama will offer technical advice in promoting the eco-city development of the City of Batam.
2. **The Parties will encourage participation of the private sector and academic organizations.**
3. The Parties will take action to obtain cooperation of the governments of both countries and international organizations.
4. The Parties will mutually provide information essential to implementing the above collaboration effectively..

Framework of City-to-City Collaboration with Batam in this Year



JCM Study in JFY2016





JCM Study Mission in July (Courtesy meetings)

JCM Study Mission in July 2016
Establishment of Task Force



JCM Study Mission in July (Kickoff workshop)

Task Force for the city-to-city collaboration between Batam and Yokohama

BIFZA	Deputy Chairman of Other Business Facilities
	Directorate of Promotion and Public Relations
	Bureau of Program Planning and Research & Development
City of Batam	Environment and Waste Management Agency
	Development Planning Board
	MSW Management Project
City of Yokohama (Y-PORT Center)	Development Cooperation Department, International Cooperation Bureau
IGES (Y-PORT Center)	Climate and Energy Area

Secretariat for the Task Force in FY 2016; Nippon Koei Co., Ltd.

Relevant Activities under City to City Collaboration



JCM workshop organized by the Ministry of the Environment, Japan (MOEJ) in October 2016 in Kitakyushu city

Relevant Activities in JFY 2016

- JCM workshop organized by the Ministry of the Environment, Japan (MOEJ) in October 2016 in Kitakyushu city
- COP 22 in Marrakesh Japan Pavilion
- BIFZA Investment Promotion Seminar in Yokohama, November
- JCM workshop organized by the Ministry of the Environment, Japan (MOEJ) on January 23 2017 in Tokyo



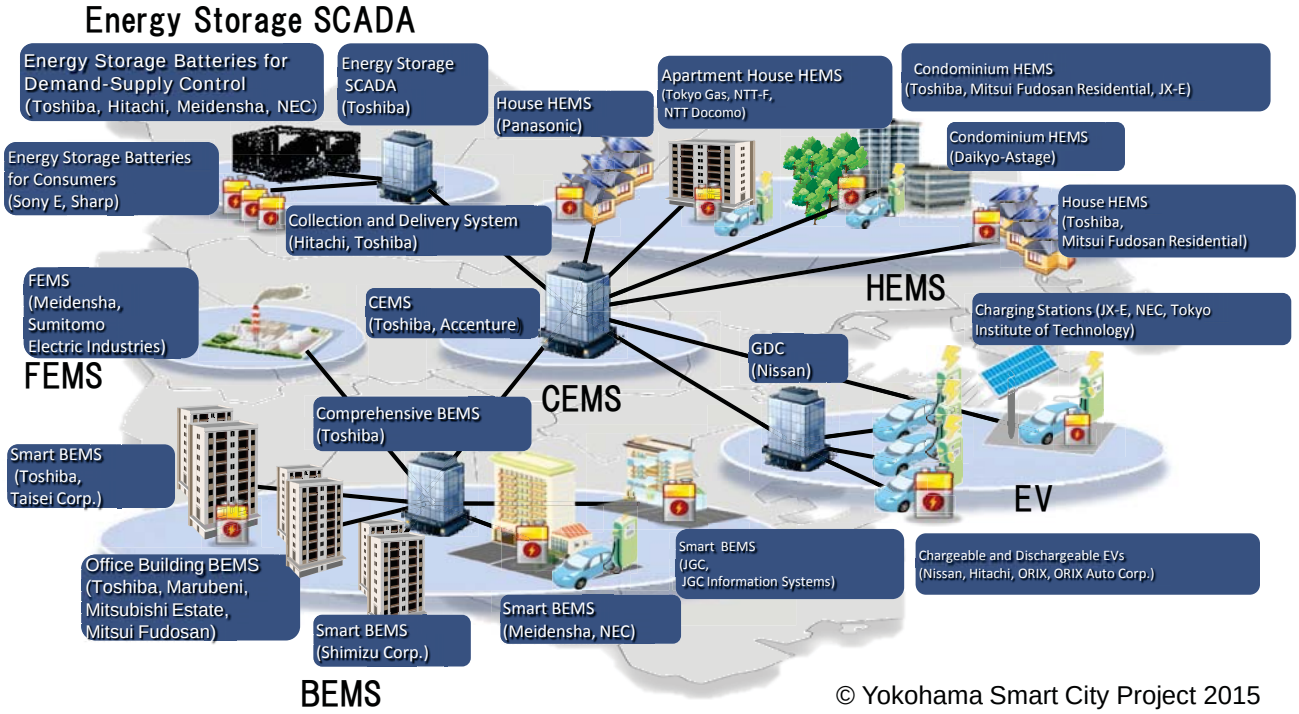
Presentation on CtoC Collaboration between Batam and Yokohama at COP 22 in Marrakesh on 8 Nov



Batam Invest Seminar in Yokohama on Nov 15 Deputy Chairman Mr. Gusmardi Bustami

Make our collaboration next stage (1)

■ **Yokohama Smart City Project (YSCP)**
■ Results (To FY2013)／Targets（FY2010-FY2014）
HEMS(Home energy management system)(4,200/4,000) PV（37MW/27MW) EV（2,300/2,000）



© Yokohama Smart City Project 2015

Make our collaboration next stage (2)

Main measures (5 pillars) of Energy Action Plan in Yokohama aiming an Energy Recycling City



Development of energy management



Use of renewable/unused energy



Use of hydrogen



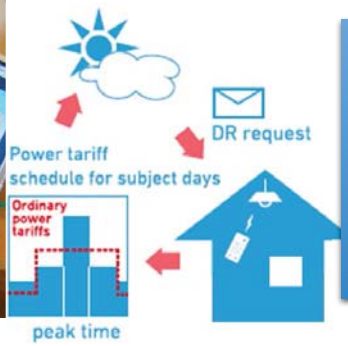
Introduction of energy-saving technology



Integration with urban development

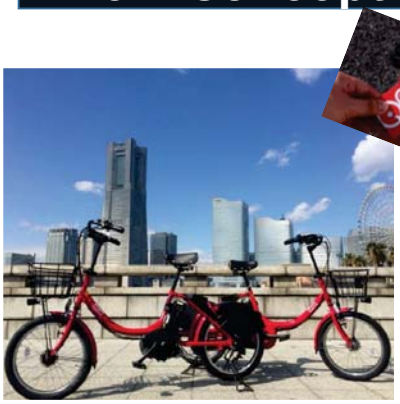
HEMS – Home Energy Management System





Achievement of a maximum peak cut of *15.2%* during peak hours

New Concept Mobility



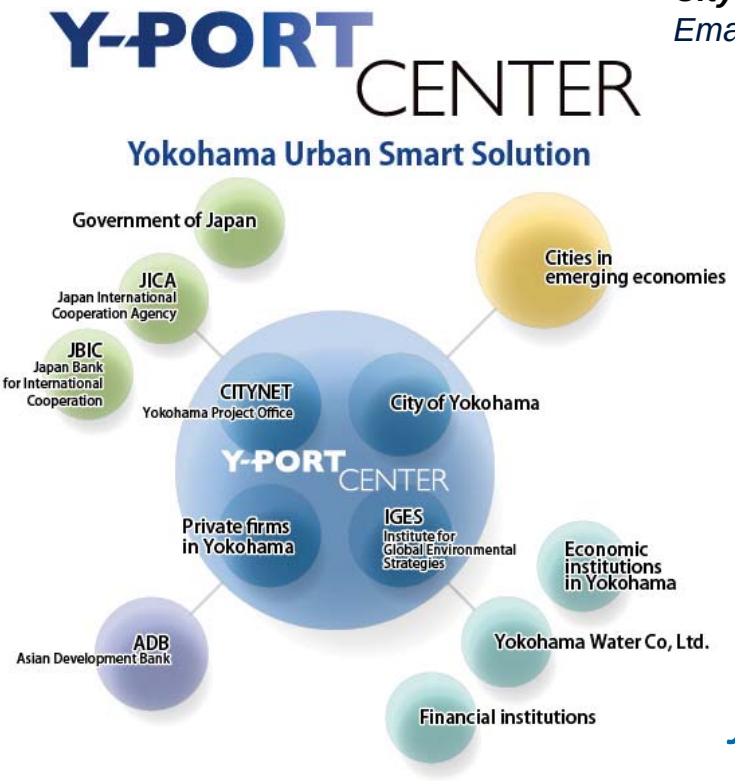




Y-PORT CENTER – Knowledge hub for smart city management

Please visit our web site:
http://www.city.yokohama.lg.jp/kokusai/yport/en/

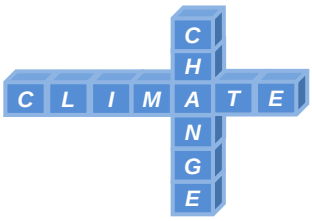
Development Cooperation Division,
International Affairs Bureau
City of Yokohama, Japan
Email : ki-yport@city.yokohama.jp



Y-PORT CENTER
Yokohama Urban Smart Solution

Thank you
for your attention

NIPPON KOEI



Overall Progress of the Study

Project for Development JCM Projects under City-to-City Collaboration between Batam city and Yokohama city

January 19, 2017

SAITo Tetsuya
Nippon Koei Co., Ltd.

Objectives: city-to-city collaboration

- Our project aims to
  - promote of JCM project formulation and
  - support on Green City Programme in Batam

through city-to-city collaboration activities.

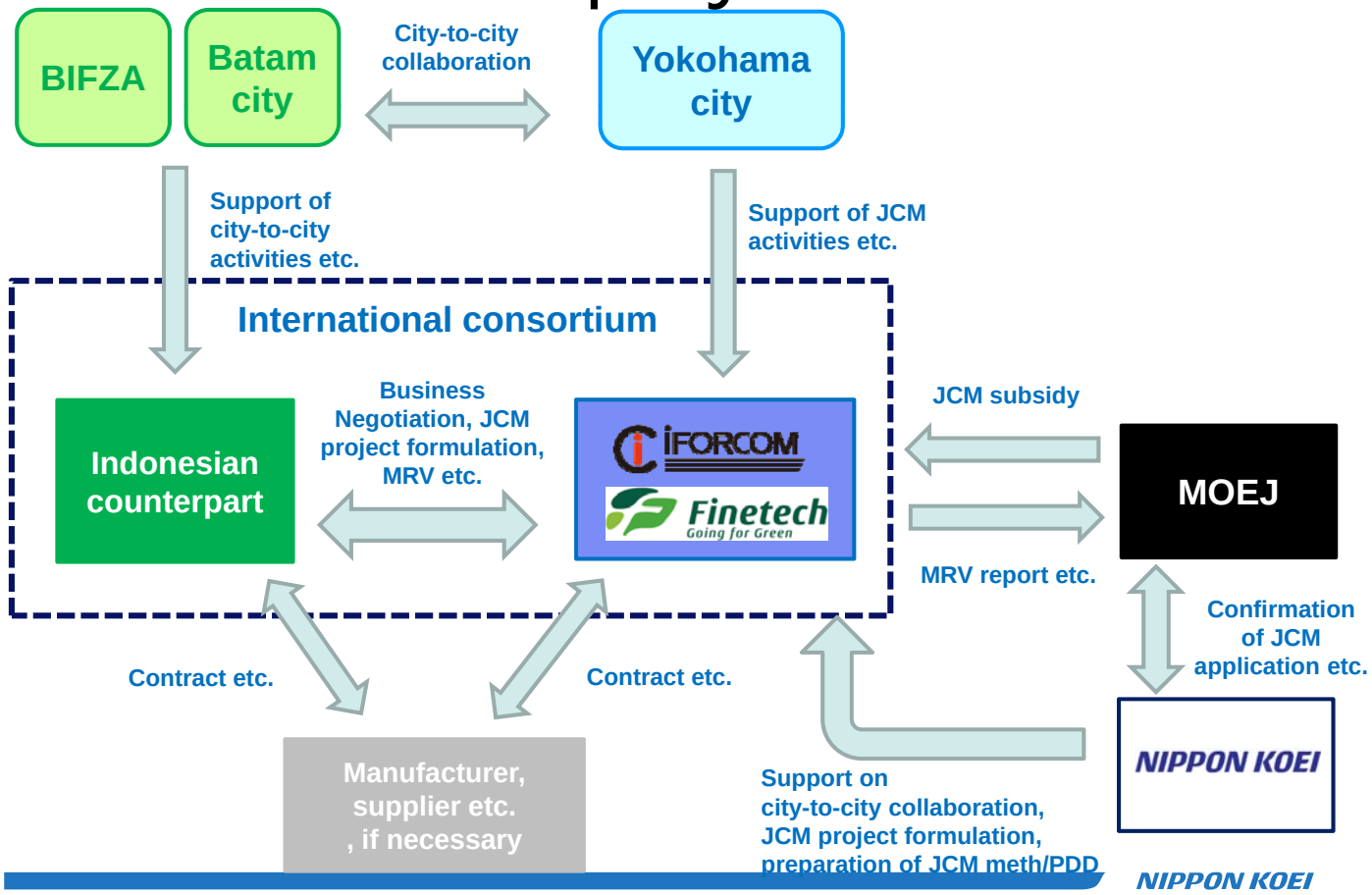
Advanced green (low carbon) products /technologies from Japanese entities

+

Sharing JCM experience and know-how

Supporting the Green City Programme in Batam , in order to solve the current/urgent issues

Structure of the project



Targets of the project

- F/S on Energy Saving Solutions
  - Ferry terminals
  - Hospitals
  - Harris hotels
- F/S on High Efficiency Thermal Desorption Units
  - PT MEGA GREEN TECHNOLOGY
- Development of Project Map

Progress of the project

ToR Items	Progress
1 : JCM project formulation	
1) Confirmation of current situation	Done
2) Check JCM applicability	Done
3) Prepare JCM documents for subsidy application	Undergoing, complete by April 2017
2 : Support on prj. Mapping	
1) Confirmation of current situation	Done
2) Prj. matching to existing financial scheme	Done
3) Support on future prj. formulation	Undergoing, complete by March 2017
3 : Reporting	March 2017
4 : Workshop etc.	Twice: Done
5 : Invitation to Japan etc.	Twice (one in Next week)

Major events (*including plans*)

Month	Progress
Jul, 2016	Kick-off meeting in Batam
Aug, 2016	Establishment of Taskforce for City-to-City Collaboration
Oct, 2016	Site tour in Japan City-to-City Collaboration Seminar in Kitakyusyu
Nov, 2016	COP22 in Morocco Batam Investment Seminar in Yokohama
Dec, 2016	Study on Project Map
Jan, 2017	Final seminar in Batam *City-to-City Collaboration Seminar in Tokyo*
Feb, 2017	*Finalization of project map (1st version) and F/S plan*
Mar, 2017	*Reporting* *Application for F/S 2017*
Apr-May, 2017	*Application for Model Project 2017*

- Each F/S was conducted in parallel with these events

Project Map

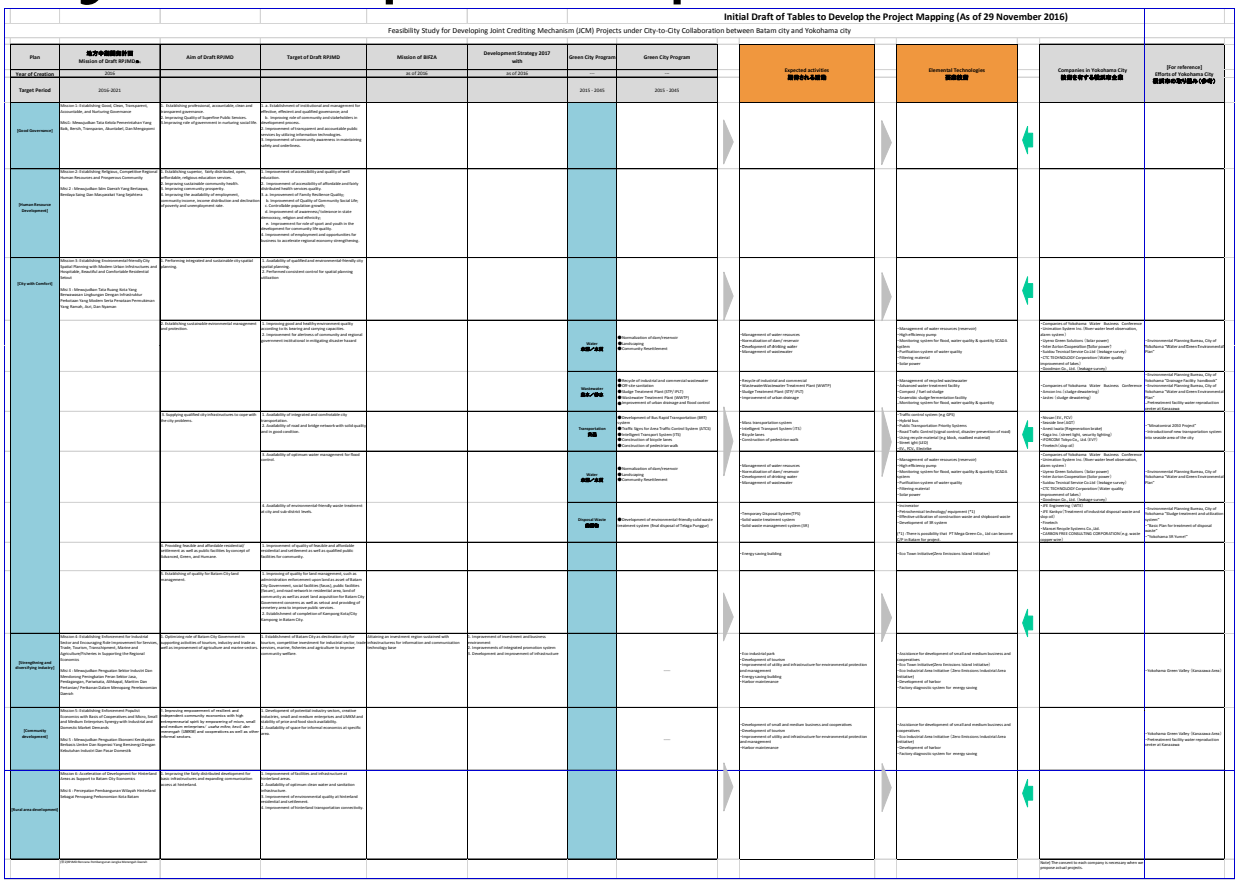
- A Tool to build mutual understanding on the direction of city-to-city collaboration between Batam and Yokohama
  - Needs of Batam towards green city
  - Green technologies and partners of Yokohama
- A tool enabling to invite outside support more smoothly, such as from Government of Japan (MoE, METI, JICA, etc.), Government of Indonesia (APBN, etc.), development banks and private investors

Project Map(Example)



- Draft RPJMD
- Green city program
- BIFZA's development strategy
- BIFZA's forthcoming project list

Project Map(Example)

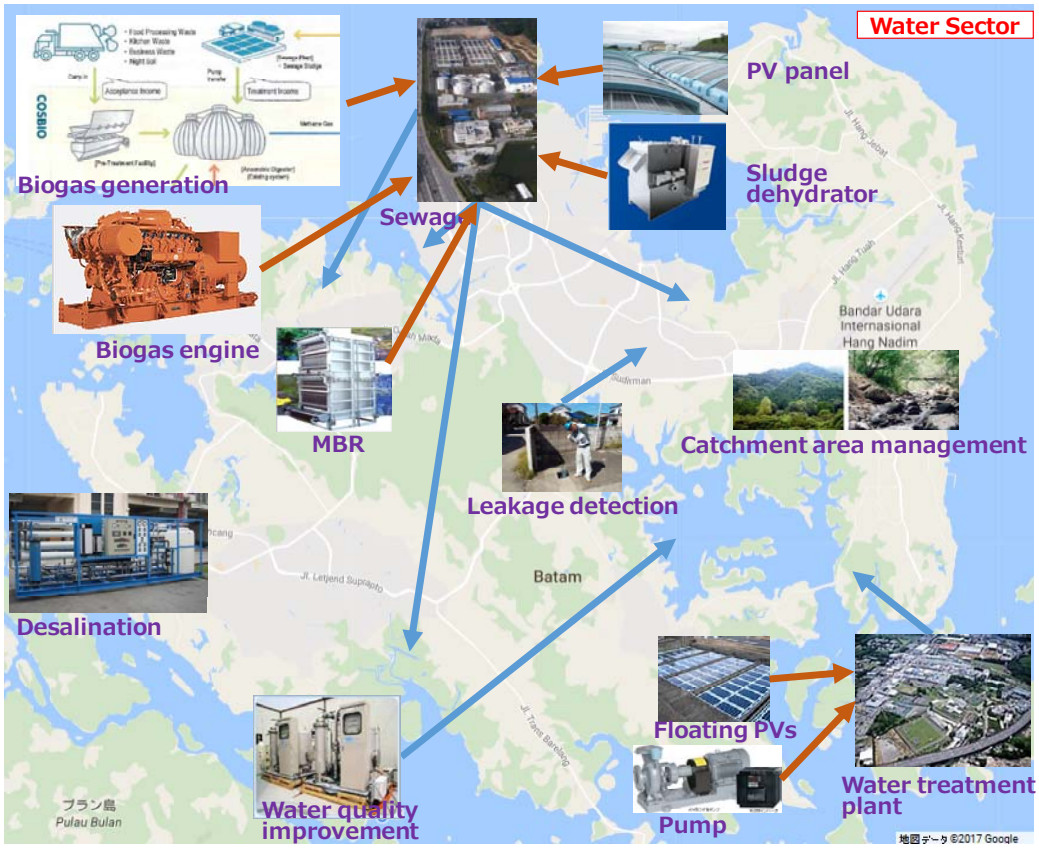


Project Map(Example)

ISSUEs in Batam → NEEDs in Batam → Technology and Experience in Yokohama → Potential scheme to realize the project

Sector	Issues	Technology
Water Resource	Water quality management in reservoir	Aeration Ozone treatment
	Desalination	MBR / etc
	Water recycling	MBR / etc
	Watershed conservation	Forest management with local people
Water purification	Water treatment plant	MBR / etc
Water distribution	Energy saving	High efficiency pumps
	Non revenue water	Leakage detection
Wastewater treatment	Capacity	Treatment plant (on-site/off-site)
	Energy	Biogas utilization
		Sludge treatment
Renewable energy	Energy consumption	PV / micro hydro

Project Map(Example)



PRESENTATION

JCM project formulation study

～Energy Saving～

Agenda

① Profile Company

1.1 Energy Saving

1.2 Track Record

② JCM Facility Subsidy Project

2.1 Generation 1

2.2 Generation 2 (Where we are)

③ Where we are

3.1 Ferry Terminal

3.2 Hospital

3.3 Hotel

④ Schedule

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① Company Profile

Company name	iFORCOM Co.,Ltd.
Address	Kagawa building, 1326 Nakano, Midori-ku, Sagamihara-shi, Kanagawa 252-0157
Telephone	+81-42-784-5700
Fax	+81-42-784-5540
Establishment	October 1985
Representative	Hiroshi Kagawa (Representative director)
Capital	¥100,000,000
Employees	350 persons (group whole)

Bank	Seibu Shinkin Bank・Bank of Yokohama・Yachiyo Bank・Shoko Chukin Bank・Bank of Tokyo-Mitsubishi UFJ
Certification	ISO / IEC 27001:2005 (Information Security Management) ISO 9001:2008 (Quality Management) ISO 14001:2004 (Environmental Management)

Japan :

iFORCOM Co.,Ltd	(Sagamihara)
iFORCOM Tokyo Co.,Ltd	(Sapporo, Hirosaki, Morioka, Sendai, Yokohama, Sagamihara, Akasaka, Nagoya, Osaka, Fukuoka)
iFORCOM Smart Ecology Co.,Ltd	(Sagamihara, Akasaka)

ASEAN :

Representative office in Indonesia	(Jakarta)
Representative office in Philippines	(Manila)



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1.1 Energy Saving ～ History ～

2012 Electricity prices soaring
→Start power-saving consulting
【ECO-PRO Ver.4 】

2011 Great East Japan Earthquake

2010 More than 2000 agreement

2004 Conclusion of the Kyoto Protocol
→Start operational improvement consulting
→Visualization of electricity consumption with the CO2 reduction goal
【ECO-PRO Ver.1】

2003 More than 1000 agreement

1996 Electric industry law revision →Start contract improvement consulting

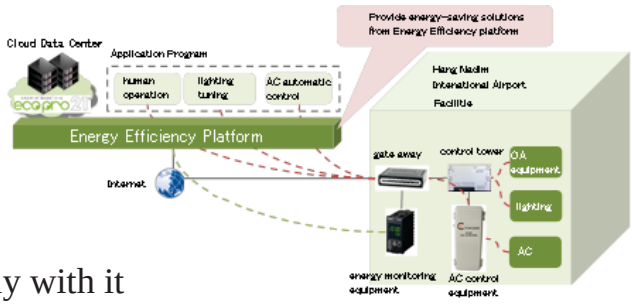
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Energy Saving Operation System

Business to build the best energy-saving promotion platform in response to user needs, we have track records to introduce more than 2500 facilities in Japan, then have developed in the office building, factory and mall in Indonesia.

Specifically, by utilizing the following, it is possible to construct verified optimum energy saving promotion platform at airports.

1. Know-how of the rule of "Energy efficiency improvement due to human operation (AC, OA equipment, etc.)"
2. Design know-how of the incentive scheme based on behavioral science in order to comply with it
3. Know-how to apply the "automatic control by utilizing information technology (active automatic control of AC)."



Customer in Indonesia

住友商事 Polymatech カネパッケージ株式会社 KANEPACKAGE CO.,LTD.

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We offer the following solution for the electricity usage reduction.

①Installation of the monitoring system

We will set up equipment to monitor the electricity usage.

②Operational improvement on electricity usage

Check the usage of existing facilities, and by optimizing the operation method to reduce power consumption and achieve energy saving, saving CO2.

- Investigation in detail for the usage of office equipment, air conditioning (air conditioning related such as chiller, air handling units)
- Research and analysis for the optimal use development
- Rules formulated on how to use, documenting

③Inverter control of the chiller pump

It established the inverter to the pump (motor) that comes with the chiller, to control the output (number of revolutions). Check the operational status, if possible, it can also be carried schedule operation.

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1.2 Track Record

Japan









Overseas



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② JCM Facility Subsidy Project



Generation 1

- Energy-saving A/C System Project, supporting Eco-Airport Plan

Generation 2 ← Where we are



- Energy-saving Ferry terminal Project
- Energy-saving Hospital Project
- Energy-saving Hotel Project





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③ Where we are ～Approaching Project ～

Energy-saving Ferry Terminal Project

1.Ferry Terminal Sekupang
2.Ferry Terminal Batam Center
3.Ferry Terminal Telaga Punggur
4.Ferry Terminal Harbour Bay
5.Ferry Terminal Marina City
6.Ferry Terminal Nongsa

Energy-saving Hospital Project

1.Rumah Sakit Otorita Batam
2.RS Awal Bros
3.RS Budi Kemuliaan
4.RS Harapan Bunda
5.RS BP Kawasan Batam
6.RS St. Elisabeth
7.RSUD Embung Fatimah Kota Batam
8.Casa Medical Centre

Energy-saving Hotel Project

Batam:
1.Batam Center
2.Waterfront

Jakarta:
3.Tebet
4.Kelapa Gading
5.FX Sudirman

Bekasi:
6.Bekasi

Bogor:
7.Sentul City

Bandung:
8.Festival Citylink
9.Ciumbuleuit

Malang:
10.Riverside

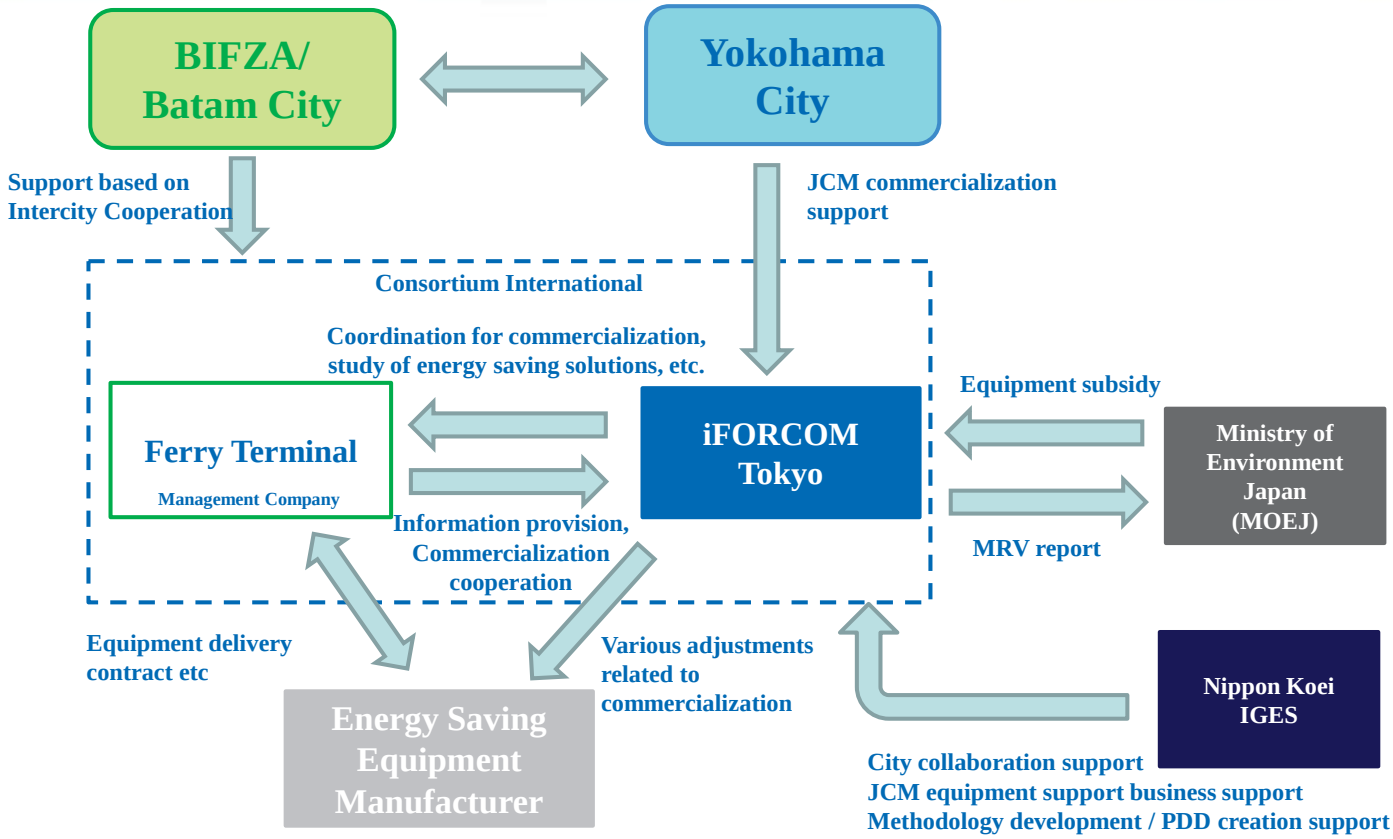
Surabaya:
11.Gubeng

Harris Hotel

Bali:
12.Tuban
13.Kuta Beach
14.Riverview Kuta
15.Sunset Road
16.Raya Kuta
17.Seminyak
18.Kuta Galleria
19.Denpasar

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3.1 Ferry Terminal Project ～ Scheme ～



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3.1 Ferry Terminal Project ～ Survey Progress and Plan ～

No	Issues to be solved in the survey	Current progress	Responsible person	Counter party	Future plans
1	Detailed design related to energy saving solution introduction and economic effect calculation.	Discovery study: 100% Environment survey and equipment survey: 100%	iFORCOM Tokyo	BIFZA	Get data
2	Formulation of monitoring plan	Powered equipment survey: 100% place	iFORCOM Tokyo, Nippon Koei	BIFZA	Formulation of monitoring plan
3	Confirmation of order placement / contract procedure by the local business operator as the project is implemented	Confirmation of settlement route (done) Check budget schedule (done) Contractor (Under consideration (2 companies))	iFORCOM Tokyo	BIFZA	Proposal presentation
4	Detailed condition adjustment within the consortium for equipment auxiliary project application	Adjustment of consortium with management company (private)	iFORCOM Tokyo, Nippon Koei	BIFZA	Conclusion of Consortium Agreement with Management Company (Private)
5	Estimate of energy saving solution horizontally in Indonesia	Under study target	iFORCOM Tokyo, Yokohama City, Nippon Koei	BIFZA, Batam City	Under study target
6	Confirmation of external ordering / contract procedure to facilities / equipment makers etc. related to project implementation	Confirm whether to execute control overseas, Confirm control method	iFORCOM Tokyo	Equipment manufacturer	Export involvement survey Contract related
7	Match the JCM project with the master plan of BIFZA / Batam City (Activities that take advantage of the benefits of inter-city collaboration research)	Collection of the Batam city medium-term development plan (2016-2020) and start of the translation Discussion with BIFZA & Batam City on the result of organizing the master plan Update project mapping plan	Yokohama City, Nippon Koei, iFORCOM Tokyo	BIFZA, Batam City	Arrangement of master plan based on consultation result Confirmation of companies in Yokohama linked to master plan Publish draft project map at seminar Completion of project map (Ver1)

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3.1 Ferry Terminal Project ～ Survey target facilities～

No	Survey target facilities	Field survey	Monthly power consumption	Obtaining equipment data	Prospect of JCM implementation	Remarks
1	Ferry Terminal Sekupang	July 19	1,440 MWh	Already	○	Implementation request
2	Ferry Terminal Batam Center	July 20	2,634 MWh	Not yet	○	Implementation request as B to B
3	Ferry Terminal Telaga Punggur	July 21	Not yet acquired	Not yet	×	Small scale ⇒ Low power consumption
4	Ferry Terminal Harbour Bay	August 16	Not yet acquired	Not yet	×	Implementation request, but rebuilding
5	Ferry Terminal Marina City	August 20	Not yet acquired	Not yet	×	Small scale ⇒ Low power consumption
6	Ferry Terminal Nongsa	July 21	307 MWh	Already	×	Investment recovery difficulty (But, implementation request)
7	Rumah Sakit Otorita Batam (Hospital)	May 26	Not yet acquired	Not yet	×	Postpone according to bidding requirement

Ferry Terminal Sekupang





Ferry Terminal Nongsa



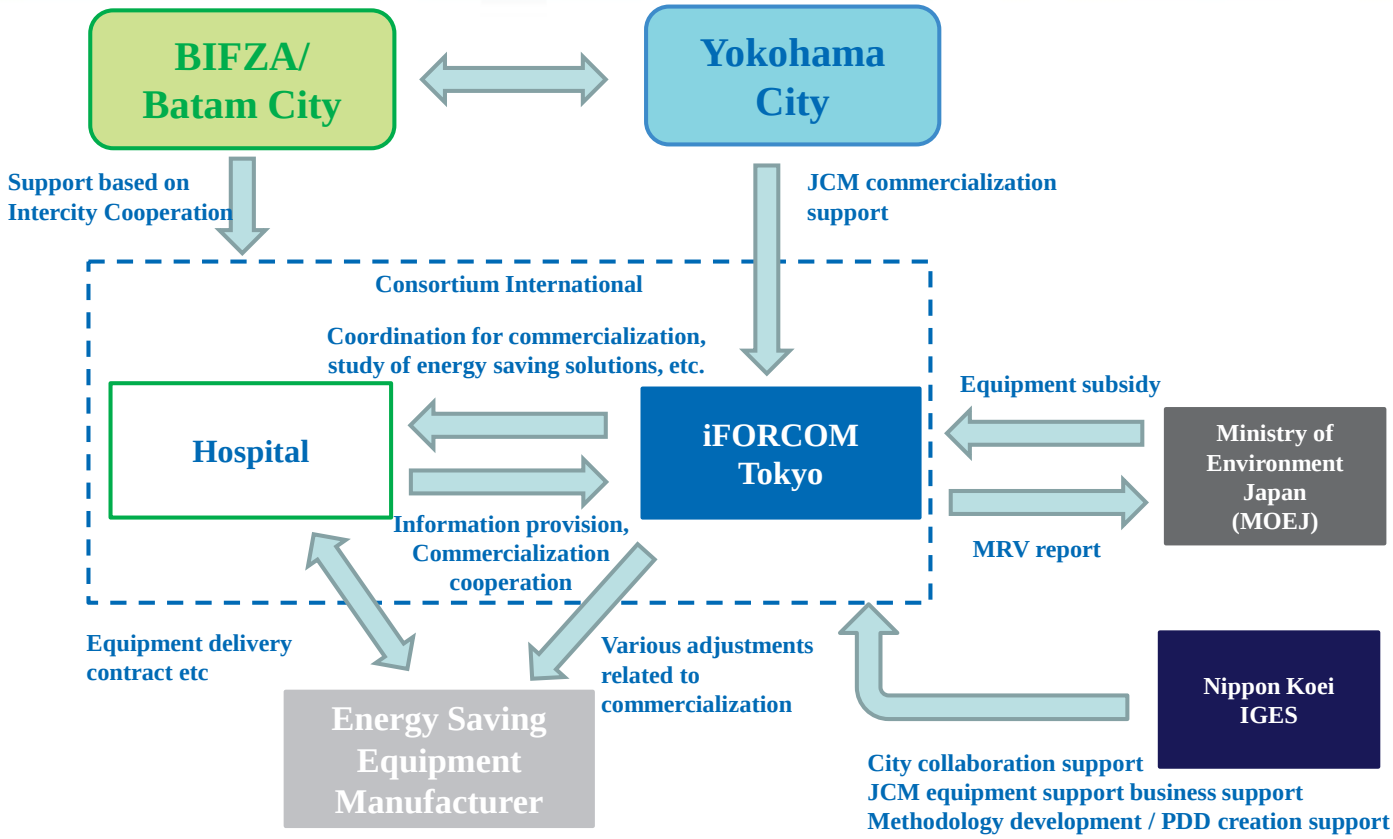




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3.2 Hospital Project

～ Scheme ～



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3.2 Hospital Project

～ Survey Progress and Plan ～

No	Issues to be solved in the survey	Current progress	Responsible person	Counter party	Future plans
1	Detailed design related to energy saving solution introduction and economic effect calculation.	Discovery study: 100% Environment survey and equipment survey: 100%	iFORCOM Tokyo	Batam City	Get data
2	Formulation of monitoring plan	Powered equipment survey: 100% place	iFORCOM Tokyo, Nippon Koei	Batam City	Formulation of monitoring plan
3	Confirmation of order placement / contract procedure by the local business operator as the project is implemented	Confirmation of settlement route (done) Check budget schedule (done) Contractor (Under consideration (2 companies))	iFORCOM Tokyo	Batam City	Proposal presentation
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7	Match the JCM project with the master plan of BIFZA / Batam City (Activities that take advantage of the benefits of inter-city collaboration research)	Collection of the Batam city medium-term development plan (2016-2020) and start of the translation Discussion with BIFZA & Batam City on the result of organizing the master plan Update project mapping plan	Yokohama City, Nippon Koei, iFORCOM Tokyo	BIFZA, Batam City	Arrangement of master plan based on consultation result Confirmation of companies in Yokohama linked to master plan Publish draft project map at seminar Completion of project map (Ver1)

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3.2 Hospital Project

～ Survey target facilities～

No	Survey target facilities	Field survey	Monthly power consumption	Obtaining equipment data	Prospect of JCM implementation	Remarks
1	RS Awal Bros	July 19	3,870 MWh	Already	×	Low interest
2	RS Budi Kemuliaan	December 1	Not yet acquired	Not yet	△	Low interest
3	RS Harapan Bunda	December 2	Not yet acquired	Not yet	△	Low interest
4	Ru,mah Sakit Otorita Batam	May 26	Not yet acquired	Not yet	×	Low interest
5	RS St. Elisabeth	December 1	Not yet acquired	Not yet	△	Low interest
6	RSUD Embung Fatimah Kota Batam	May 25	Not yet acquired	Not yet	×	Exclude from the target since it is a municipal hospital
7	Casa Medical Centre	December 2	Not yet acquired	Not yet	×	Low interest

Rumah Sakit Otorita Batam

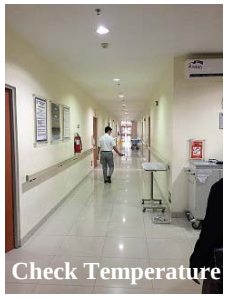






RSUD Embung Fatimah Kota Batam

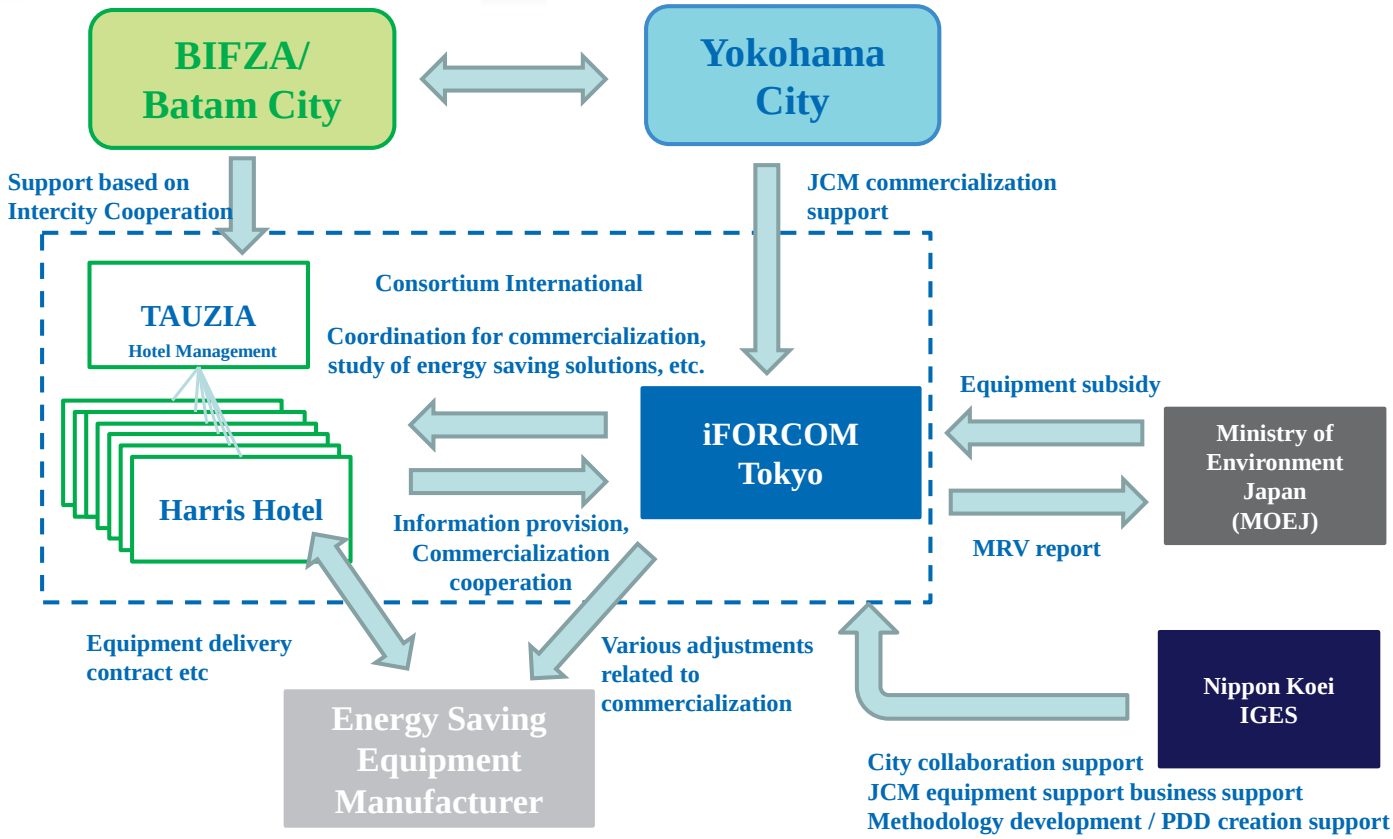




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3.3 Hotel Project

～ Scheme ～



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3.3 Hotel Project ～ Survey Progress and Plan ～

No	Issues to be solved in the survey	Current progress	Responsible person	Counter party	Future plans
1	Detailed design related to energy saving solution introduction and economic effect calculation.	Discovery study: 100% Environment survey and equipment survey: 100%	iFORCOM Tokyo	Harris Hotel	Get data Detailed design Economic effect calculation
2	Formulation of monitoring plan	Powered equipment survey: 100% place	iFORCOM Tokyo, Nippon Koei	Harris Hotel	Formulation of monitoring plan
3	Confirmation of order placement / contract procedure by the local business operator as the project is implemented	Confirmation of settlement route (done) Check budget schedule (done) Contractor (Under consideration (2 companies))	iFORCOM Tokyo	Harris Hotel	Proposal presentation
4	Detailed condition adjustment within the consortium for equipment auxiliary project application	Adjustment of consortium with TAUZIA	iFORCOM Tokyo, Nippon Koei	Harris Hotel	Conclusion of Consortium Agreement with TAUZIA
5	Estimate of energy saving solution horizontally in Indonesia	Under study target Survey of POP hotel as transverse expansion	iFORCOM Tokyo, Yokohama City, Nippon Koei	Harris Hotel	Additional hearing survey as necessary
6	Confirmation of external ordering / contract procedure to facilities / equipment makers etc. related to project implementation	Confirm whether to execute control overseas, Confirm control method	iFORCOM Tokyo	Equipment manufacturer	Export involvement survey Contract related
7	Match the JCM project with the master plan of BIFZA / Batam City (Activities that take advantage of the benefits of inter-city collaboration research)	Collection of the Batam city medium-term development plan (2016-2020) and start of the translation Discussion with BIFZA & Batam City on the result of organizing the master plan Update project mapping plan	Yokohama City, Nippon Koei, iFORCOM Tokyo	BIFZA, Batam City	Arrangement of master plan based on consultation result Confirmation of companies in Yokohama linked to master plan Publish draft project map at seminar Completion of project map (Ver1)

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3.3 Hotel Project ～ Survey target facilities～

No	Survey target facilities	Field survey	Monthly power consumption	Obtaining equipment data	Prospect of JCM implementation	Remarks
1	Harris Hotel Batam Center	Already	1,834 MWh	Already	○	Interested
2	Harris Hotel Waterfront	Already	2,879 MWh	Not yet	○	Interested
3	Harris Hotel Tebet	Already	Not yet	Not yet	○	Interested
4	Harris Hotel Kelapa Gading	Already	Not yet	Not yet	○	Interested
5	Harris Hotel FX Sudirman	Already	Not yet	Not yet	○	Interested
6	Harris Hotel Bekasi	Already	Not yet	Not yet	○	Interested
7	Harris Hotel Denpasar	Already	Not yet	Not yet	○	Interested
8	Harris Hotel Kuta Beach	Already	Not yet	Not yet	×	Hotel is scheduled to close
9	Harris Hotel Seminyak	Already	Not yet	Not yet	○	Interested
10	Harris Hotel Tuban	Already	Not yet	Not yet	○	Interested
11	Harris Hotel Riverview Kuta	Already	Not yet	Not yet	○	Interested
12	Harris Hotel Sunset Road	Already	Not yet	Not yet	○	Interested
13	Harris Hotel Raya Kuta	Already	Not yet	Not yet	○	Interested
14	Harris Hotel Kuta Galleria	Already	Not yet	Not yet	○	Interested
15	Harris Hotel Festival Citylink	Already	2,634 MWh	Already	○	Interested

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3.3 Hotel Project

～ Survey target facilities～

No	Survey target facilities	Field survey	Monthly power consumption	Obtaining equipment data	Prospect of JCM implementation	Remarks
16	Harris Hotel Ciumbuleuit	Already	1,440 MWh	Already	○	Interested
17	Harris Hotel Sentul City	Already	2,634 MWh	Not yet	○	Interested
18	Harris Hotel Riverside	Already	Not yet	Not yet	○	Interested
19	Harris Hotel Gubeng	Already	Not yet	Not yet	○	Interested
20	Harris Hotel Pontianak	wait for implementation	×	×	×	Maintenance is not easy due to access
21	Harris Hotel Samarinda	wait for implementation	×	×	×	Maintenance is not easy due to access


Power receiving panel


Transformer


Outdoor unit AC


Pump

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④ Schedule

Plan and Achievement

The progress of the survey up to the present is organized as follows.

	investigation		2016 Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2017 Jan	Feb	Mar
Review for commercialization of JCM														
1	Detailed design related to energy saving solution introduction and economic effect calculation	Plan												
		Achievement												
2	Formulation of monitoring plan	Plan												
		Achievement												
3	Confirmation of order placement / contract procedure by the local business operator as the project is implemented	Plan												
		Achievement												
4	Detailed condition adjustment within the consortium for equipment auxiliary project application	Plan												
		Achievement												
5	Estimate of energy saving solution horizontally in Indonesia	Plan												
		Achievement												
6	Confirmation of external ordering / contract procedure to facilities / equipment makers etc. related to project implementation	Plan												
		Achievement												
7	Match the JCM project with the master plan of BIFZA / Batam City (Activities that take advantage of the benefits of inter-city collaboration research)	Plan												
		Achievement												

Contact us

iFORCOM Tokyo Co., Ltd.

Masakazu Hirokawa

Erwin Avianto

mail: m.hirokawa@iforcom.jp
e.avianto@iforcom.jp

Tokyo office
Tel :(+81)3-5510-5757
Fax:(+81)3-5510-5756

Representative office in Indonesia
Tel :(+62)21-2960-7507
Fax:(+62)21-2960-7501





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JCM Feasibility Study Scheme
City-to-City Cooperation
Yokohama City and Batam City

Energy Saving Technology by introducing
High Efficiency Thermal Desorption Units

Going for Green



Finetech
Going for Green

www.finetech.co.jp

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Y-PORT Center and Yokohama Urban Smart Solution Alliance

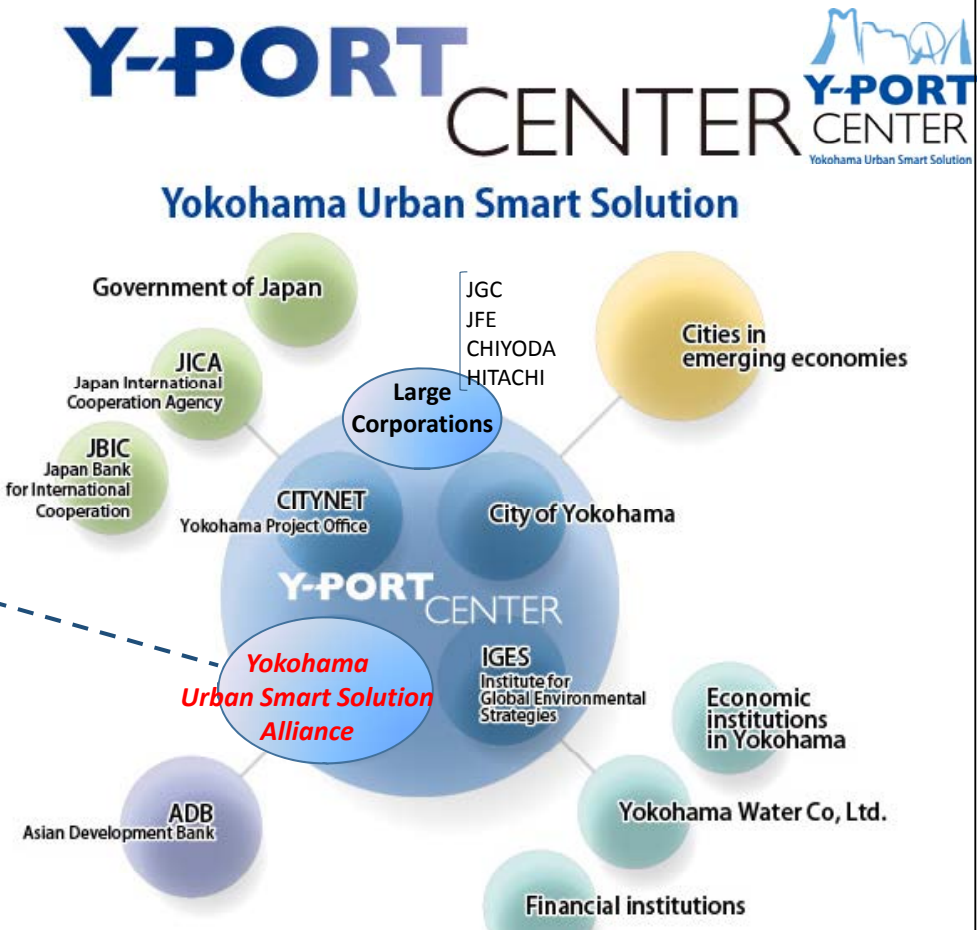
Yokohama Urban Smart Solution Alliance

Over 10 Leading Private SMEs in Yokohama, including **FINETECH**, form up an alliance under the roof of Y-PORT CENTER to;

- Provide best available smart solutions
- Establish a showcase of smart urban solutions
- Serve and promote as one-stop shop with SME's knowledge and technologies

to cities in Asia and the world.

Y-PORT CENTER
Yokohama Urban Smart Solution



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Finetech
Going for Green

Key Member Companies of Y-PORT CENTER

- 10 Leading Private SMEs and 4 Major Firms
- The International City-to-City Cooperation Activities

Y-PORT CENTER
Yokohama Urban Smart Solution

FINETECH Co., Ltd	Interaction Corp (Listed Company)	Ueno Green Solutions Co., Ltd	Osumi Co., Ltd
CARBON FREE CONSULTING	CTC Co., Ltd	Suidou Technical Service Co., Ltd	AMCON INC
Mansei Recycle Systems Co., Ltd	Unimation System INC	Major Firms HITACHI / JCC	Major Firms CHIYODA / JFE ENG

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Smart Green Park (Trademark of FINETECH)



Location : Ashikaga City / Japan

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“SMART GREEN WORLD”… where we will live.

Developing and Expanding Smart Communities

Utilizing Green Energy



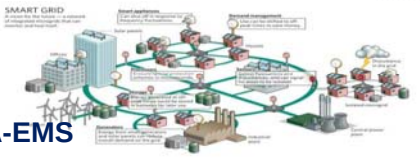
Renewable & Biomass Energy Mix



FINETECH’s Global Initiative

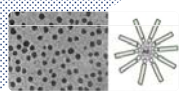
- Smart Green Park >>> JAPAN
- Smart Green City >>> Thailand
- Smart Green Heritage Park >>> Cambodia

Advanced EMS for
Energy saving / Demand Control
Remote Monitoring & Control



A-EMS

Developing Green New Materials



Green Nano



Green Plastics

Smart Living Place
Smart Working Place
Smart Transportation
Smart Urban Grid

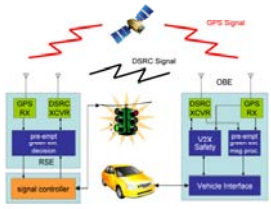
Smart Green Open Innovation Platform

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Smart Green Island Project Conceptual Mapping for BATAM



Smart Renewable Energy





Smart Traffic & Transportation

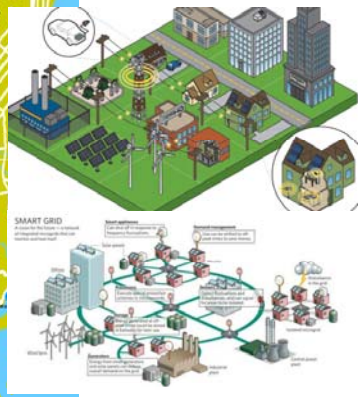


Smart Living Place





Smart Working Place



Smart Urban Grid

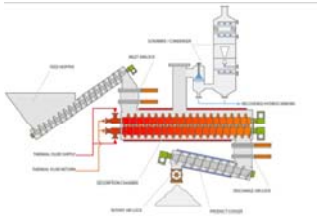
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Finetech Going for Green

JCM FS / Oil Sludge Treatment

- Oil sludge treatment industry is expanding business activities with high demand of tanker ship cleaning in the region. Major problems the industry is now facing is that efficiency of kiln-type treatment equipment is very low which is the bottleneck for future business expansion.
- Having known the back-ground of the oil sludge treatment industry, FINTECH defined JCM project opportunity in this area of Oil Sludge Treatment Business and we are going to have ***installation of high efficiency thermal desorption unit***, replacing the old rotary kiln system for the process of oil sludge treatment.





Where we are

July	September	October	January
Base-lining / Data Collection	Data Analysis Design for Small-scale Pilot in JPN	Verify / Pre-Proposal	Design for Deployment / Final Proposal

2016 **2017**

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Oil Sludge Treatment / Updated Status

- Capacity Building ①
  - FINETECH organized a site-tour to the "Smart Green Park" on October 18th, 2016, inviting Mr. Azril from Batam City, Mr. Binsar from BIFZA, and Mr. Kurniawan from PT DESA AIR CARGO, on the occasion of the Official JCM Seminar.



  - Having received oil sludge & treated oil samples from PT MEGA GREEN TECHNOLOGY, FINETECH conducted analysis and experiments at the Labo in the park. We showed the facilities and on-going analysis activities.


Output sample


Input sample


Input sample





Finetech Going for Green

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Oil Sludge Treatment / Updated Status

➢ Capacity Building ②

FINTECH also conducted a site-tour for Mr. Bustami / Duputy Chairman of BIFZA on November 14th, 2016, on the occasion of "Investment Seminar for Batam Free Zone" organized by NIKKAN Industry Newspaper.



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Oil Sludge Treatment / Updated Status
JCM Steering Meeting in BIFZA with FINETECH

FINETECH was invited to a JCM Steering Meeting organized by Dr. Robert, Deputy Chairman of BIFZA, on December 6, 2016







Center: Dr. Robert / Deputy Chairman of BIFZA
Far Right: Mr. Memet / Head of Technical Planning of BIFZA
Second from Right: Mr. Iyus / Head of Waste Management of BIFZA
Third from Right: Mr. Binsar / Head of Environment of BIFZA
Third from Left: Mr. Zaiani / Batam City Government
Second from Left: Mr. Kurniawan / CEO of PT DESA AIR CARGO

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Oil Sludge Treatment / Updated Status

< Simplified Oil Sludge / Slop Oil Treatment Process >

Target for JAM Financial Support Scheme (Replacement of Facility & Equipment)

INPUT → **Treatment Process** → **OUTPUT**

Sludge Oil



Slop Oil



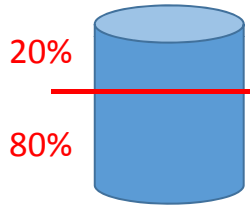
- Different types of sludge oil
- Difficulties in handling
- Need to expand stockyard

Treatment Process



- Inefficient process: 5t/day
- Limited capacity for handling
- Target Capacity : 50t～100t/day
- Parallel Treatment Line

Recycled Diesel Oil for sale



Target sales : 1,500t/month

Residues should be minimized



- New Business Development >> Blocks / Asphalt Material

- Tipping Fee Revenue should be increased
- Sales of recycled diesel oil should be increased

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Finetech Going for Green

APPENDIX

Another Key Opportunity for JCM Financial Support Scheme

"Implementation of 1.8MW PV Solar System at PT DESA AIR CARGO for Energy Utilization by AEMS in the Industrial District"

Industrial District Around PT DESA AIR CARGO

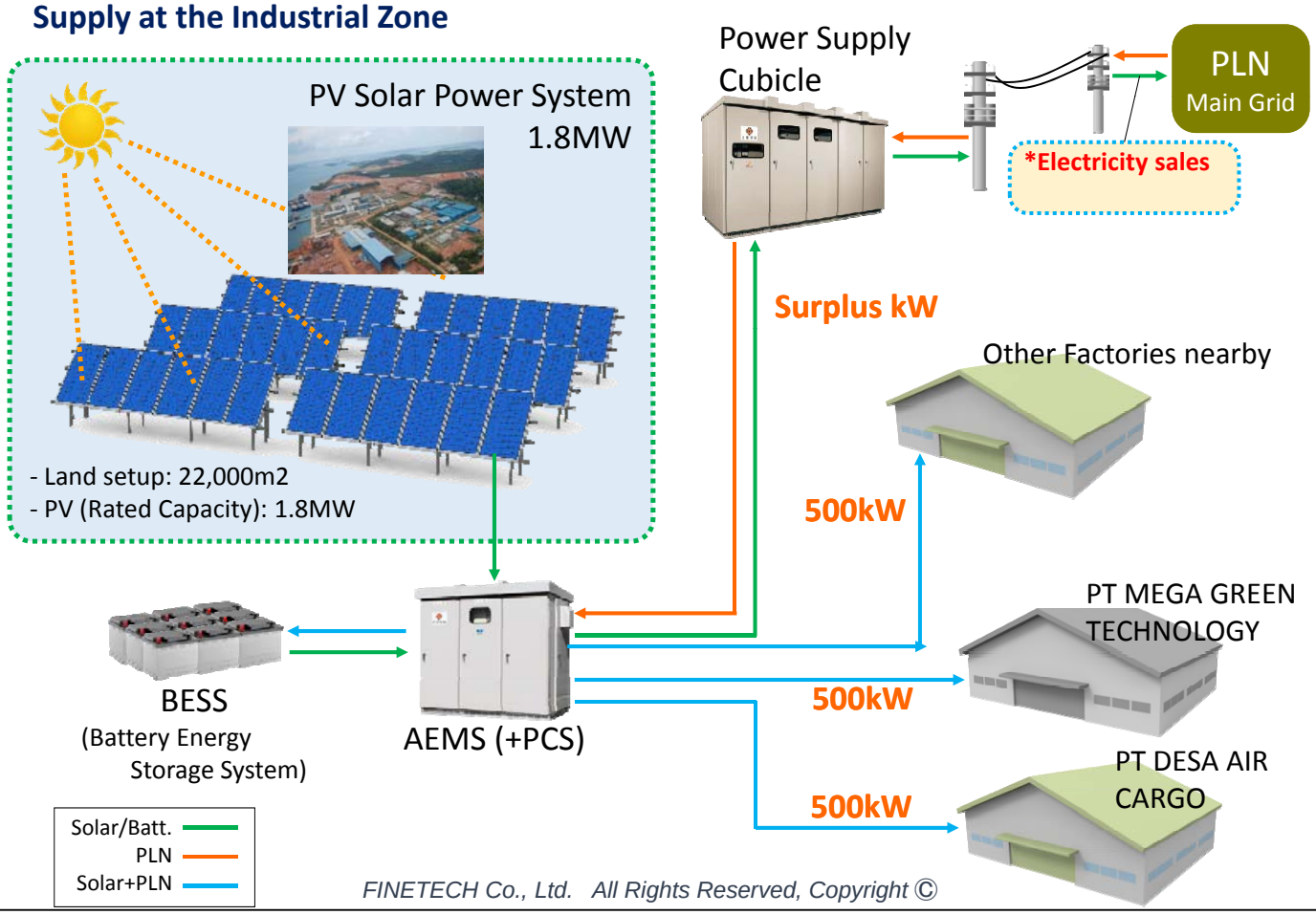


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Finetech Going for Green

Key Opportunity / PV Solar Power Utilization

➢ **PV Solar Farm System with Advanced Energy Management System for Utilization of Energy Supply at the Industrial Zone**

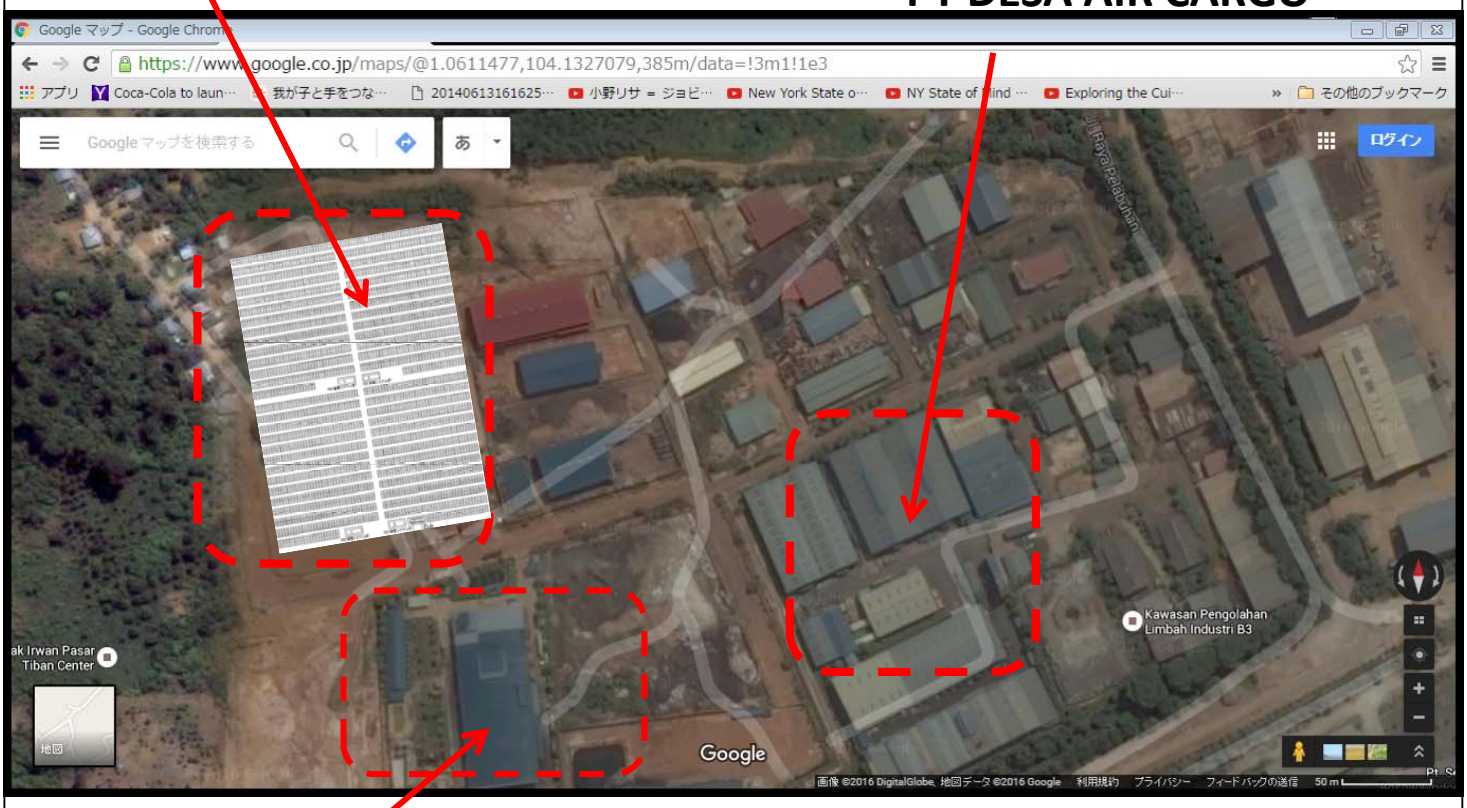


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Key Opportunity / PV Solar Power Utilization

PV Panel (Land Setup)（Approx. 22,000㎡）

PT DESA AIR CARGO



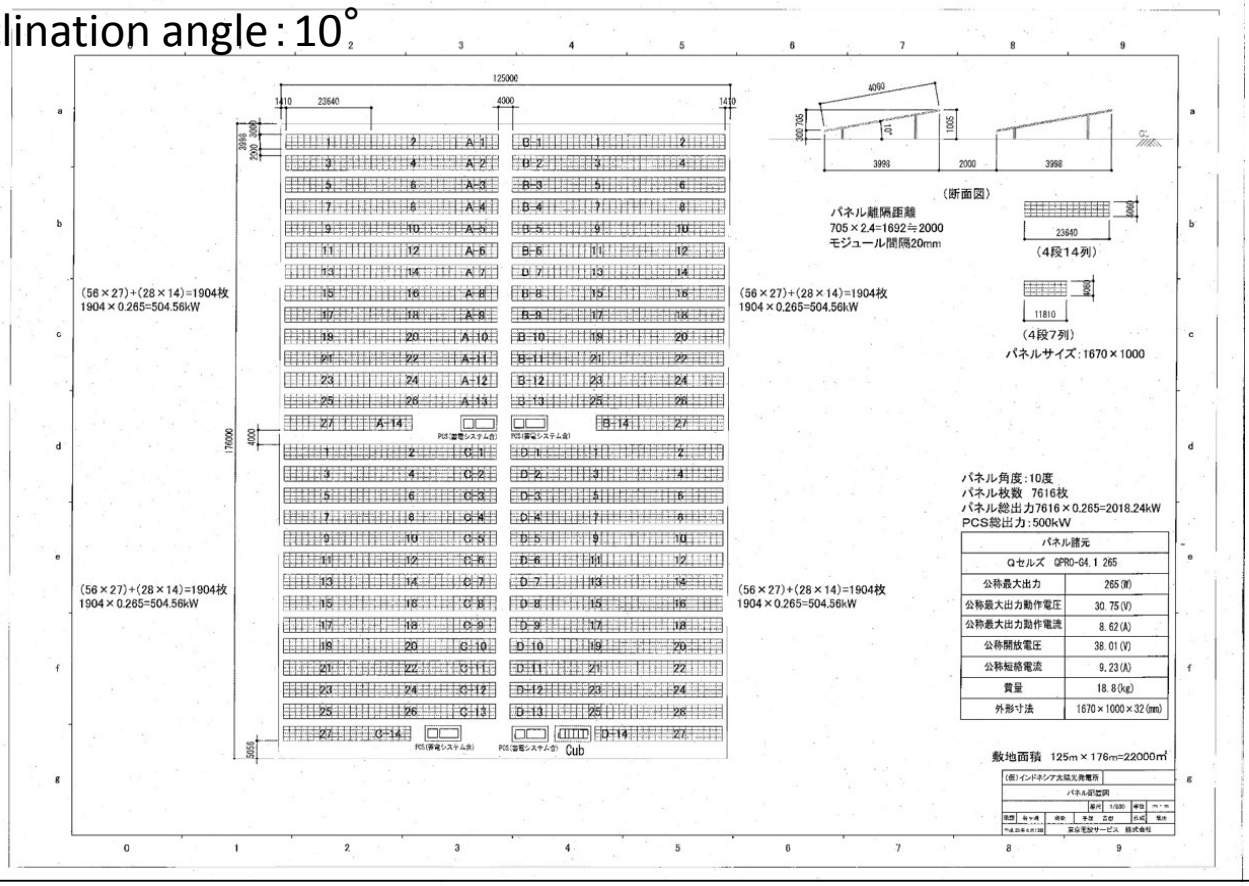
PT MEGA GREEN TECHNOLOGY

Panel Layout

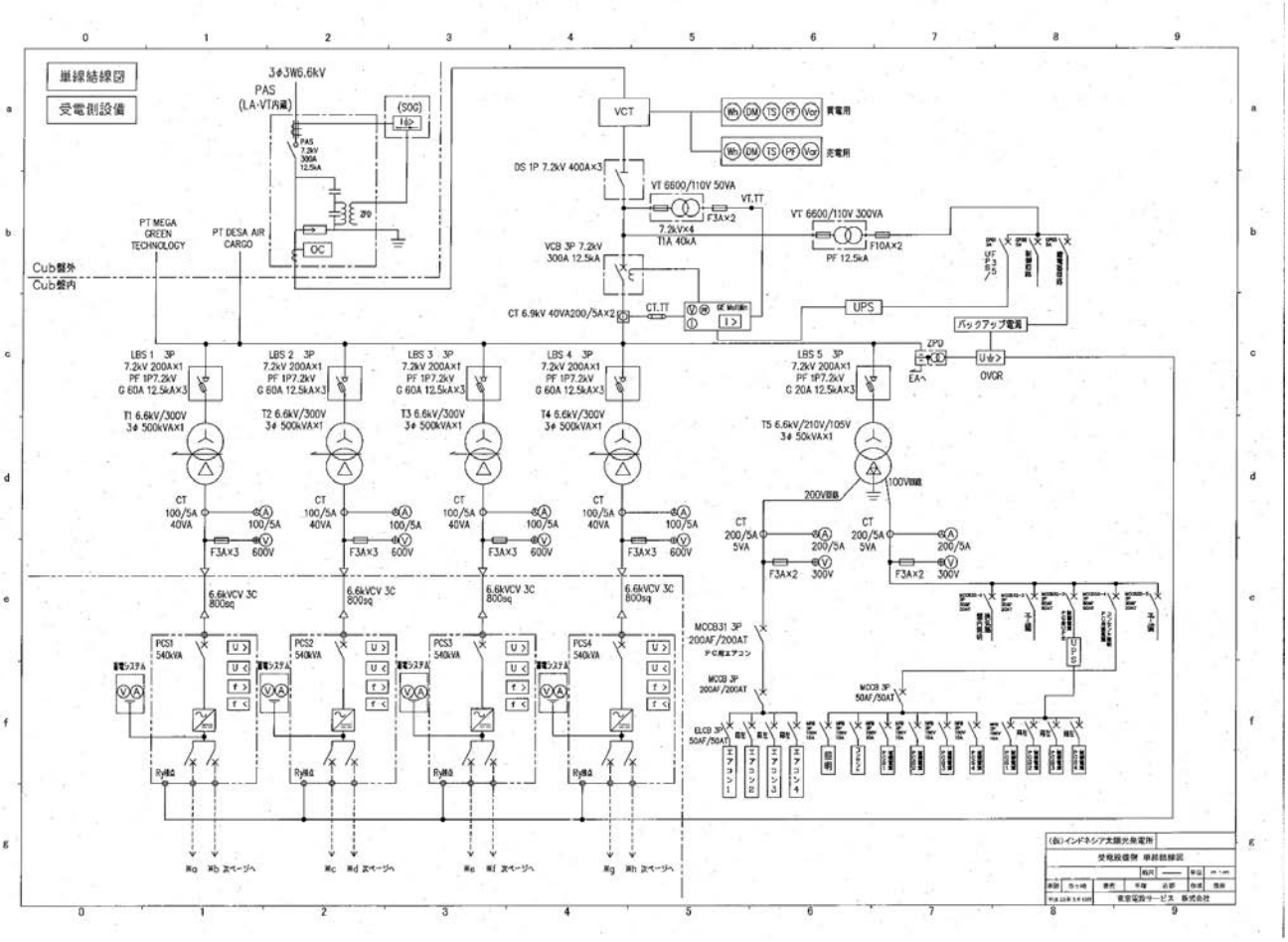
Out Put: DC 2,018.24kw

Number of Panel:7,616 (Pmax-265W)

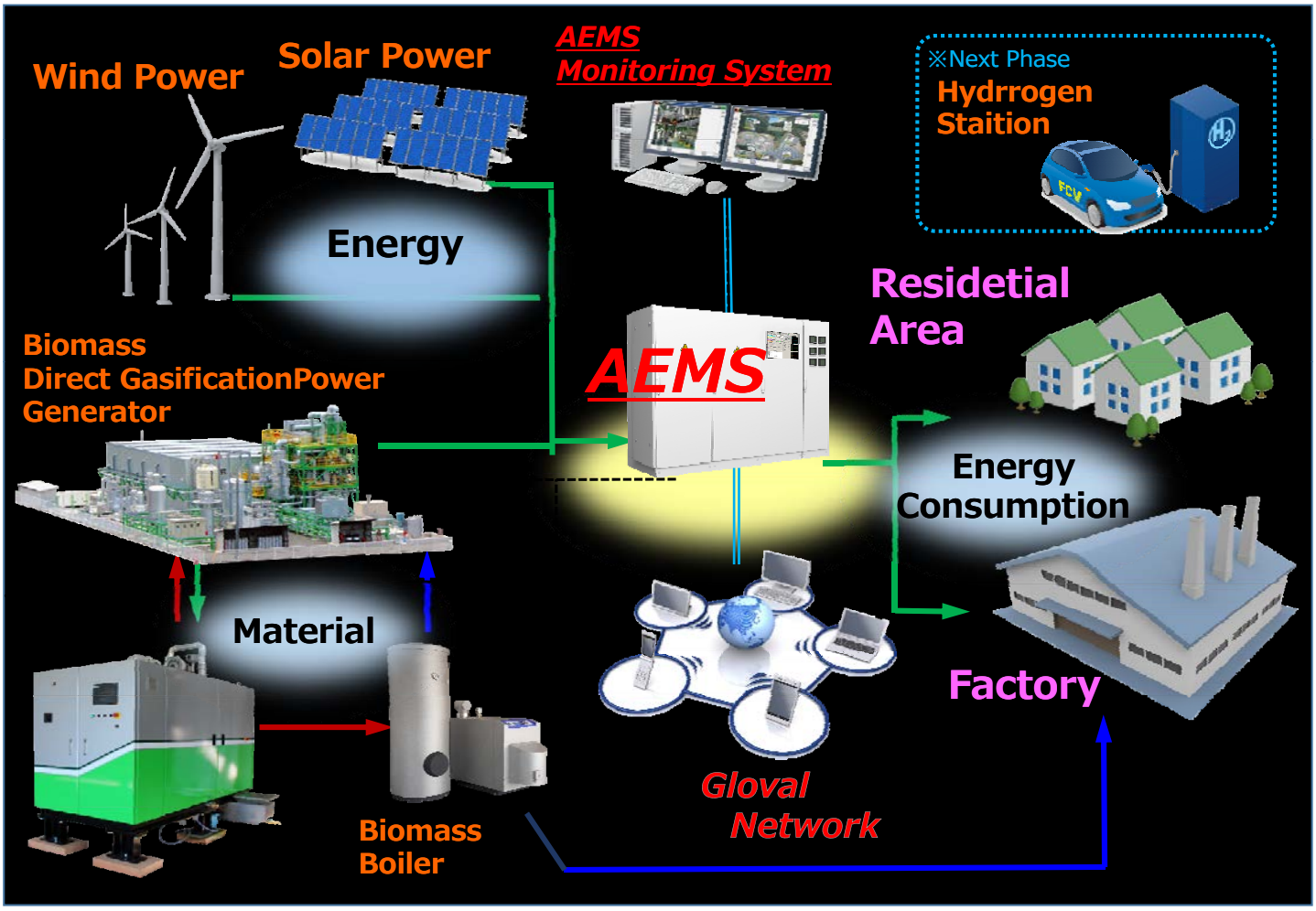
Inclination angle : 10°



Single-line diagram



Key Technology / AEMS (Advance Energy Management System)



HITACHI
Inspire the Next

Hitachi's Water Solutions

Hitachi, Ltd.
Jan, 2017

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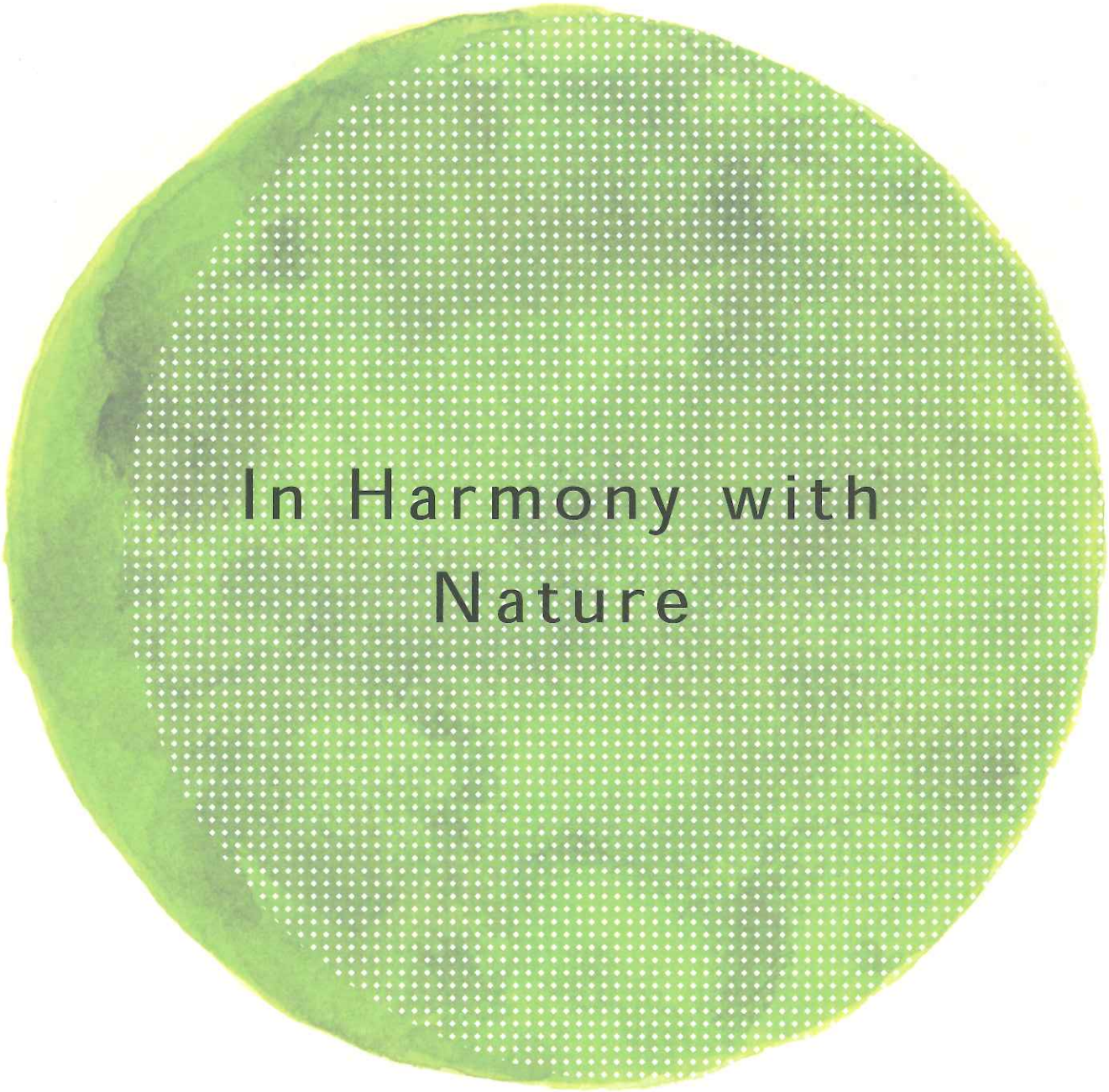
Introduction to AGC

Asahi Glass Co., Ltd.

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Green engineering for a sustainable society

ECO SOLUTIONS



KAJIMA CORPORATION

Products
- Automotive equipment
  - Four-wheeled motor vehicle
  - two-wheeled motor vehicle
  - Accessory & Parts
- Electronic equipment
  - Electronic Components
  - LED Lighting Products
  - Applied Electronic Products
- Information on Product
  - Future Research Laboratory
  - Exhibitions & Events

Products

Stanley Electric seeks to exploit the unlimited possibilities of “light,” offering unique products. They are applied to a wide range of fields including automotive lighting equipment and electronic components.

Product Lineup

Automotive equipment



Four-wheeled motor vehicle

As a pioneer of automotive bulbs, the company has continued to contribute to society by developing and offering a wide range of new equipment.

Go to detailed page



Two-wheeled motor vehicle

For more light and comfort, Stanley Electric creates comprehensive products for two wheel vehicles to secure more safety.

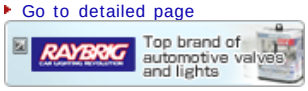
Go to detailed page



Accessory & Parts

Built up through employment as genuine for car manufacturers, technologies of Stanley are also applied to automobile parts and components for consumers.

Go to detailed page



Electronic equipment



Electronic Components

Electronic devices created on the basis of the cutting-edge, sophisticated technologies of Stanley have always contributed to social and industrial development.

Go to detailed page





LED Lighting Products

Stanley's lighting used in automotive lamps with our optical technology and in LED devices with our devel opment power, is lighting that is in place in the necessary places..

Go to detailed page





Applied Electronic Products

Stanley's electronic devices are applied to numerous industries and fields, contributing to the daily lives of consumers.

Go to detailed page

Information on Product

Future Research Laboratory

Know about Light!

Go to detailed page

Exhibitions & Events

See our cutting edge technologies

Go to detailed page

Create your future **Sodick LED**

LED High-intensity Floodlights

PIKA Series





Powerful wide light

Energy savings

Instant lighting

Long life

Custom correspondence for Color rendering and Color temperature.

Power consumption 600W

Long life
Lasting up to 7 times longer, with less maintenance

Boasts an outstandingly long life of 50,000 hours (lumen maintenance factor of 85%). Less time and efforts is required to replace lamps in high places, thereby greatly cutting back on maintenance cost.

Power consumption
Drastic reduction of running costs with power savings of up to 75%

Brightness is equal to and beyond 1500W HID lamp floodlights, while achieving superb power saving by approximately 75% (average power consumption).
Electricity bills are cut significantly without compensating light.



MADE IN YOKOHAMA, JAPAN

Sodick LED http://www.sodickled.co.jp

LED High-intensity Floodlights

PIKA Series



Product Specifications

Body Specifications	Model	PIKA BayStar
	Environment of use	For indoor / outdoor use, salt damage-proof Specifications
	Total luminous flux	77,000 lm
	Correlated color temperature	5,000 K
	Average color rendering index	≧73 Ra
	External dimensions (W × H × L)	302 × 385 × 425 mm
	Mass	16.2 kg
	Operating temperature range	-20℃～ +40℃ *1
	Operating humidity range	10 ～ 95% (no condensation)
	Design life	50,000 hours (luminous flux maintenance factor 85%)
	IP rating	IP66
	Warranty term	4 years
	Irradiation angle	20°
Power Supply Specifications	Model	HLG - 600H - 36A
	Input voltage	AC90V～305V
	Input current	7.0A (115V) / 3.3A (230V)
	Power supply frequency	50 / 60 Hz
	Power factor	0.95 (230V)
	IP rating	IP65
	Compliance with standards	PSE compliant
	Power consumption	600 W ±10%

* Initial illumination revision function (option)
* Light control function (option)
*1 It supports temporary high temperature environment (+50℃) of the summer.



⚠ Safety Precautions (To be Observed Without Fail)

! CAUTION (These precautions indicate potential hazards which may cause injury or property damage.)

• Do not drop the product, bump anything against it, rest anything heavy on it, subject it to excessive forces, or scratch it. (Cause of damage) • To avoid hazards including the product falling or catching fire, and electric shock, install the product securely with brackets that can bear its weight, and wind pressure. (Cause of falling) • If the surface on which the product is to be installed is not strong enough the product may fall. Be sure to check prior to installation.
• When installing the product at a location where it could affect property or people, take measures to prevent it from falling, such as use of safety wires.
• If the front cover becomes cracked, it could fall off or cause electric shock or damage to the lamp due to exposure to water. Discontinue use in this state. • For an LED to have ill-balance, the luminous color and the brightness are sometimes also different in identical stock number goods every goods. • It is necessary for settlement and removal construction by qualification of electric construction. • When installing the product on a concrete surface, wait until the concrete is set, and test its properties such as strength before installation. • Do not apply any coating to the product. The lamp will overheat and may cause injury as a result of becoming damaged. • Do not use the product at locations where there is a risk of immersion in water. This could cause current leakage, electric shock or product failure. • Do not use the product outside of the specified voltage range. (Cause of damage)
• The strength and water resistance of the product are guaranteed within its scope of use. Any use outside of this scope may result in problems. • Do not touch the product while it is lit or immediately after it is turned off since it will be hot.
• Product life will be shortened if the ambient temperature is high or if the product is lit for long periods, etc. • If any problem occurs, immediately discontinue use and contact the retailer.
• An illuminator has the life expectancy. When it's established and it's passed for 10 years, even if there is no abnormality in the outward appearance, It's proceeding with degradation inside the equipment. Please check and exchange it.
** The terms of use turn on for ambient temperature 30 degrees Celsius, ten hours a day.*
• Please check once a year based on "a safe check sheet" independently.
• Please have the examination by a specialist by which once per 3 years are construction shops.

About the Warranty

• The warranty term for this product is 4 years. For more details, please read theprovisions of the product warranty. For details on how to use the product, refer to the separate instruction manual. • Due to ongoing research, specifications are subject to change without prior notice. • The content of this catalog is current as of September 2016.

Sodick LED Co.,Ltd. http://www.sodickled.co.jp

■ **Headquarters / Plant**

5289 Nagatsuda-cho, Midori-ku, Yokohama 226-0026 JAPAN
Phone : +81-45-924-2720 Facsimile : +81-45-924-2721

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SUIDO TECHNICAL SERVICE Co., Ltd



\Orchestrating a brighter world

NEC

Introduction to **NEC Smart City Case Study**

NEC Corporation

January 2017

Implementasi Proyek JCM di Indonesia

Dicky Edwin Hindarto

Sekretariat JCM Indonesia

Coordinating Ministry for Economic Affairs Republic of Indonesia

JCM JOINT CREDITING MECHANISM INDONESIA SECRETARIAT

Konsep dasar JCM

JCM merupakan skema antar pemerintah yang mendorong pihak swasta untuk melakukan investasi dalam proyek pembangunan rendah karbon di Indonesia



- Untuk melakukan kegiatan pembangunan rendah karbon di bawah JCM, maka pemerintah Jepang melakukan bantuan pendanaan.
- Sebagai timbal baliknya, JCM meminta tiap pihak pelaksana proyek untuk melakukan pencatatan penurunan gas rumah kaca. Hasil penurunan emisi ini akan dibagikan kepada pelaksana proyek (opsional), Pemerintah Jepang (wajib), dan Pemerintah Indonesia (wajib).

JICA

JCM dalam Paris Agreement

JCM dapat dikategorikan dalam *cooperative approaches*

Paris Agreement

- Cooperative approaches (Article6 para 2)
- A mechanism authorized and guided by UNFCCC (Article6 para 4)
- A framework for non-market approaches (Article6 para 9)

- Use of internationally transferred mitigation outcomes towards nationally determined contributions, promote sustainable development and ensure environmental integrity and transparency the avoidance of double counting, consistent with guidance adopted by COP the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement. (Article6 para 2)

- The use of internationally transferred mitigation outcomes to achieve nationally determined contributions under this Agreement shall be voluntary and authorized by participating Parties

(Article6 para 3)

JCM di Indonesia: Pra atau Paska 2020?

- Sampai saat ini JCM di Indonesia berlaku sampai tahun 2020. Keberlanjutan sampai tahun 2030 (Paris Ageement), akan didiskusikan selanjutnya pada JC meeting 6.
- Dari 16 negara partner JCM, baru Thailand dan Chile yang sudah menyatakan akan melanjutkan komitmennya hingga tahun 2030

Jenis skema pembiayaan

Model Project

Subsidi oleh MOE | Biaya dari partisipan proyek

50% | 50%

Biaya awal untuk instalasi alat baru

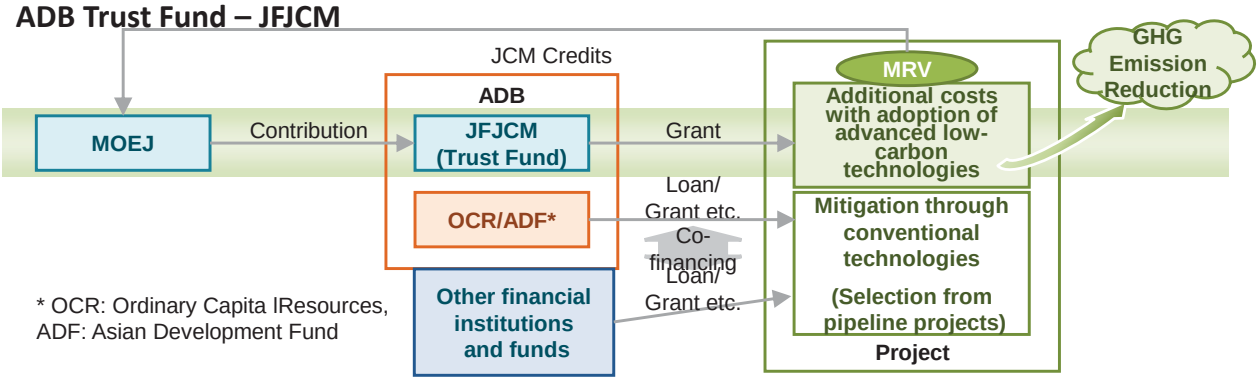
Demonstration Project

Subsidi oleh METI | Biaya dari partisipan proyek

Dapat lebih dari 50%

Jumlah subsidi sesuai hasil negosiasi dengan METI

ADB Trust Fund – JFJCM



* OCR: Ordinary Capita lResources, ADF: Asian Development Fund

Pembiayaan yang telah diberikan

Pembiayaan JCM di Indonesia (Berdasarkan data Juli 2016)

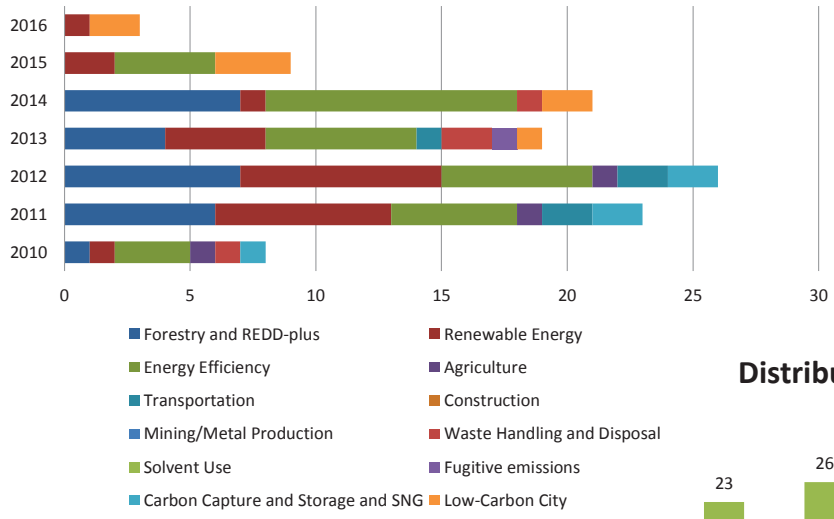
Subsidi dan hibah Pemerintah Jepang untuk skema JCM Indonesia



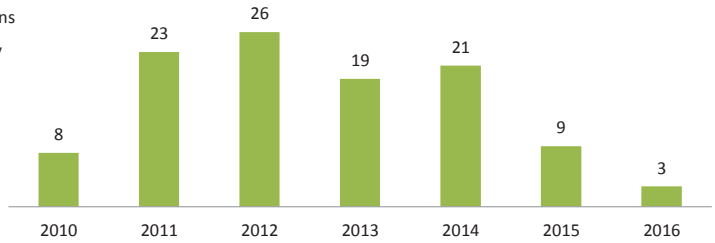
*Penghitungan berdasarkan estimasi

Feasibility study (2010 – 2016)

Distribusi FS JCM per sektor (2010-2016)



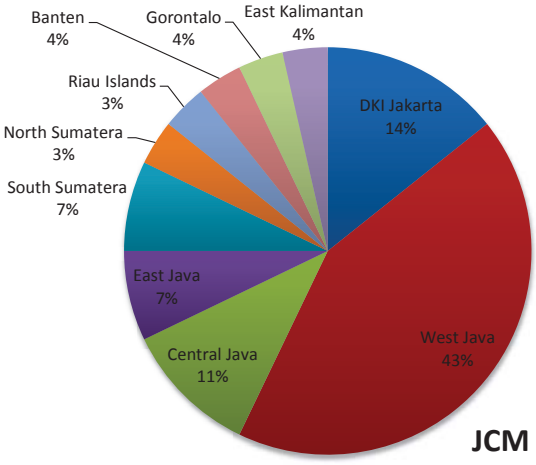
Distribusi JCM FS per tahun (2010 - 2016)



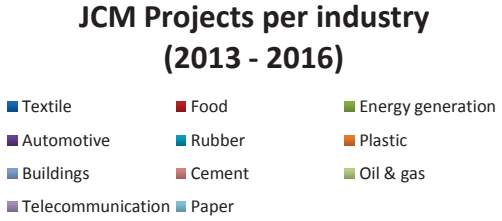
*Pada tahun 2016, bantuan FS hanya diberikan kepada skema *city-to-city* dan FS large scale

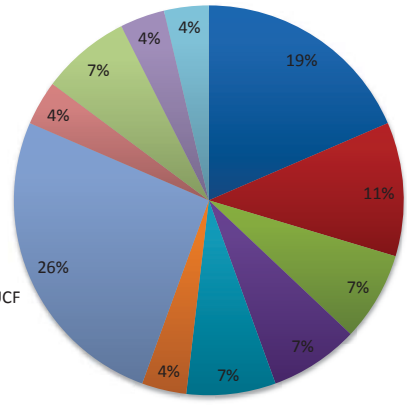
Implementasi proyek JCM

JCM Project location (2013 - 2016)

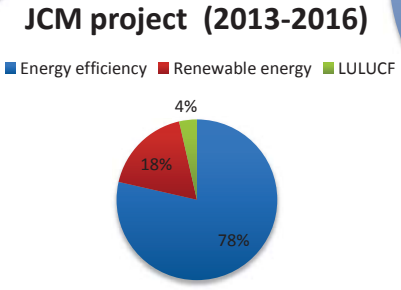


JCM Projects per industry (2013 - 2016)

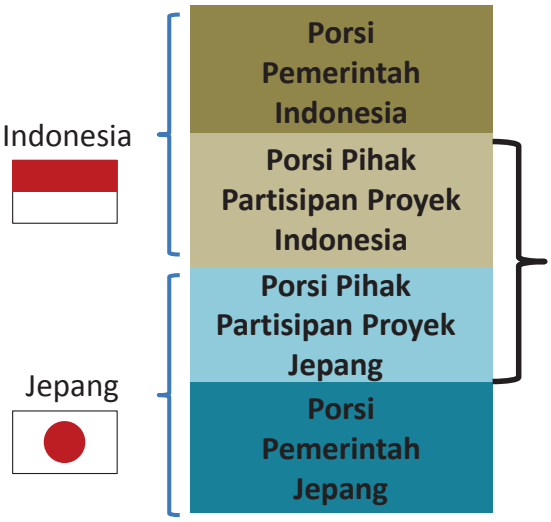




JCM project (2013-2016)



Pembagian kredit JCM



- Pemerintah Indonesia dan Jepang masing-masing akan mendapatkan bagian penurunan emisi karbon
- Pihak Indonesia (*Indonesia side)* = Pemerintah Indonesia + Swasta Indonesia
- Pihak Jepang *(Japan side)*= Pemerintah Jepang + Swasta Jepang

Bagaimana membagi kredit JCM?

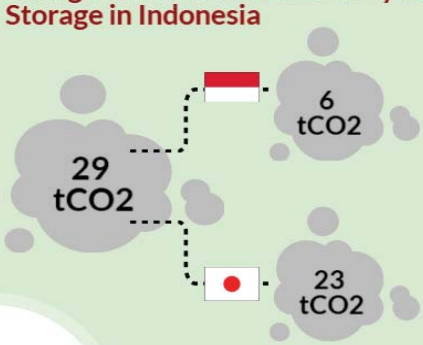
1. Pemerintah Indonesia akan mendapatkan bagian penurunan emisi karbon.
2. Pihak swasta sebagai partisipan proyek akan saling berdiskusi terkait dengan penurun emisi yang akan mereka dapatkan. Jumlah ini bisa sesuai dengan jumlah investasi masing-masing pihak.

Proyek yang telah menerbitkan kredit penurunan emisi

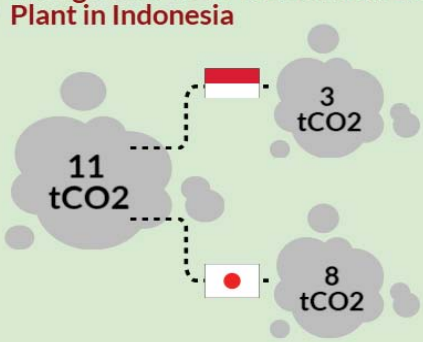
Penerbitan Kredit Karbon

Kredit karbon sebesar 40 tCO2 telah diterbitkan dari 2 proyek dan keduanya merupakan proyek efisiensi energi.

ID 002 **Project of Introducing High Efficiency Refrigerator to a Food Industry Cold Storage in Indonesia**



ID 003 **Project of Introducing High Efficiency Refrigerator to a Frozen Food Processing Plant in Indonesia**



The **FACTS**

Kredit karbon yang diterbitkan merupakan kredit karbon JCM pertama di dunia dan merupakan kali pertama Indonesia menerbitkan karbon kredit



Proyek *flagship JCM: Waste Heat Recovery Project*

Partisipan proyek:
PT Semen Indonesia Tbk & JFE Engineering

Proyek:
Proyek ini memanfaatkan panas buang (*waste heat)* dari preheater dan cooler untuk menghasilkan listrik. Jumlah listrik yang dihasilkan adalah sebesar 30,6 MW

Penurunan emisi:
Estimasi besar penurunan emisi: 122,358 tCO_2/tahun

Karakteristik proyek:
Merupakan proyek JCM terbesar dalam hal penurunan emisi dan jumlah investasi. Konstruksi proyek akan selesai pada pertengahan tahun 2017 dan diusahakan agar dapat diresmikan oleh presiden



Proyek *flagship JCM:* PLTS Jakabaring

Proyek Pembangkit Listrik Tenaga Surya Jakabaring Sports City

oleh PD Pertambangan dan Energi Sumatera Selatan & SHARP Corporation

dengan penurunan emisi kurang lebih sebesar 1300 tCO2/tahun.

Pembangunan proyek PLTS berkapasitas 1,6 MW di kompleks olahraga yang dipersiapkan untuk Asian Games 2018

Proyek ini akan diselesaikan pada bulan Oktober 2017

18th Asian Games JAKARTA-PALEMBANG 2018

Proyek saat ini dalam tahap pengurugan lahan dan diskusi terkait *feed-in-tariff* dengan PLN

Kerjasama antar kota di bawah JCM

- Ada 3 kota di Indonesia yang saat ini bekerjasama dengan kota di Jepang di bawah skema JCM
- Kerjasama akan meliputi kegiatan pertumbuhan rendah karbon dengan fokus pada implementasi proyek JCM
- Kota-kota yang telah melakukan kerjasama adalah Surabaya dengan Kitakyushu, Bandung dengan Kawasaki, dan Batam dengan Yokohama
- Saat ini sedang dijajaki kemungkinan kerjsama antara Kyoto dengan Solo
- Tiap kota mempunyai tantangan yang berbeda dalam implementasinya.



Tantangan implementasi JCM di kerjasama antar kota

1. Organisasi
- Penanggung jawab dan pelaksana pekerjaan
- Kapasitas organisasi

2. Perencanaan
- Kesesuaian dengan masterplan kota
- Kesulitan untuk mendapatkan partner yang tepat

3. Pendanaan
- Penunjukan dan tender pekerjaan
- Pendanaan dari APBD
- Keterbatasan pendanaan dari pemerintah Jepang

4. Implementasi proyek
- Kapasitas dari pelaksana proyek
- Hukum dan peraturan lain
- Komunikasi dengan pihak partner



Coordinating Ministry
for Economic Affairs
Republic of Indonesia

JCM
JOINT CREDITING MECHANISM
INDONESIA SECRETARIAT

Thank you! Terima kasih!

Our website: http://jcm.ekon.go.id

Contact us at secretariat@jcmindonesia.com

Sekretariat JCM Indonesia

Gedung Kementerian Koordinator Bidang Perekonomian Lt.2

Jl. Medan Merdeka Barat 7, Jakarta 10110



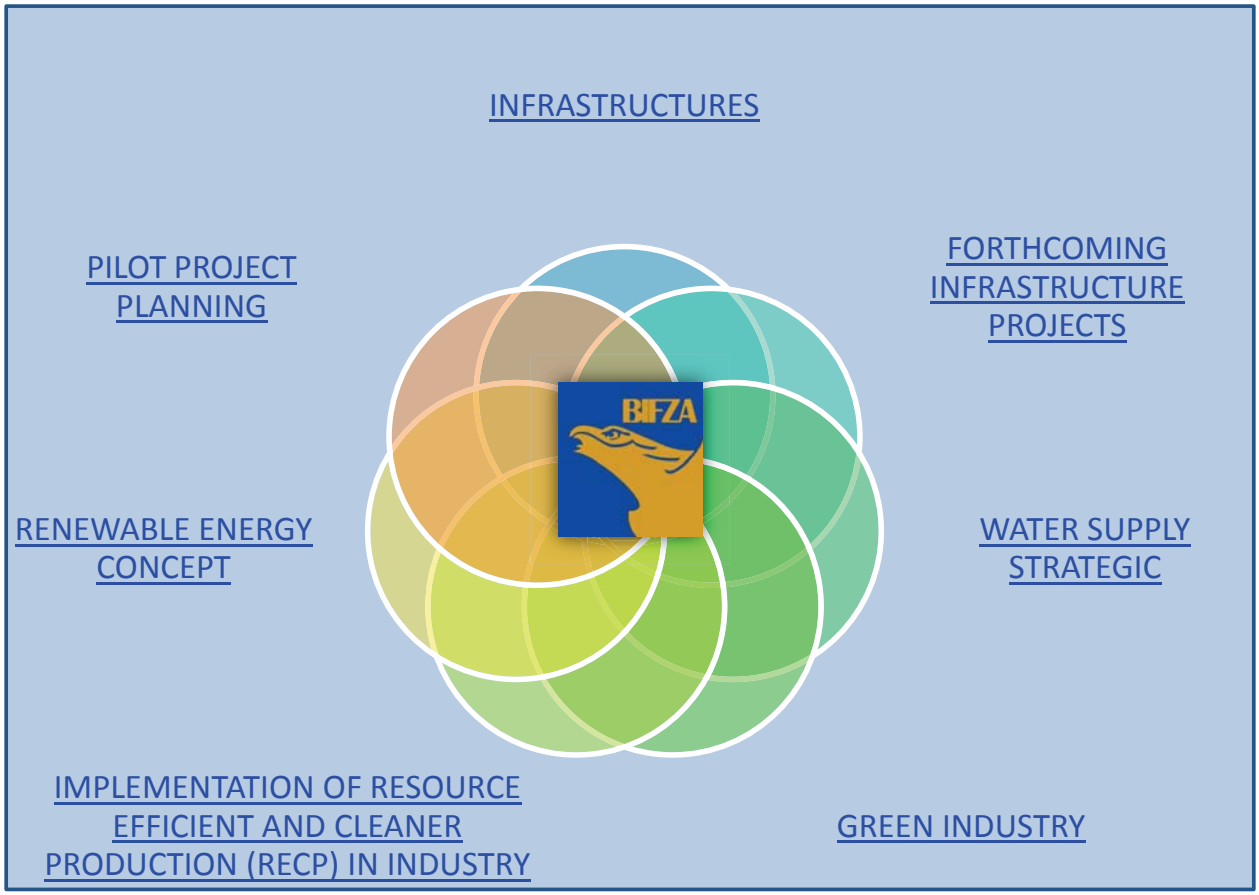
Batam Indonesia Free Zone Authority (BIFZA)

Final Seminar:

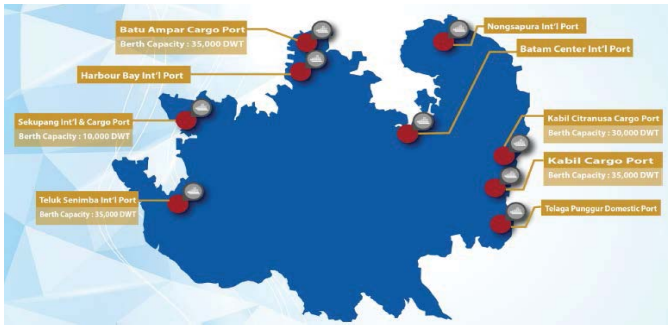
City-to-City Collaboration between Batam City and Yokohama City



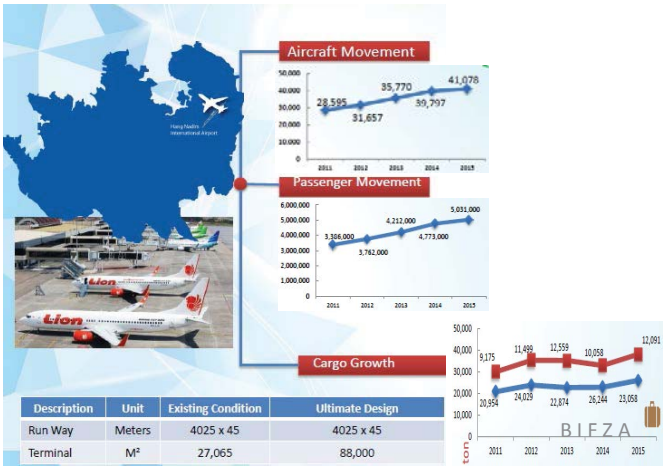
Batam, January 19th 2016
Harris Hotel - Batam Centre



- SEA & CARGO PORT



- HANG NADIM INTERNATIONAL AIRPORT



Description	Unit	Existing Condition	Ultimate Design
Run Way	Meters	4025 x 45	4025 x 45
Terminal	M²	27,065	88,000

- HOSPITAL



- ELECTRICITY, ROADS, INTERNET & TELECOMMUNICATION

Electrical Power Supply

PLTD (Diesel Power plant)	89,53 MW
PLTMG (Machined Gas PP)	43,50 MW
PLTU (Steam PP)	130,00 MW
PLTGU (Gas Steam PP)	44,52 MW
PLTG (Gas PP)	231,40 MW
Total Capacity	538.95 MW
Peak Load	473 MW

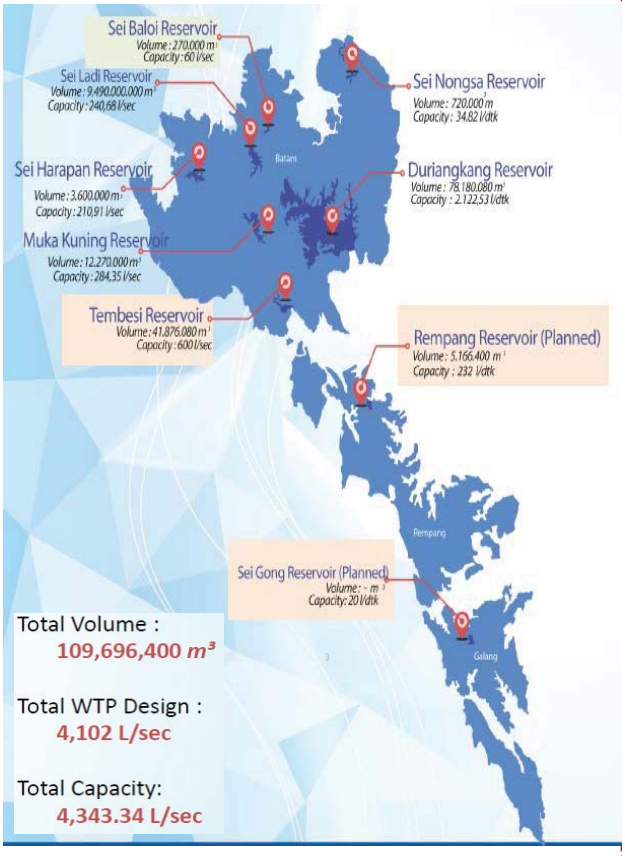
Roads

Arterial Road	474,78 km
Collector Road	352 km
Local Road	850 km
Total Roads Constructed	1,676.78 km

Internet & Telecommunication

Phone Capacity	111,768 Line Unit
FO Internet Back Bone	Up to 1 Gbps

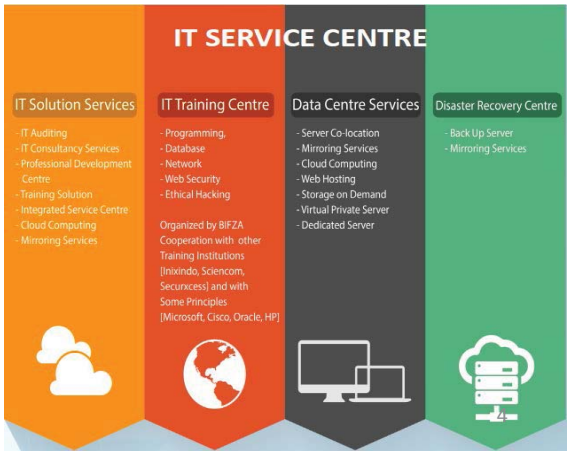
- FRESH WATER SUPPLY



- PUBLIC GAS FACILITY



INFORMATION TECHNOLOGY



FORTHCOMING INFRASTRUCTURE PROJECTS



BATU AMPAR CARGO PORTS



TANJUNG SAUH TRANSHIPMENT CONTAINER PORT



SEKUPANG CARGO PORT



TOLL ROADS (Phase 1)



BATAM LIGHT RAIL TRANSIT



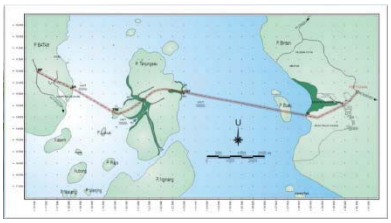
TERMINAL 2 HANG NADIM AIRPORT



CARGO TERMINAL OF HANG NADIM AIRPORT BATAM



BATAM WWTP (Phase 2)



BATAM – BINTAN BRIDGE



INTEGRATED SERVICE UNIT

WATER SUPPLY STRATEGIC







- Utilize and maximize existing Dam;
- Planning a potential new Dam in Batam – Rempang – Galang area;
- Desalination of sea water;
- Recycling of domestic waste water;

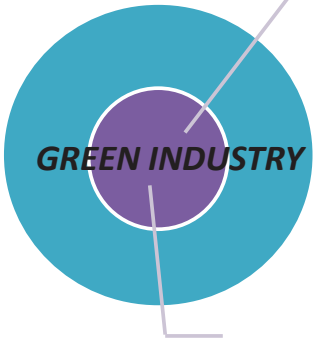






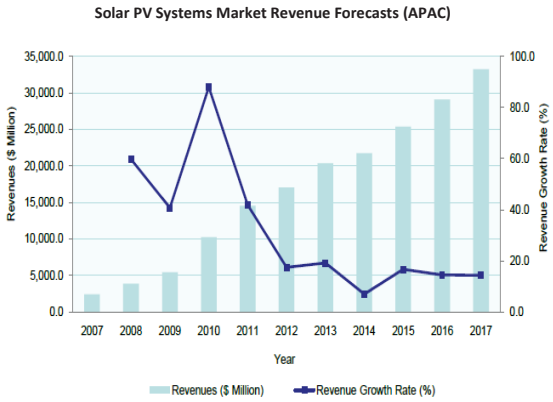


One of BIFZA's focus industries:



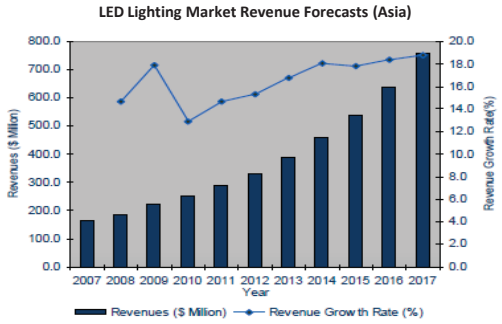
Photovoltaic (PV)





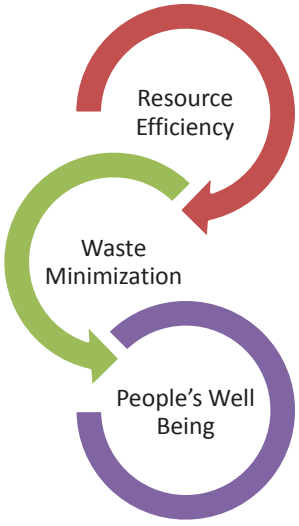
Light-Emitting Diode (LED)





Source: BIFZA's Roadmap, 2011

IMPLEMENTATION OF RESOURCE EFFICIENT & CLEANER PRODUCTION (RECP) IN INDUSTRY



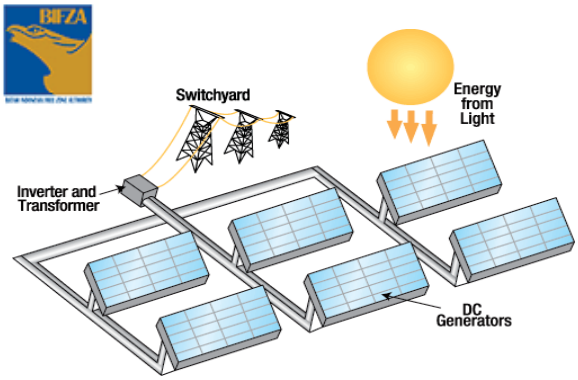
Integrated and continued application of preventive environmental practices and total productivity techniques to processes, products and services to increase efficiency and reduce risks to humans and environment

INSTITUT TEKNOLOGI BANDUNG
Centre for Resource Efficient and Cleaner Production Indonesia (CRECPI)
Green Mission & Green Technology Inside

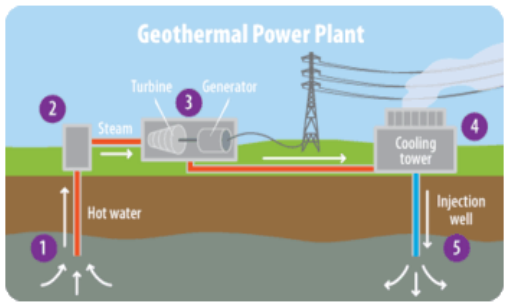
Funded by | Implemented by | In partnership with

In cooperation with:

Participants (9 companies):
PT. Ellite Packaging – PT. WIK Far East Batam – PT. Win Win Rubber Technologies – PT. Three Cast Indonesia – PT. Doelken Bintan – PT. Bredero Shaw Indonesia – PT. Citra Tubindo, Tbk – PT. Raajratna Wire – PT. Sri Indah Aluminium Extrusion



Solar

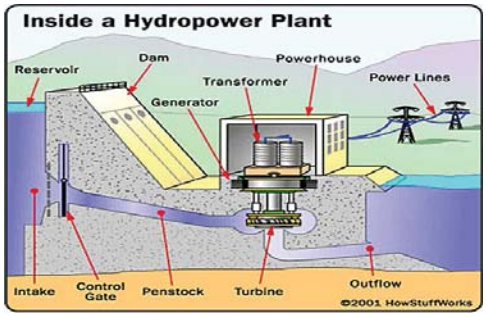


Geothermal

RENEWABLE ENERGY CONCEPT



Biomass



Hydropower



Wind

PILOT PROJECT PLANNING







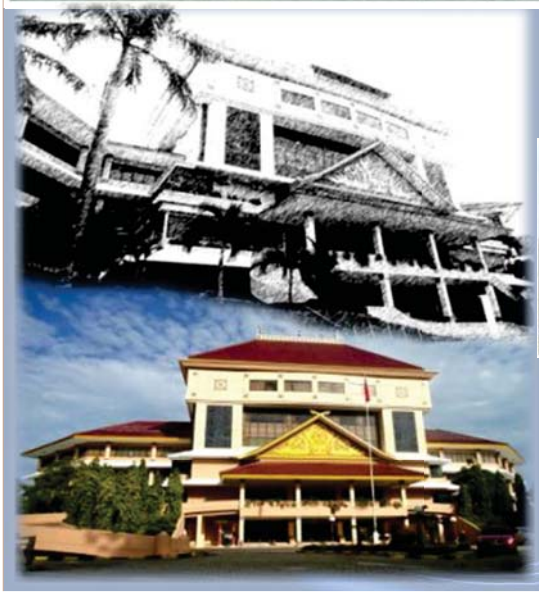


Pilot Project related to:	Implementation on:	Implemented by (phase 1):	Participants:	General Description:	Financing:
Water recycle;	2017	Nippon Koei	Industrial area (5)	Socialization → Sign of MoU (as Top Management Commitment) → Survey → DED → Implementation → Monitoring	Nippon Koei
Energy efficiency;		BIFZA	Hotel (5)		
Solid waste handling, etc.		Batam City	Mall (5)		
			Hospital and Sea Port (5)		

Thank You

BATAM
GREEN CITY ACTION PLAN













12,5 sea miles from Singapore

4.265 Km^2 of area
1.082 Km^2 of land

370 islands
most are small islands
Environmentally sensitive areas

2/3 of the area is design as FTZ

1,035 million inhabitants (2015)
Projected will be 1,3 millions in 2020

1,7 million foreign tourists / year
4 million domestic visitors / year

56% of GDP are from industry
26 % from trade and services









VISI PEMBANGUNAN PERKOTAAN NASIONAL

Kementerian PPN/ Bappenas

KOTA BERKELANJUTAN 2050

Kota Berkelanjutan dan Berdayasaing
untuk Kesejahteraan Masyarakat







Strong Neighboorhoods	Green Openspace	Smart Economy
Walkable	Green Waste	Smart People
Affordable	Green Transportation	Smart Governance
Comfortable	Green Water	Smart Mobility
Cultural	Green Energy	Smart Environment
Connectivity	Green Building	Smart Living

Membangun IDENTITAS PERKOTAAN INDONESIA berbasis karakter fisik, keunggulan ekonomi, budaya lokal

Membangun keterkaitan dan manfaat antarkota dan desa-kota dalam SISTEM PERKOTAAN NASIONAL berbasis kewilayahan

INDONESIA"S COMMITMENT
in COP 21 PARIS, on DECEMBER 2015

1. Climate change is a strategic and development challenge facing Indonesia.
2. Indonesia emits significant levels of GHG and its highly vulnerable to climate change.



G20 Meeting, 2009

↓

Perpres 61/2011

National Action Plan to Reduce Greenhouse Gas Emissions (RAN-GRK)

↓

SK Gub 498/2012 → **Pergub 44/2012**

Establishment of Team coordination to formulize RAD-GRK in Kepulauan Riau Province

Action Plan to Reduce Greenhouse Gas Emissions in Kepulauan Riau Province (RAD-GRK)

↓ ↑

Monitoring, Evaluating, Reporting RAD-GRK Kepulauan Riau Province

A 29% reduction in emissions by 2030 compared to business as usual, and will increase its reduction goal to 41%, conditional on support from international cooperation

IMPLEMENTATION RAN-GRK

Kementerian PPN / Bappenas

GHG emission reduction in 5 priority sectors : Forestry and peatland, agriculture, energy, industry and transport

The Implementation Progress on National Action Plan to Reduce Greenhouse Gas Emissions (RAN-GRK)

2010-2012	2013-2015	2015-2017	2017-2019	2020
1st phase: Preparation to implement by ministries and national agencies	**2nd Phase:** Implementation of RAN-GRK and Monitoring, Evaluating, Reporting	**3rd phase:** Change of Indonesia Government and Climate Change became one of issues in National Medium Term Development Plan 2015-2019 Review of RAN-GRK	**4th Phase:** RAN-GRK start to be verify	**5th Phase:** Mechanisms for Monitoring, Evaluating, Reporting of RAN-GRK along with its verification **5th Phase: achievement of GHG emissions reduction target (26%)**



BATAM TOWARDS GREEN & SMART CITY

ADB

Urban Solutions
MEMBER OF THE RMA GROUP

CRM Kementerian PPN/ Bappenas



Additional attributes:

- ***Green Air***
- ***Green Industry***

Figure 2: Indonesia's existing Green City concept (Source: Ministry of Public Works, Indonesia)

VISION

"Batam a Peaceful, Competitive, Modern, Prosperous and Dignified Worlds City"

1. To promote good governance in Batam
2. To create faithful and competitive local human resource and prosperous society
3. **To build Batam with environment-friendly design, modern infrastructure, and friendly green comfortable designed settlement based on national culture**
4. To strengthen the industrial sector, services, trade, tourism, transshipment, marine and agriculture in supporting local economy
5. To strengthen community-based economy by small, medium entrepreneurship and cooperatives which are synergized with the domestic industry and market
6. To boost the development of hinterland areas to support the economy of Batam







Strategic Issues 2016-2021

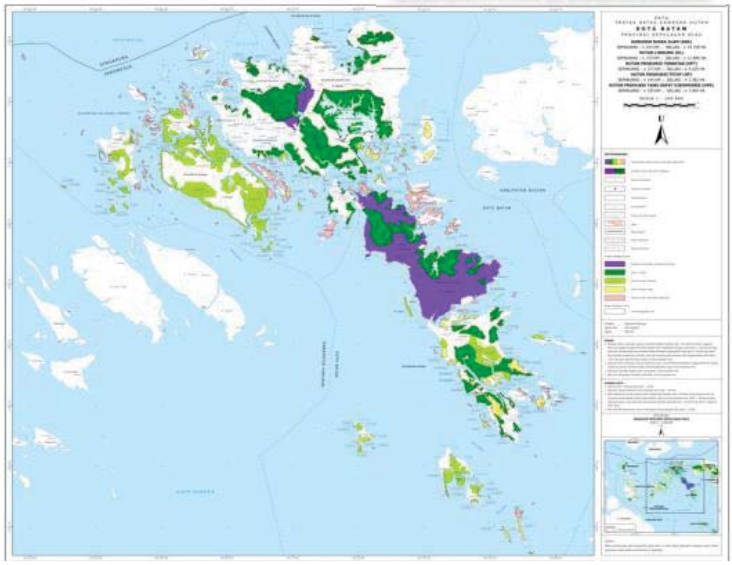
1. Economic growth
2. Education
3. Accessibility of health services
4. Tourism destination
5. Small and medium enterprises
6. Jobs
7. Sustainable Development
   - Contributes on MDGS and Post-2015 Development Agenda
   - Development with Smart and green city
8. MEA (Asean Economic Community)
9. Industry/ Manufacture
10. Science and Technology
11. Maritime

BATAM CITY'S FOREST AREA Refers to Minister of Forestry Decree Number 76/Menhut-II/2015

FOREST ZONE	BATAM	
	AREA (Ha)	%
Watershed/ protected forest	20,943.56	20.35
Production forest	2,342.78	2.28
Forest zone can be converted	4,099.81	3.98
Limited Production Forest	9,268.70	9.00
Conservation Forest (TWA)	901.62	0.88
Conservation Forest/TB	10,170.37	9.88
Total	**47,726.86**	**46.37**







BATAM GREEN CITY: PRIORITIZED PROGRAMS

Rank	Score	Program No.	Program	Program Attribute
1	6.910	9	Spatial Planning and Control	Green Planning & Design
2	6.585	14	Enhancement of Environmental Degradation and Pollution Control	Green Water & Waste
3	6.473	10	Management of Land Use	Green Planning & Design
4	6.465	15	Enhancement of Environmental Protection and Management Infrastructure	Green Planning & Design, Green Water & Waste
5	6.308	16	Enhancement of Environmental Mangement and Natural Resources Conservation	Green Open Space
6	6.205	12	Development, Maintenance, and Enhancement of Settlement and Housing Infrastructure	Green Planning & Design, Green Building & Community
7	5.839	4	Enhancement of Green Open Space Quality and Quantity	Green Open Space
8	5.828	13	Development, Quality Enhancement and Supervision of Building	Green Building
9	5.690	18	Development, Enhancement and Maintainance/Rehabilitation of Transportation Infrastructure	Green Transportation
10	5.687	8	Enhancement of Water Supply and Wastewater Management Performance	Green Water
11	5.675	19	Enhancement of Community Transportation Service	Green Transportation
12	5.468	11	Management and Supervision of Mining, Electricity, Oil-Fuel and Gas	Green Energy
13	5.425	7	Enhancement of Drainage Network & Flood Control	Green Water
14	5.352	5	Protection of water sources / dams and catchment areas	Green Water
15	5.292	1	Reduction of Domestic Solid Waste Generation	Green Waste
16	5.068	2	Reduction of Industrial Solid Waste Generation	Green Waste
17	5.061	6	Development of WWTP to reduce domestic waste	Green Water
18	4.888	3	Enhancement of Right of Way (ROW) and Median of Road as Green Open Space	Green Open Space
19	4.778	17	Enhancement of Security and Comfortability of Community Environment and Handling of Natural Disaster	Climate Change Mitigation & Adaptation

PROJECTS HAS BEEN CHOSEN

	PROJECTS BATAM GREEN CITY
1	Enhancement of Green Open Space Quality and Quantity
2	Reduction of Domestic Solid Waste Generation
3	Enhancement of Water Supply and Wastewater Management Performance
4	Development, Enhancement and Maintenance/Rehabilitation of Transportation Infrastructure
5	Development of WWTP to reduce domestic waste
6	Enhancement of Right of Way (ROW) and Median of Road as Green Open Space
7	Management and Supervision of Mining, Electricity, Oil-Fuel and Gas
8	Development, Quality Enhancement and Supervision of Building

	SHORT TERM	MEDIUM TERM	LONG TERM
1	**GREENARY:** -Active Park in Urban Area - Green lane in the main roads	-Active Park in every Districk - Green lane in secondary roads -Botanical garden	- Active park in every districk and residential - Green lane in all roads and area under the fly over - Botanical Garden, mangrove conservation and study centre
2	**TRANSPORTATION:** - Walkways and Cycle lane in CBD and main urban area - 6 corridor Semi-BRT	- Walkways and cycle lane in CBD and residential - 10 Corridor Semi-BRT	Walk ways and cycle lane in whole areas -BRT - LRT
3	**SOLID WASTE MNAGEMENT** -Sanitary landfill - bank sampah (garbage bank)	- Waste to Energy	- Waste to energy
4	**WASTE WATER MANAGEMENT** - Sludge Treatment Plant	-Sludge Treatment Plant -Batam Centre WWTP	-Sludge Treatment Plant -Batam Centre WWTP - 4 New Zona WWTP (Batu Ampar, Sagulung, Tanjungpiayu, Nongsa)
5	**Drinking Water** -6 reservoir	-6 reservoir - Operating Tembesi Estuary Dam - Development of Gong Estuary Dam - Developing SWRO in Belakang Padang (Small Island)	-6 reservoir - Operation of Tembesi Estuary Dam - Enhacement of of Gong Estuary Dam and other Dam in Rempang-Galang - SWRO in Belakang Padang and other small island
6	**ENERGY:** -Gas Power Plant (Panaran) - SPBG (Gas refilling station) natural gas for public transport and government vihicle -Gas pipeline distribution network -Solar Home System	- Gas Power Plant (Panaran and Tanjung Uncang) - SPBG (Gas refilling station natural) for public -Gas pipeline distribution network -Solar Home System	- Gas Power Plant (Panaran and Tanjung Uncang) - SPBG (Gas refilling station) natural gas for public transport and government vihicle -Gas pipeline distribution network -Solar Home System - Waste to energy
7	- Green building (government building)	Green building (government and public building)	Green building (government public building and industry)



- **BATAM CITY AND YOKOHAMA CITY concluded a Letter of Intent on technical cooperation for sustainable urban development**

Green Electricity and Energy Saving
leveraged by Renewable Energy Scheme

Environment Countermeasure Program
(Waste Treatment / Sludge Treatment / Air Pollution Problems etc.)

Disaster Management Program
(Smart City Infra Development in conjunction with Renewable Energy Scheme)

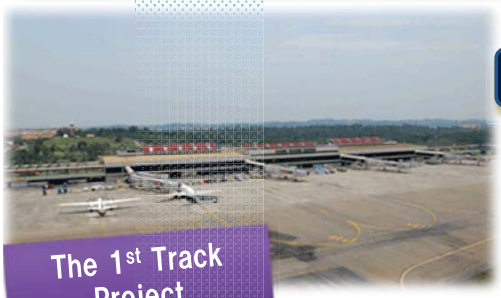
Urban Traffic Control Scheme



Smart Renewable Energy | Smart/Green Living/Working Place | Smart/Green Infrastructure | Smart Traffic & Transportation | Smart Urban Grid

Smart/Green Infrastructure: (Energy)

Phase approaching Project



Generation 1 ← Where we are

- **Energy-saving A/C System Project, supporting Eco-Airport Plan (iFORCOM)**

Generation 2



- **Energy-saving Ferry terminal Project**



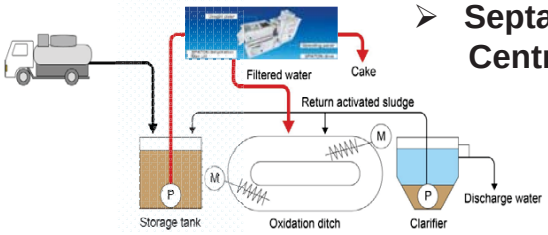
- **Energy-saving Hospital Project**

Smart/Green Infrastructure: (Wastewater)

Phase approaching Project

Where we are

Generation 1

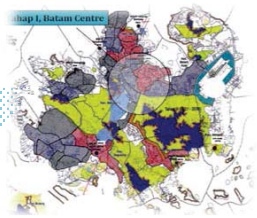


- Septage Pre-treatment for improving IPAL of Batam Centre with dehydrator “SPATON” (JUSTEC)



Generation 2

- Improving IPAL of Hang Nadim Airport for Eco-Airport



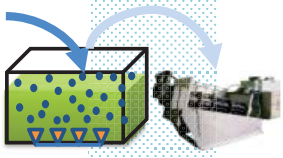
- Expanding to other IPALs

Smart/Green Infrastructure: Industry

Phase approaching Project

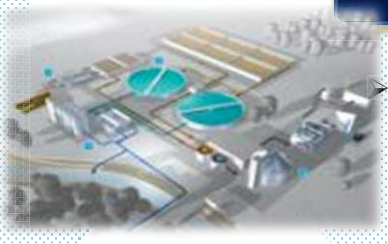
Where we are

Generation 1:



- Microbubble Flocculation Tank and “Volute” Dewatering Equipment, for PT. Desa Air Cargo (AMCON)

Generation 2



- High-efficiency Wastewater Treatment Project for Industrial Complexes, such as BATAMINDO, Panbil and Kabil

Smart/Green Living/Working Place : PT Desa Air Cargo

Phase approaching Project



Generation 1:

Where we are

- Roof-top PV System with Demand Control Implementation Project (FINETECH)

Generation 2:



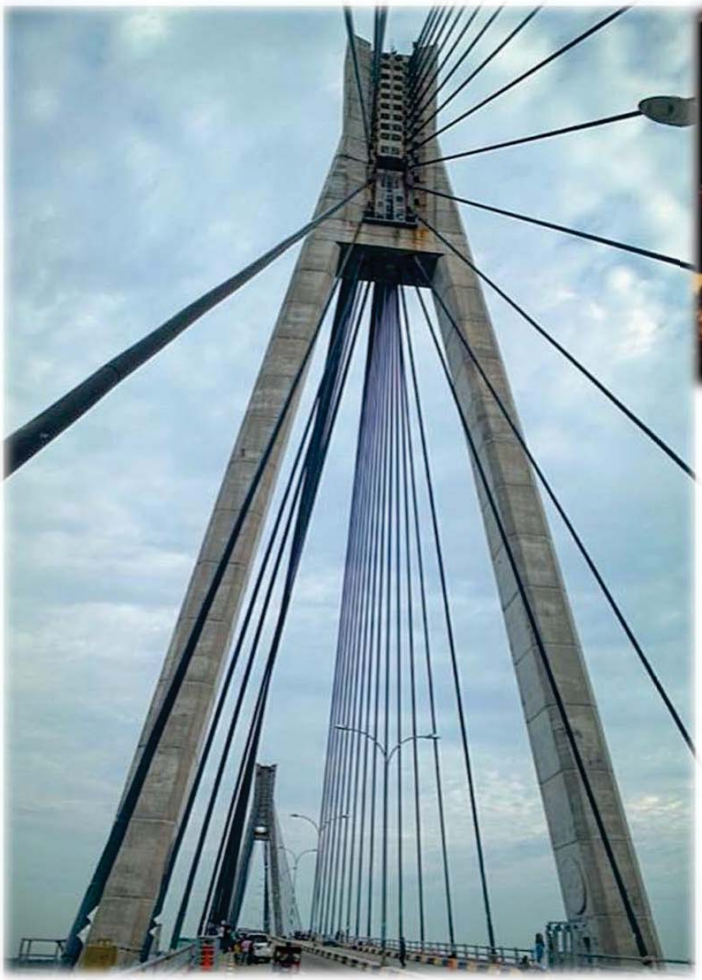


- Waste-to-Energy (Edible-oil Refinery) Project (FINETECH)
- PV System with Advanced Demand Control Implementation Project

Generation 3:



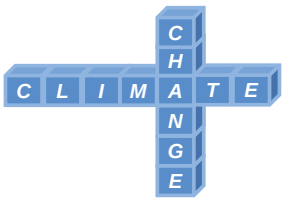
- Add-on Biomass (Waste)-based Power Generator with Advanced Demand Control Implementation Project





THANK YOU

NIPPON KOEI



Project Mapping

Project for Development JCM Projects
under City-to-City Collaboration
between Batam city and Yokohama city

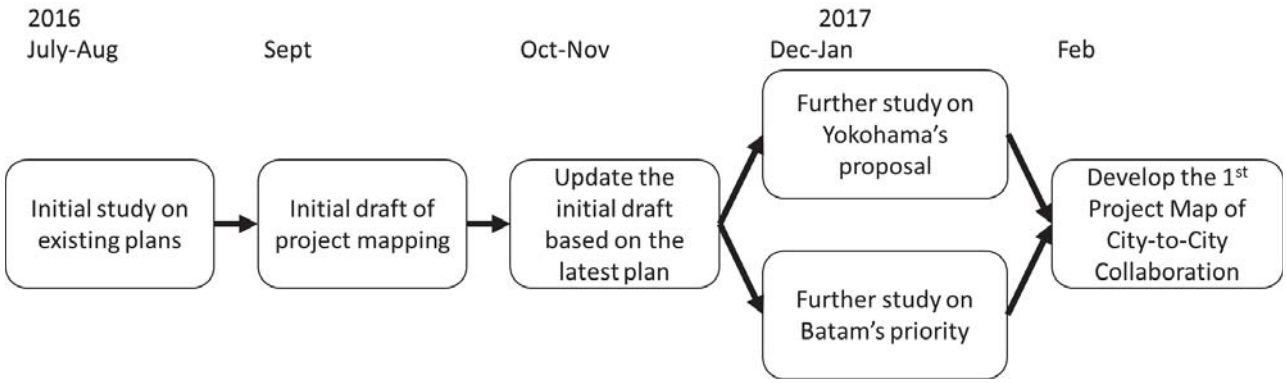
January 19, 2017

SAITo Tetsuya
Nippon Koei Co., Ltd.

Project Map

- A Tool to build **mutual understanding on the direction of city-to-city collaboration** between Batam and Yokohama
  - Needs of Batam towards green city
  - Green technologies and partners of Yokohama
- A tool enabling to **invite outside support more smoothly**, such as from Government of Japan (MoE, METI, JICA, etc.), Government of Indonesia (APBN, etc.), development banks and private investors

Project Map



- Draft RPJMD
- Green city program
- BIFZA's development strategy
- BIFZA's forthcoming project list

Project Map

- Draft RPJMD 2016-2020

  6 missions
  - Good Governance
  - Human Resource Development
  - City with Comfort
  - Strengthning and diversifying industry
  - Community development
  - Rural area development

- Green city program

Three pillars for Sustainable city 2015-2045



1. Green Open Space
2. Green Waste
3. Green Transportation
4. Green Water
5. Green Energy
6. Green Building
7. Resilience

1. Smart Mobility

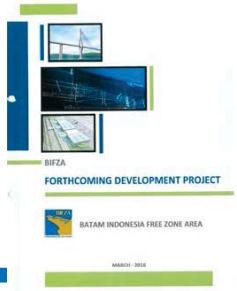
Project Map

- BIFZA's development strategy

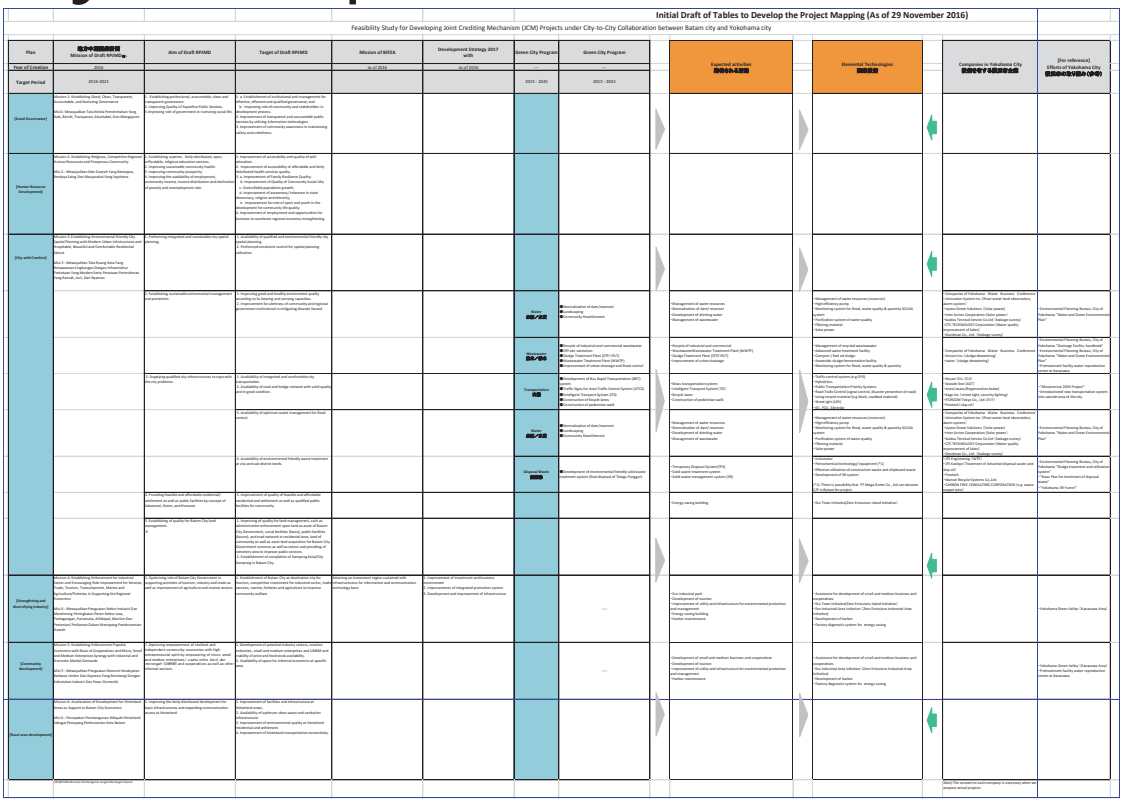




- BIFZA's forthcoming project list



Project Map

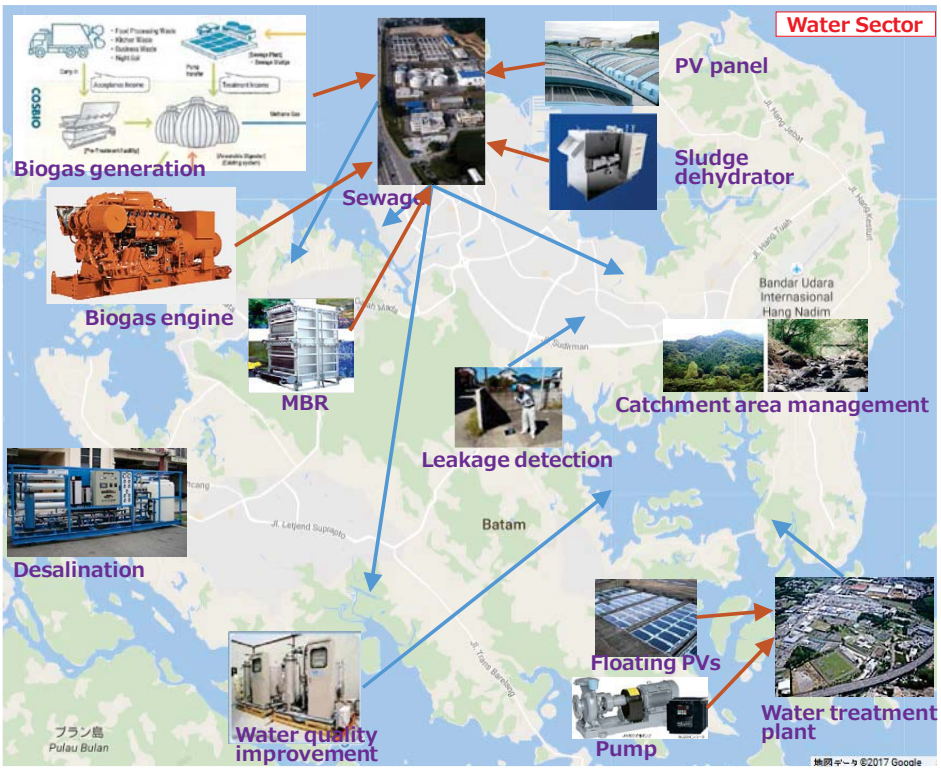


Project Map

ISSUEs in Batam → NEEDs in Batam → Technology and Experience in Yokohama → Potential scheme to realize the project

Sector	Issues	Technology
Water Resource	Water quality management in reservoir	Aeration Ozone treatment
	Desalination	MBR / etc
	Water recycling	MBR / etc
	Watershed conservation	Forest management with local people
Water purification	Water treatment plant	MBR / etc
Water distribution	Energy saving	High efficiency pumps
	Non revenue water	Leakage detection
Wastewater treatment	Capacity	Treatment plant (on-site/off-site)
	Energy	Biogas utilization
		Sludge treatment
Renewable energy	Energy consumption	PV / micro hydro

Project Map (Water sector solutions)



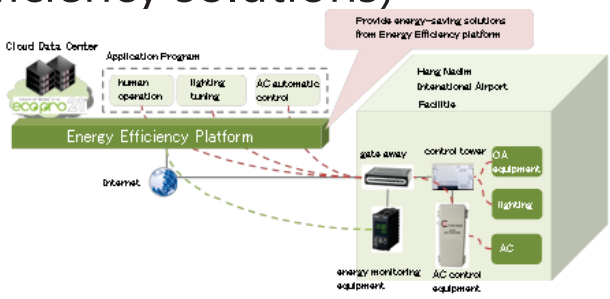
Project Map (Energy efficiency solutions)

Flagship Project with JCM financial support from MOEJ at the Hang Nadim Airport Terminal in 2016



Project Map (Energy efficiency solutions)

Phase approaching by JCM





Generation 1

- **Energy-saving A/C System Project, supporting Eco-Airport Plan (iFORCOM, BIFZA)**

Preliminary approval by GEC/MOEJ with JCM Financial Support



Generation 2

- **Energy-saving Ferry terminal Project (iFORCOM, BIFZA)**
- **Energy-saving Hospital Project (iFORCOM, BIFZA, CoB)**
- **Energy-saving Hotel Project (iFORCOM, Harris Hotels)**



erall progress of the study

Feasibility studies are on going in 2016

Project Map(Green Waste)

Phase approaching by JCM



Generation 1:

- **Roof-top PV System with Demand Control Implementation Project (FINETECH, PT Desa Air Cargo)**

Applied to GEC/MOEJ in next round of the quickest possible manner



Generation 2:

- **High efficiency thermal desorption Project for Ship Oil Sludge (FINETECH, PT Mega Green)**

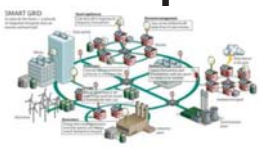
Feasibility studies are on going in 2016

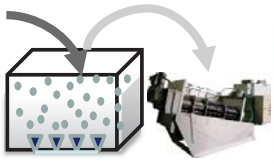


Generation 3:

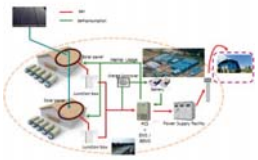
- **PV System with Advanced Demand Control Implementation Project**
- **Add-on Biomass (Waste)-based Power Generator with Advanced Demand Control Implementation Project**

Project Map(Smart and Green Island)




High efficient equipment, Thermal energy

CEMS/
Smart Urban Grid

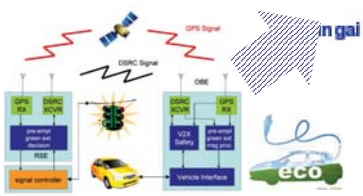




HEMS/BEMS





Smart Traffic & Transportation

Smart Renewable Energy

Attachment05
JCM seminar in Tokyo
(January 2017)

Project for Development JCM Projects under City-to-City Collaboration between Batam City and City of Yokohama

1) Energy saving: BIFZA
2) Energy saving: Batam City
3) Energy saving: Harris Hotel
4) Energy saving: Installation of high efficiency thermal desorption unit

January 23, 2017

SAITo Tetsuya
Nippon Koei Co., Ltd.

Contents

1. Introduction
2. F/S Result
3. Project Map
4. Toward Sustainable Collaboration

Objectives: city-to-city collaboration

- Our project aims to
  - promote of JCM project formulation and
  - support on Green City Programme in Batam

through city-to-city collaboration activities.

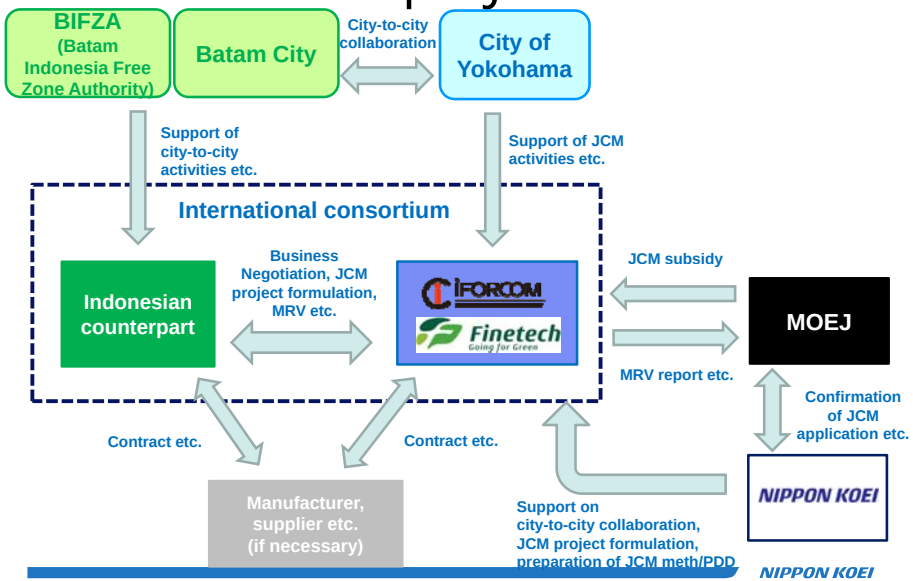
Advanced green (low carbon) products /technologies from Japanese entities

+

Sharing JCM experience and know-how

Supporting the Green City Programme in Batam in order to solve the current/urgent issues

Structure of the project



Targets of the project

- F/S on Energy Saving Solutions
  - BIFZA (6 ferry terminals and 1 hospital)
  - Batam City (7 hospitals)
  - Harris Hotel (19 hotels)
- F/S on High Efficiency Thermal Desorption Unit
  - PT MEGA GREEN TECHNOLOGY
- Development of Project Map

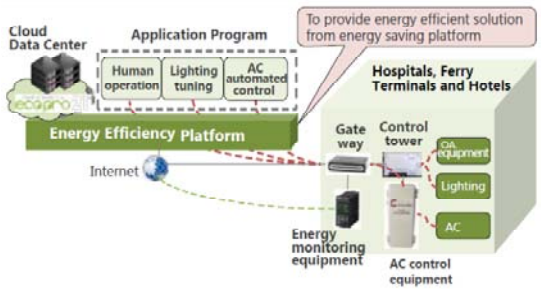
Major events (*including plans*)

Month	Progress
May, 2015	LoI for technical cooperation between Batam & Yokohama
Jul, 2016	Kick-off meeting in Batam
Aug, 2016	Establishment of Taskforce for City-to-City Collaboration
Oct, 2016	Site tour in Japan City-to-City Collaboration Seminar in Kitakyusyu
Nov, 2016	COP22 in Morocco (Presentation by Yokohama city) Batam Investment Seminar in Yokohama
Dec, 2016	Study on Project Map
Jan, 2017	Final seminar in Batam *City-to-City Collaboration Seminar in Tokyo*
Feb, 2017	*Finalization of project map (1st version) and F/S plan*
Mar, 2017	*Reporting and Application for F/S 2017*
Apr-May, 2017	*Application for Model Project 2017*

- Each F/S was conducted in parallel with these events

F/S on Energy Saving Solutions

- Technology of iForcom
  - Installation of the monitoring system for electricity usage.
  - Operational improvement on electricity usage
  - Inverter control of the chiller pump



F/S on Energy Saving Solutions

- Innovativeness of iForcom's Technology
  - Development of (1) the rule of "energy efficiency improvement by human operation (AC, lighting, etc.)" and (2) the incentive scheme based on behavioral science to follow the rules.
  - With various vendors, energy efficiency platform can be developed such as active automatic control of AC by information & communication technology.
- Practicability of the technology
  - iForcom introduced the technology in more than 2,500 facilities in Japan.







F/S on Energy Saving Solutions



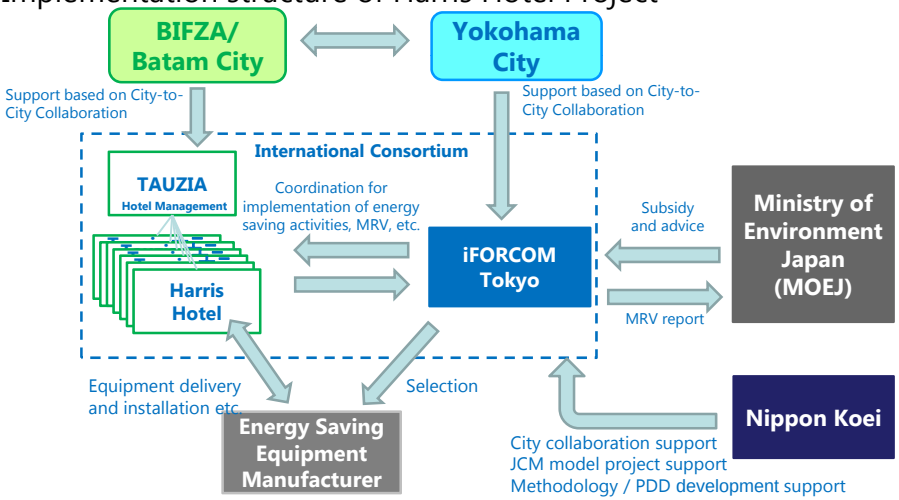
F/S on Energy Saving Solutions

- Current result
  - BIFZA (6 ferry terminals and 1 hospital)
  - Batam City (7 hospitals)
  - Harris hotel (21 hotels)

F/S	Survey target facilities	Prospect of JCM implementation	Remarks
BIFZA	6 ferry terminals and hospital	2 ferry terminals	Implementation request from 2 ferry terminals (relatively larger ones)
Batam City	7 hospitals	Nil	Desipite good potential, they prioritize stable energy and other facilities to energy saving
Harris hotel	21 hotels	19 hotels	Interested. 2 are difficult in terms of operation and maintenance

F/S on Energy Saving Solutions

Implementation structure of Harris Hotel Project



F/S on Thermal Desorption Unit

- Technology of Finetech
  - Installation of the high-efficiency and larger capacity thermal desorption unit to treat oil sludge generated from tanker ship cleaning.



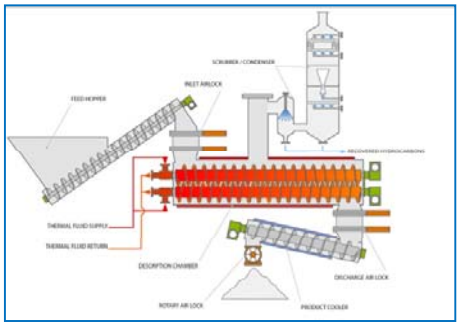


Image of Thermal desorption Unit

F/S on Thermal Desorption Unit

- Innovativeness of Finetech's Technology
  - **Capacity of treatment is significantly expanded** compared with conventional rotary kiln.
  - Recovered oil can be also used as the fuel to run the thermal desorption unit, which result in **reducing the operation cost**.
  - With the **dedicated monitoring and control system** developed by Finetech, efficiency of the thermal desorption unit will be maximized.
- Practicability of the technology
  - Thermal desorption units (without dedicated monitoring and control system) are used in **Singapore** and **China** where ship building and maintenance are conducted.

F/S on Thermal Desorption Units

Current Status



Study on minimizing waste



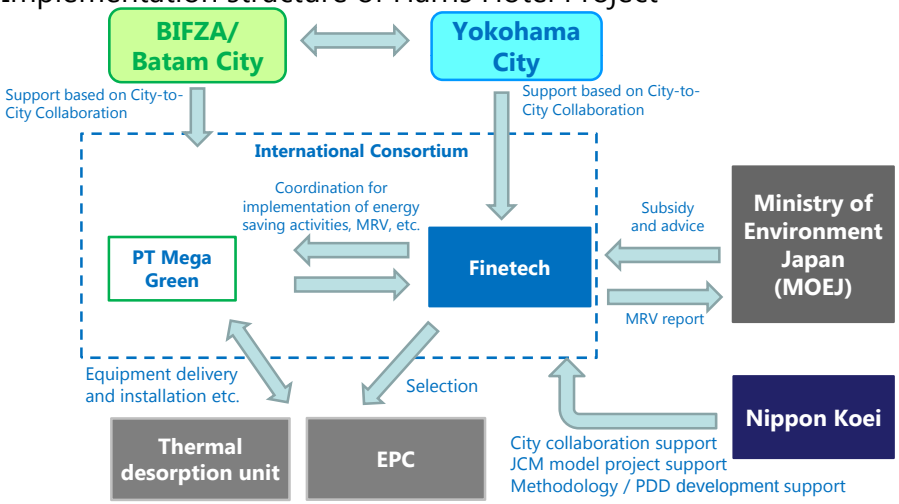
Experiment and Analysis





F/S on Thermal Desorption Units

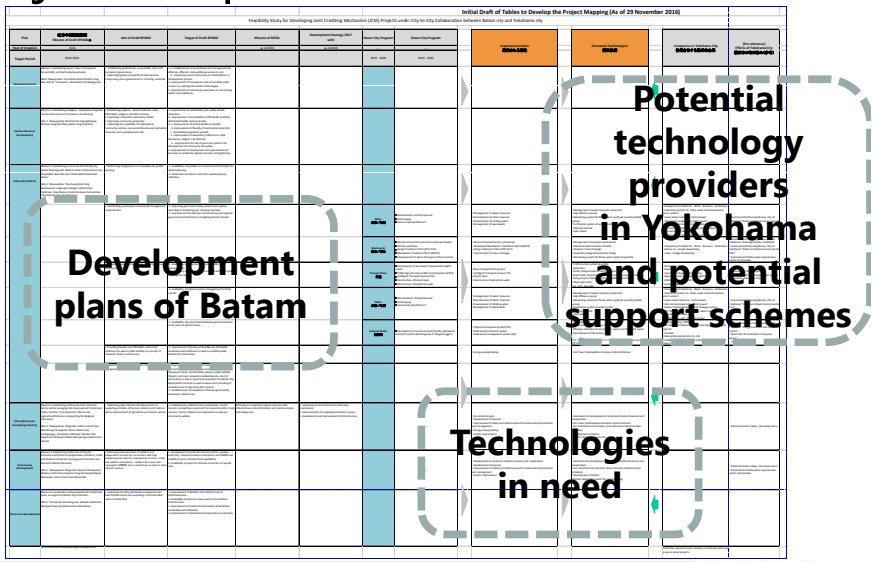
Implementation structure of Harris Hotel Project



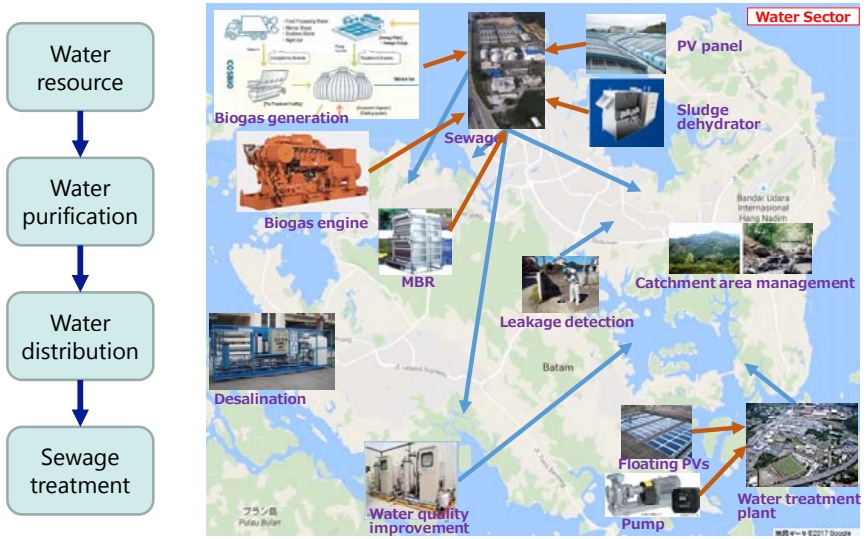
Project Map

- A Tool to build **mutual understanding on the direction** of city-to-city collaboration between Batam and Yokohama
  - Needs of Batam towards green city
  - Green technologies and partners of Yokohama
- A tool enabling to **invite outside support more smoothly**, such as from Government of Japan (MoE, METI, JICA, etc.), Government of Indonesia (APBN, etc.), development banks and private investors

Project Map



Project Map (water sector)



Toward Sustainable Collaboration

1. Strengthening City-to-City Collaboration by **inviting BIFZA** into the framework of LoI between City of Yokohama and Batam City
2. Implementing **projects** which are formed through the F/S and proposing new **F/S** in line with **Project Map**
3. Collaborating for setting the **policies and targets** for Batam to be **Green and Smart City**

Attachment06
Project Map

Tables of the Project Map (As of 2 March 2017)

Feasibility Study for Developing Joint Crediting Mechanism (JCM) Projects under City-to-City Collaboration between Batam city and Yokohama city

GOAL	PLAN	RPJMD(※2)	BIFZA		Batam City		Expected activities	Elemental Technologies	Companies in Yokohama City	[For reference] Efforts of Yokohama City	Candidate of F/S in FY2017
		Target of Draft RPJMD	Development Strategy 2017	BIFZA Project Pipeline	Green City Program	Batam Green City Action Plan					
	Source	Draft RPJMD 2016-2021	Development progress of Batam published by BIFZA	Presentation of BIFZA (final seminar etc)	Green City Program (2015-2045)	Presentation of Batam City (final seminar etc)					
Green City	Green Planning	- Availability of qualified and environmental-friendly city spatial planning. - Performed consistent control for spatial planning utilization	4. Regulation and Institution	- (Water treatment master plan) - Waste water manegement plan	- Green planning and design	- Spatial Planning and Control - Management of Land Use - Enhancement of Environmental Protection and Management Infrastructure - Development, Maintenance, and Enhancement of Settlement and Housing Infrastructure	・Sharing knowledge/ experience between Batam and Yokohama ・Collaboration to set target/plan	・Sustainable landuse planning ・Promotion of environmental activities ・Incentive scheme	・City of Yokohama	・CASBEE Yokohama ・City of Yokohama Master Plan	---
	Green Water	- Availability of optimum clean water and sanitation infrastructure.	---	- Water recycling - Sea water desalination - BATAM WWTP (Phase 2)	- Normalization of dam/reservoir - Landscaping - Community Resettlement - Recycle of industrial and commercial wastewater - Off-site sanitation - Sludge Treatment Plant (STP/ IPLT) - Wastewater Treatment Plant (WWTP) - Improvement of urban drainage and flood control	- 6 reservoirs - Operating Tembesi Estuary Dam - Development of Gong Estuary Dam -Developing SWRO in Belakang Padang (Small Island) - Sludge Treatment Plant - Batam Centre WWTP - 4 New Zone WWTP (Batu Ampar, Sagulung, Tanjungpiayu, Nongsa)	・Management of water resources ・Normalization of dam/ reservoir ・Development of drinking water ・Management of wastewater ・Water recycling ・Recycle of industrial and commercial ・Waste Water Treatment Plant (WWTP) ・Sludge Treatment Plant (STP/ IPLT) ・Improvement of urban drainage	・Management of water resources ・High efficiency pump ・Monitoring system for flood, water quality & quantity SCADA system ・Purification system of water quality ・Filtering material ・Solar power ・Water recycling ・Seawater desalination system ・ Water purification ・water leakage detection ・Management of recycled Waste Water ・Advanced water treatment facility ・Compost / fuel od sludge ・Anaerobic sludge fermentation facility	・Companies of Yokohama Water Business Conference ・Unimation System Inc.（River water level observation, alarm system） ・Uyeno Green Solutions（Solar power） ・Inter Acrion Cooperation (Solor power） ・Suidou Tecnical Service Co.Ltd（leakage survey） ・CTC TECHNOLOGY Corporation（Water quality improvement of lakes） ・Goodman Co., Ltd.（leakage survey） ・Hitachi (Seawater desalination system, Water recycling, Water purification) ・Suido Technical Service （water leakage detection）	・Environmental Planning Bureau, City of Yokohama "Water and Green Environmental Plan" ・Environmental Planning Bureau, City of Yokohama "Drainage Facility handbook" ・Environmental Planning Bureau, City of Yokohama "Water and Green Environmental Plan" ・Pretreatment facility water reproduction center at Kanazawa	・Wastewater treatment or water recycling for industrial park (Hitachi) ・Water leakage ditection (STS)
	Green Waste	Availability of environmental-friendly waste treatment at city and sub-district levels.	---	Industrial waste treatment	- Development of environmental friendly solid waste treatment system (final disposal of Telaga Punggur)	- Enhancement of Environmental Degradation and Pollution Control - Reduction of Domestic Solid Waste Generation - Reduction of Industrial Solid Waste Generation	・Temporary Disposal System(TPS) ・Solid waste treatment system ・Solid waste management system (3R) ・Development of small and medium business and cooperatives	・Incinerator ・Petrochemical technology/ equipment ・Effective utilization of construction waste and shipboard waste ・Development of 3R system ・Waste to energy	・JFE Engineering（WTE） ・JFE Kankyo（Treatment of industrial disposal waste and slop oil） ・Finetech ・Mansei Recycle Systems Co.,Ltd. ・CARBON FREE CONSULTING CORPORATION（e.g. waste copper wire） ・JFE Kankyo (Waste to energy)	・Environmental Planning Bureau, City of Yokohama "Sludge treatment and utilization system" ・"Basic Plan for treatment of disposal waste" ・"Yokohama 3R Yume!"	TBD
	Green Industry	[Strengthning and diversifying industry] Establishment of Batam City as destination for tourism, competitive investment for industrial sector, trade services, marine, fisheries and agriculture [Community Development] Development of potential	1. Improvement of investment and business environment 2. Improvements of integrated promotion system 3. Development and improvement of infrastructure	- Industrial waste treatment - Batam e-GOVERNMENT (phase 2) - Eco industry park (Batamindo) - IT service centre	---	---	・Eco industrial park ・Development of tourism ・Improvement of utility and infrastructure for environmental protection and management ・Energy saving building ・Harbor maintenance	・Assistance for development of small and medium business and cooperatives ・Eco Town Initiative(Zero Emissions Island Initiative） ・Eco Industrial Area Initiative（Zero Emissions Industrial Area Initiative) ・Development of harbor ・Factory diagnostic system for energy saving ・ICT ・Free wifi with LED streetlight	・Hitachi (Seawater desalination system, Water recycling, Water purification) ・NEC （ICT） ・STANLEY ELECTRIC（Free wifi with LED streetlight）	・Yokohama Green Valley（Kanazawa Area） ・Pretreatment facility water reproduction center at Kanazawa	・Replacement of Street Lights with LED Technologies in commercial areas in Batam (Finetech, STANLEY ELECTRIC) ・Comprehensive Waste Water Treatment for BATAMINDO Industrial Park in Batam (Finetech) ・Demand Response Control for Base Load Power Plant in the BATAMINDO Industrial Park (Finetech)
	Green Transportation	- Availability of integrated and comfortable city transportation. - Availability of road and bridge network with solid quality and in good condition.	---	- TOLL ROADS (Phase 1) - BATAM LIGHT RAIL TRANSIT (LRT) - Development the existing Hang Nadim Airport(terminal2) to reach an ultimate capacity of 32 million passengers and 1.6 million ton of general cargo. - Batam Bintan Bridge - Development the existing SEKUPANG CARGO PORT - Development the existing Cargo Terminal of	- Development of Bus Rapid Transportation (BRT) system - Traffic Signs for area Traffic Control system (ATCS) - Intelligent Transport system (ITS) - Construction of bicycle lanes - Construction of pedestrian walk	- Walkways and Cycle lane in CBD and main urban area/ in whole areas in the future - 6-10 corridor Semi-BRT	・Mass transportation system ・Intelligent Transport System（ITS） ・Bicycle lanes ・Construction of pedestrian walk	・Traffic control system (e.g. GPS) ・Hybrid bus ・Public Transportation Priority Systems ・Road Traffic Control (signal control, disaster prevention of road) ・Using recycle material (e.g. block, roadbed material) ・Street light (LED) ・Free wifi with LED streetlight ・EV、FCV、Electrike ・Heat insulating coating structure & Solar panel	・Nissan（EV、FCV） ・Seaside line（AGT） ・Anest Iwata (Regeneration brake) ・Kaga Inc.（street light, security lighting） ・iFORCOM Tokyo Co., Ltd.（EV?） ・Finetech（slop oil） ・STANLEY ELECTRIC（Free wifi with LED streetlight） ・Hitachi (Seawater desalination system, Water recycling, Water purification) ・AGC Asahi Glass (coating film, paint, Glass Integrated PV: GIPV for sound wall or ceiling)	・"Minatomirai 2050 Project" ・Introduction of new transportation system into seaside area of the city	・Replacement of Street Lights with LED Technologies in commercial areas in Batam (Finetech, STANLEY ELECTRIC)
	Green Building	- Improvement of quality of feasible and affordable residential and settlement as well as qualified public facilities for community.	---	---	- Green building	- Development, Quality Enhancement and Supervision of Building - Development, Maintenance, and Enhancement of Settlement and Housing Infrastructure	・Energy saving building	・Eco Town Initiative(Zero Emissions Island Initiative） ・ICT ・Free wifi with LED streetlight	・iFORCOM (energy saving system) ・ Finetech (PV) ・AGC (PV, Heat insulating coating structure & Solar panel)	・CASBEE Yokohama	・Standardization of green buildings in Batam – Energy saving solutions for Shopping Mall / Super Market (iForcom/AGC/ Finetech) ・Standardization of green buildings in Batam – Energy saving solutions for Office Building (iForcom/AGC/ Finetech)

(※2)RPJMD:Rencana Pembangunan Jangka Menengah Daerah

Attachment07
"BATAM ISLAND
INFRASTRUCTURE PROJECTS"

BATAM ISLAND
INFRASTRUCTURE PROJECTS

Trading Center



Industrial Region



Transshipment



Tourism



BATAM INDUSTRIAL DEVELOPMENT AUTHORITY
BIDA Bldg. BATAM CENTER
Telp. : +62778 462262 Fax: +62778 462259
Web: http://www.batam.go.id


40°
60°
80°
100°
120°
140°
Russia
Lake Baikal
Sea of Okhotsk
Ukraine
Kazakhstan
Aral Sea
Lake Balkhash
Mongolia
Georgia
Black Sea
Uzbekistan
Kyrgyzstan
Armenia
Turkey
Turkmenistan
Tajikistan
Azerbaijan
North Korea
Sea of Japan
40°
Syria
Leb.
Is.
Iraq
Iran
Afghanistan
China
Yellow Sea
South Korea
Japan
Jordan
Kuwait
East China Sea
Pakistan
Nepal
Bhutan
Bahrain
Qatar
Egypt
Saudi Arabia
A.E.
Oman
Bangladesh
Tropic of Cancer
Oman
India
Myanmar
Hong Kong (U.K.)
Taiwan
Laos
Philippine Sea
20°
Red Sea
Arabian Sea
Sudan
Bay of Bengal
Eritrea
Yemen
Thailand
Philippines
Andaman Islands (India)
Vietnam
Djibouti
Gulf of Aden
Socotra (Yemen)
Lakshadweep (India)
Andaman Sea
Cambodia
South China Sea
Somalia
Gulf of Thailand
Ethiopia
Sri Lanka
Nicobar Islands (India)
Brunei
Batam
Malaysia
Maldives
Singapore
Batam
Kenya
0°
Papua New Guinea
Tanzania
Indonesia
Indian Ocean
Mozambique
Madagascar
20°
Tropic of Capricorn
Australia

LIST OF BATAM'S FORTHCOMING INFRASTRUCTURE PROJECTS

1. General Cargo and Container Port Batu Ampar
2. Electricity
3. Industrial Park Tanjung Uncang
4. International Convention Center
5. Kabil Container Port
6. New International Hospital
7. Polytechnic
8. Wastewater Treatment System
9. Batam Intelligent Island
10. Batam Public Gas Facility

1. GENERAL CARGO AND CONTAINER PORT OF BATU AMPAR

Background:

- Batam as an area for free port, industries, and tourism, plays a very important role in the development of Indonesia. At the end of 2002, value of exported goods from Batam has reached US$ 5.89 billion. These are coming from about 611 foreign manufacturing plants.
- The Batu Ampar Port is the main seaport of the island, serving the very busy industrial activities, with the existing capacity of 70,000 TEU's container (actual demand is estimated to reach 200.000 TEU's, but cannot be served due to the limited facilities) and 3,000,000 ton of general cargo per year
- The number of foreign investor in Batam is increasing and by the end of 2007 there will be around 950 foreign investment companies. At that time, the port has to be ready to ship all goods for export destination.
- There is a high demand for the extension of Batu Ampar Port to accommodate the rising volume of cargo and container in line with the growth of foreign investment. Otherwise, Batu Ampar will become congested and will result in the decrease the port service.

Objective and Goal:

- To develop the existing Batu Ampar Port.
- The goal is to have a capacity of 900.000 TEU's (Phase I) and an ultimate container capacity of 2,000,000 TEU's and 5,000,000 ton of general cargo.

Location:

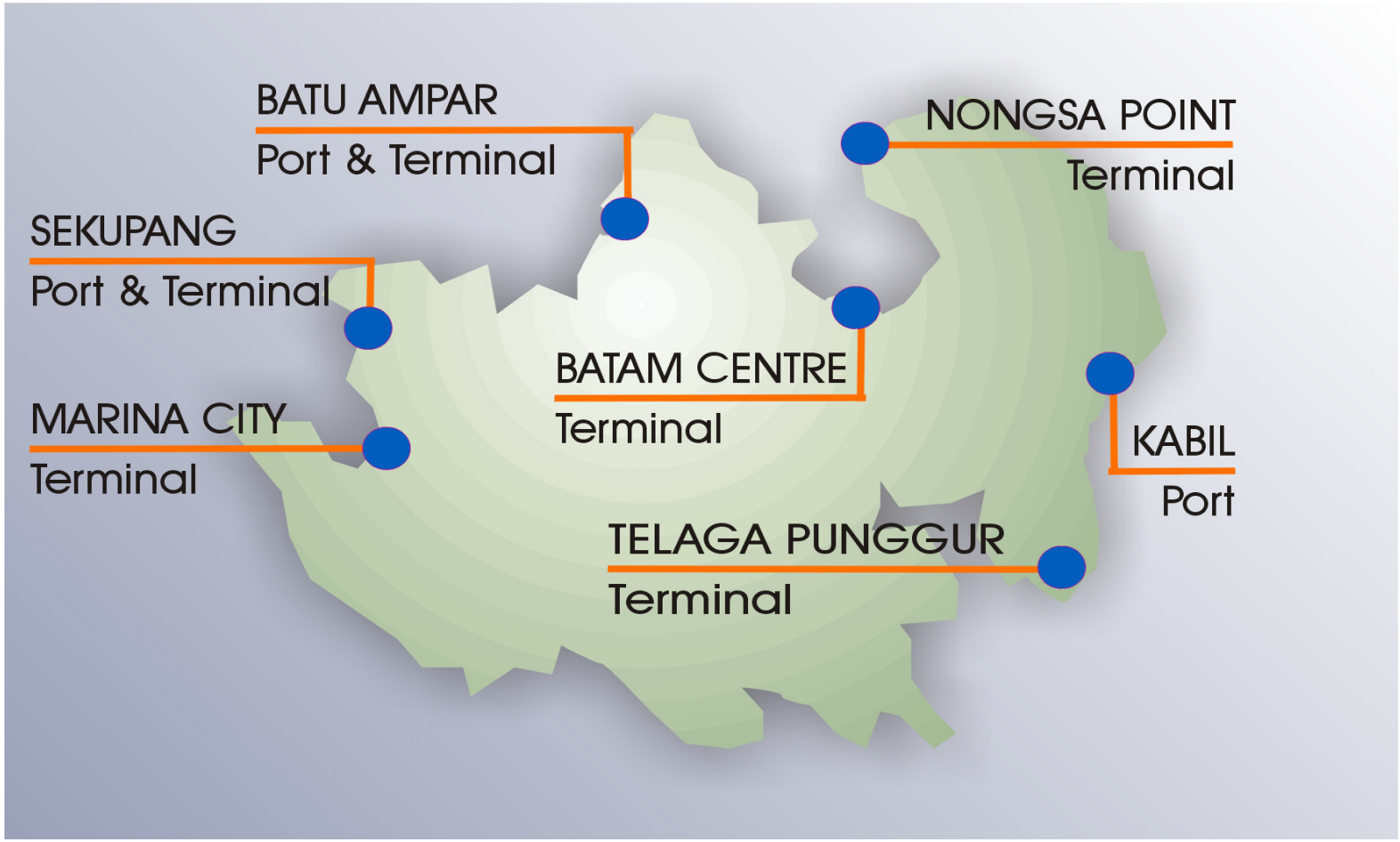
- Geographically, Batu Ampar Port has a very strategic position on the international ship route, and located close to Singapore (18 km to the South of Singapore).

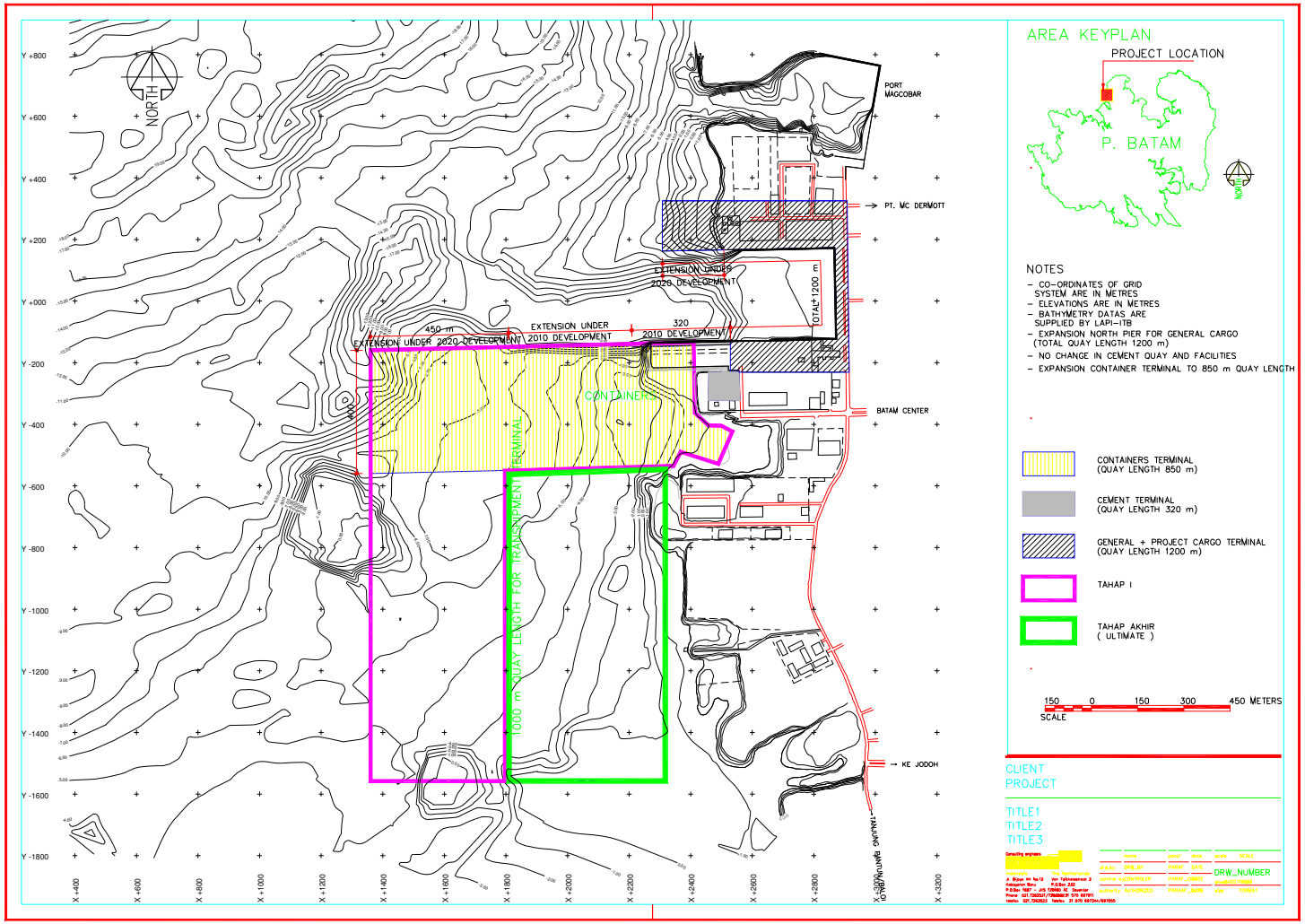
Project Accomplishment:

- Port construction shall commence in 2007 (Phase I) and ultimate stage will take place in 2005.

Investment cost:

- Investment cost is estimated to reach US$ 105 million (phase I) covering the works of (among others):
  - Dredging
  - Container wharf
  - Reclamation
  - Offices
  - Gentry crane


BATU AMPAR
Port & Terminal
NONGSA POINT
Terminal
SEKUPANG
Port & Terminal
BATAM CENTRE
Terminal
MARINA CITY
Terminal
KABIL
Port
TELAGA PUNGGUR
Terminal



AREA KEYPLAN

PROJECT LOCATION

NOTES

- CO-ORDINATES OF GRID SYSTEM ARE IN METRES
- ELEVATIONS ARE IN METRES
- BATHYMETRY DATAS ARE SUPPLIED BY LAPI-ITB
- EXPANSION NORTH PIER FOR GENERAL CARGO (TOTAL QUAY LENGTH 1200 m)
- NO CHANGE IN CEMENT QUAY AND FACILITIES
- EXPANSION CONTAINER TERMINAL TO 850 m QUAY LENGTH

CONTAINERS TERMINAL (QUAY LENGTH 850 m)

CEMENT TERMINAL (QUAY LENGTH 320 m)

GENERAL + PROJECT CARGO TERMINAL (QUAY LENGTH 1200 m)

TAHAP I

TAHAP AKHIR (ULTIMATE)

150 0 150 300 450 METERS

SCALE

CLIENT

PROJECT

TITLE1

TITLE2

TITLE3

DRW_NUMBER

2. ELECTRICITY

Background:

- The development plan of gas piping from Asamera (Jambi) to Singapore via Batam, which is scheduled to be completed in October 2003, makes the possibility of using gas turbine generators.
- Considering the availability of fuel in Batam, it is most likely that the generator to be constructed will be fueled by gas and coal.
- Based on the load growth, it is projected that in the next 5 years, Batam shall have additional capacity of 230 MW, with the growth of 20% per year which will require higher capacity generators. It is estimated that 60 MW will be generated by gas and 2 x 50 MW generated by steam, all of which will be provided by PLN – Batam in corporation with private companies (PLN Incorporate), while the rest will be provided fully by private companies.
- Current proportion of electricity in Batam: PLN – Batam 138 MW and Private 220 MW.

Pricing (US$ 1 = Rp. 7500,- and SIN$= Rp. 4600)

Current price of electricity in Batam is as follows:
Batam:

- Batamindo Industrial Estate (private) : US$ 0.09 – 0.1 per KWh
- Kabil Industrial Estate (private) : Rp. 450,-/ KWh or US$ 0.06/ KWh
- PLN/ Government (diesel) ±Rp. 625,- / KWh or US$ 0.06 / KWh

Investment cost:

Additional demand for electricity is estimated to reach 100 MW (with the investment value of US $ 55 million), with coal and it is planned to operate in 2004.

3. INDUSTRIAL PARK IN TANJUNG UNCANG

Background

- There are 16 industrial parks located in Batam and currently in operation. Among these, the biggest industrial park, Batamindo, has almost reached its full capacity utilization (90 %).
- Average growth at industry sector in the last five years is 6% per year.
- There are 611 foreign companies in Batam and estimated projection is 950 companies in 2007.

Objective and Goal

- To facilitate plants and buildings to accommodate both foreign and local investors who wish to invest in the small, medium and large industries.

Location

- The new industrial park is planned to be located at Tanjung Uncang – Batam with total area of 200 Ha.

Projection

- The rapid international and regional economic growth is expected to increase the industrial relocation in Batam island.
- The projection of industry in a five years later are :

  The first year : 50 industries
  The second year : 144 industries
  The third year : 170 industries
  The fourth year : 197 industries
  The fifth year : 224 industries

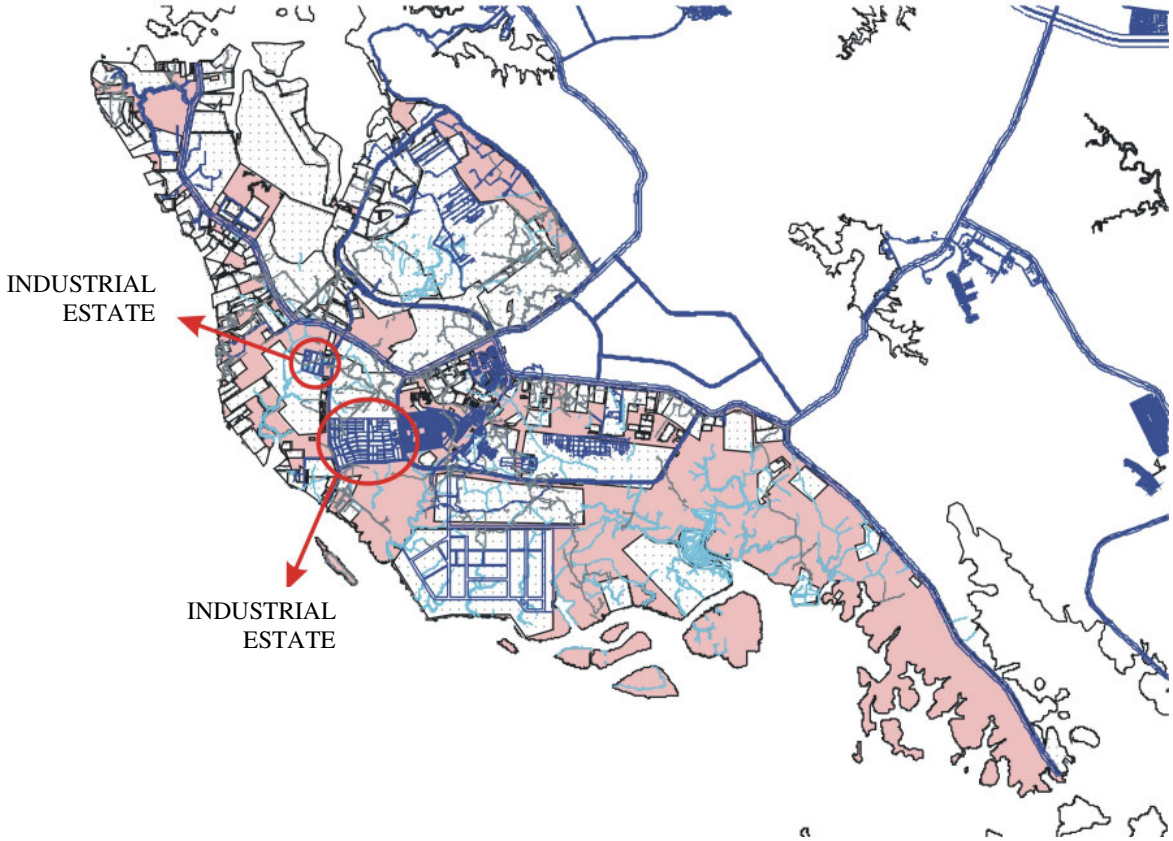
Activities Project

- The main activities of this project are : detail engineering design, construction of factory, road, electricity, water (including pipe line), sewage (pipe and waste water treatment plant), drainage, telecommunication.

Investment Cost

- Investment cost is estimated to reach US$ 300 million.

LOCATION OF INDUSTRIAL ESTATE



4. INTERNATIONAL CONVENTION CENTER

Background:

As a growing industrial area and tourist destination, the city of Batam becomes attractive from time to time.
There is no adequate and representative international convention center.
Such center could accommodate with art and cultural events such as theaters and hotel.
An international convention center is needed with the facilities of Hotel, Marina and visitor center.

Objective:

To provide and develop facilities for conferences.
To provide facilities for art and cultural events, at local as well as international level.
To facilitate for promotion and information activities for the tourism and marketing of Barelang.
To provide accommodation for the participants of workshop, seminar and conference.
To facilitate marine tourism activities (theme park, recreation club, botanical/ agricultural garden, etc.).

Location:

- International Convention Center Barelang is located at Batam island, having a beautiful view at the side of the bridge between Batam and Tonton islands.

Projection:

The main auditorium will accommodate 2500 people per event, while the small auditorium can accommodate up to 500 people. The total area of the convention center shall reach 50,000 sq.m. Five-star Hotel shall consist of 500 rooms.

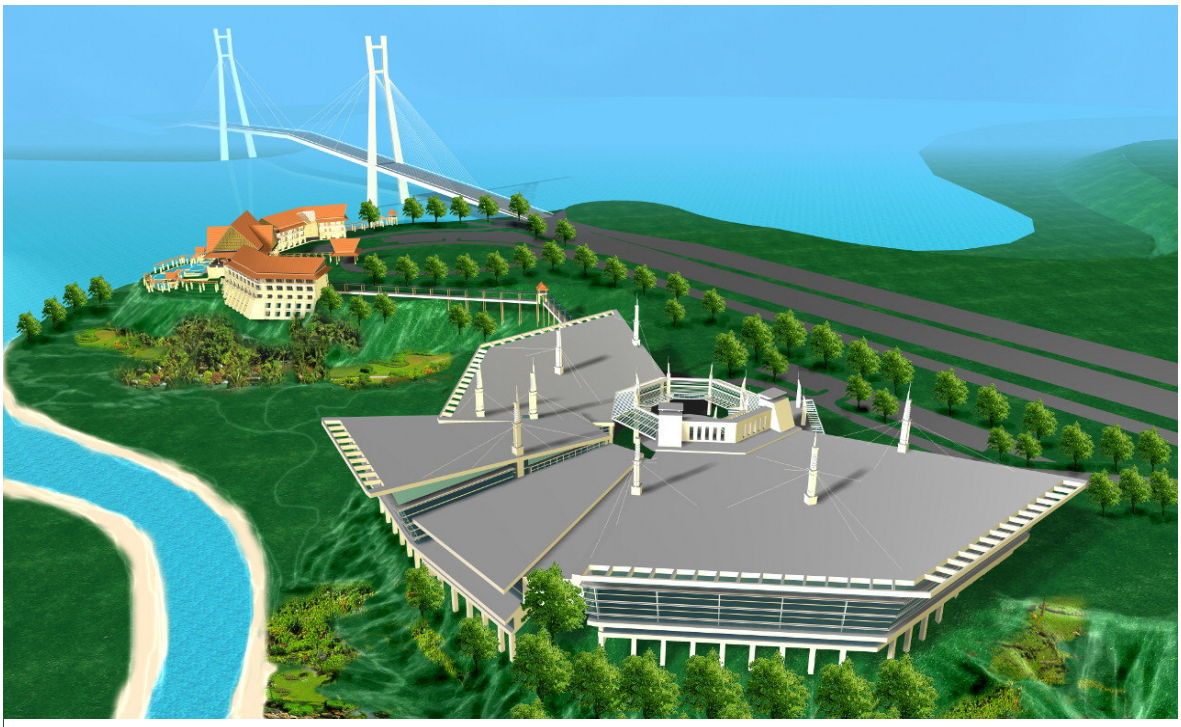
Project Accomplishment:

- The project shall take 2 years to complete (including the Detail design works).

Investment cost:

- Investment cost for the first stage is estimated to reach US$ 36 million, covering the works of (among others):

Convention center	- US$ 21 million
Hotel	- US$ 15 million





5. KABIL CONTAINER PORT

Background:

- Batam Island is designated to be a transshipment container port.
  Many studies have been conducted to develop Kabil container port. The latest study recommends the construction of Kabil Container Port at Kabil.

Objective and Goal:

To serve the import and export activities from Batam Island and Indonesia in general.
The goal is the construction of Kabil Container Port that shall have ultimate capacity of more than 5 million TEU's.

Location:

- Kabil Port is planned to be constructed at Kabil and Tanjung Sauh Island, about 20 km to the South East of Singapore.

Development Stage:

- The port is projected to accommodate :
  a. Stage I : 1,000,000 TEU's (2 years constr. period)
  b. Stage II : 1,500,000 TEU's (3 years constr. period)

Project Accomplishment:

- The project shall take 5 years (two stages) to complete.

Investment cost:

- Investment cost is estimated to reach US$ 700 million, covering the works of (among others):
  a. 1,400 m of Berth
  b. Closing Dam between Batam and Tanjung Sauh Islands (functioning as sea current barrier as well as a connecting road between the two islands)
  c. Equipment : 10 – 11 cranes
  d. Building, Warehouse, Container Yard, Offices.

KABIL PORT



6. NEW INTERNATIONAL HOSPITAL

Background:

- Currently, there are 3 (three) hospitals in Batam consisting of 1 public and 2 private.
- Batam population growth is one of the highest growth rates in the nation, i.e. 15% per year.
- According to data, the population of Batam has now reached 570,000 people, while the number of workers has reached 175,000 people. It is estimated that in the year 2007, the population will reach 900,550 people.
- With such a large population, the urgent need for additional beds in Batam's hospitals is estimated to be 160 units with the assumption of 1 bed for 1000 people. The number of beds in the three hospitals in Batam at the moment is around 300 units.
- The hospital shall have the standard of treatment comparable to that of Singapore hospitals', so that it would also be seen as an alternative for the treatment of people in Batam, rather than having to go hospitals in other big cities of Indonesia, i.e. Jakarta, Medan, Pekanbaru, etc.

Objective and Goal:

- The objective of the project is to improve the health facilities both for Batam inhabitants as well as for the international tourists whose number keeps growing from year to year. In the past few years, number of foreign visitors to Batam has averaged 100,000 people monthly. Such project has a high priority since Batam is designated to be the main gate of tourism in Indonesia.
- The goal is the provision of proper health facilities that can be enjoyed by Batam's population as well as by the foreign visitors and workers. At the moment, the number of foreign workers has reached 2,547 people, mostly at managerial level.

Location:

- The new hospital is planned to be located at Batam Center, Batam.

Projection:

- The projection of beds demanded in the year 2005 will reach 700 units, meaning that up to the year 2005, there should be an additional 400 beds to accommodate such demand.

Project Accomplishment:

- The project shall take 2 (two) years to complete.

Investment cost:

- Investment cost is about US$ 16.7 million.

7. POLYTECHNIC BATAM



Background:

With the average investment growth of 30% per year, the industrial development in Batam has grown rapidly, resulting in the rising demand for qualified human resources for the industries.

In 2002, the total number of workers in Batam reached 175,000 people. In anticipating current and future requirement of skilled workers by the industries and competition from neighbouring countries, it is expected that the Polytechnic will produce better quality workers from the population in Batam and its surrounding areas.

Objective and Goal:

The objective of the project is to establish an education institution that produces middle level technicians to meet the demand for professional workers in Batam, in the fields of informatics, electronics and electrical, mechanics.
The goal is the realization of a Polytechnic in Batam that possess internationally recognized standards and capable of accommodating more than one thousand students.

Location:

- The new polytechnic is planned to be located in Batam Center, Batam, with an estimated area of 15 Ha (the main building shall occupy around 9000 m2 of land).

Projection:

- The projection of the number of students are:
  a. Stage I : 270 students
  b. Stage II : 540 students
  c. Ultimate : 1080 students (in five years of operation)
- In addition, the polytechnic shall also conduct short time course (around 200 participants per session) and training for trainers (around 50 participants per session). In a year, the number of participants may reach 1000 – 1500 people.

Project Accomplishment:

- The project shall take 2 (two) years to complete.

Investment cost:

- Investment cost is estimated to reach US$ 11 million, covering costs for recruitment of lecturers, temporary facilities, training, workshop, building and equipment.

Progress Report:

- Batam Polytechnic developed a strategic cooperation with one largest Polytechnics in Singapore: Nanyang Polytechnics in field of cooperation: developing curriculum, training on particular skilled and attachment training program.

- Batam Polytechnics made cooperation with industries in Batam (such as MKPI) to give third year students an attachment programs.

- Establishment of the new facilities in Batam Centre has achieved site development and will move to build students dormitory.

- Batam Polytechnic and SMKN I Batam (a vocational senior high school) initiate a bridging programme that provides additional skill for the SMKN I Batam's graduates in their fourth year.

- Batam Polytechnic wins its first time research grant from Ministry of research and technology of Indonesia with its topic: "Prototyping a PC Based CNC Flame Cutting for Quadratic and Ellipse Curve".

- Batam Polytechnic peppers wrote by its lectures also published in national and international seminars on IT related fields: Malaysia/ICEEE (2001), Pekan Baru/Caltex (2002) and Batam/ICEEE (2002).

8. WASTE WATER POLLUTION CONTROL

Background:

- Waste treatment has been done in each industrial estate and hotel in Batam Island, but it only involves the collection and treatment of waste water within a limited area.
- For the residential areas, waste coming from toilets is generally contained in a septic tank. However, since there is a scarcity of land and a soil condition that can absorb only a little amount of water, the utilization of septic tanks has proved to be ineffective. Greywater coming from households or other activities such as from restaurants are mostly not treated at the moment.
- Current wastewater production is +/- 81 lt./sec.

Objective and Goal:

- The objective of the project is to reduce the level of pollution in dams and coastal water, by establishing the waste water collection and treatment system to collect and treat wastes from potential waste sources (residential areas, tourism and industries) in accordance with the prevailing Environment Quality Standard in Batam.
- The goal is the provision of a waste water collection system for the areas of Batu Ampar/Nagoya and Sekupang, including drainage, pump station, and transmission line as well as waste water treatment facilities.

Location:

- Waste Treatment Centers are planned to be established in 2 (two) locations by an integrated system, i.e. Batu Ampar and Sekupang, Batam Island.

Projection:

- Projection of daily average wastewater production in the year 2006 is 225 lt./sec with the peak volume of 340 lt/sec.

Project Accomplishment:

- The project shall take 2 (two) years to complete (including the Detail design works).

Investment cost:

- Investment cost is estimated to reach US$ 30 million, covering the works of drainage, pump station, and transmission line as well as waste water treatment facilities.

9. BATAM INTELLIGENT ISLAND

Background:

- Most of the industries operating in Batam are a multinational company with export oriented, so that information technology with international standard is a must to be implemented in Batam. Globalization era and the fast growing the development of Technology Information has foster Batam to better equipped with information infrastructure to remind competitive, exist and survive in the global competition.

- Information and Communications Technology or ICT is a concept to solve the problem

Objective and Goal:

- The objective of the project is to set up Information Technology facility for Public Sector and Private Sector use.
    a. Public Sector:
        - To develop IT infrastructure in Government sector
        - To develop IT Centre
        - E-Government
        - E-One Stop Service for Citizens.
        - E-Kiosk
        - Electronic Data Interchange in Customs Excise

    b. Private Sector:
        - To develop IT infrastructure in Private sector or Industrial Estate
        - E-One Stop Service for Investors
        - E-One Stop Service for Foreign Visitors

- The goal is to give value added to Batam Island as a Free Trade Zone become more competitive and attractive for investment destination.

Location:

- The whole area of Batam Island.

Projection:

The project is divided into 3 phases of Projection:

- First Year, to create awareness/socialization to BII user with scope of work covering:
    - Feasibility Study
    - BII working committee
    - Planning
    - Legal Framework
    - Requirement & Strategy
    - Partnership

- Seminar/Event

- Second Year, to set up IT infrastructure with scope area of development:
  - Basic Infrastructure
  - Business process design
  - Application development
  - Set up component of E-application (6 C's)
  - Security management
  - Communication infrastructure needed
  - BII model start up
  - BII user-consortia-sponsored

- Third Year, Implementation of BII homepage which is covering;
  - Pilot access to BII (read only)
  - End-to-end integration
  - Technology management
  - Business continuity management
  - Consolidated user's system
  - User system transform into e-platform
  - Setting-up of integrated commerce network by e-platform
  - Consolidated process

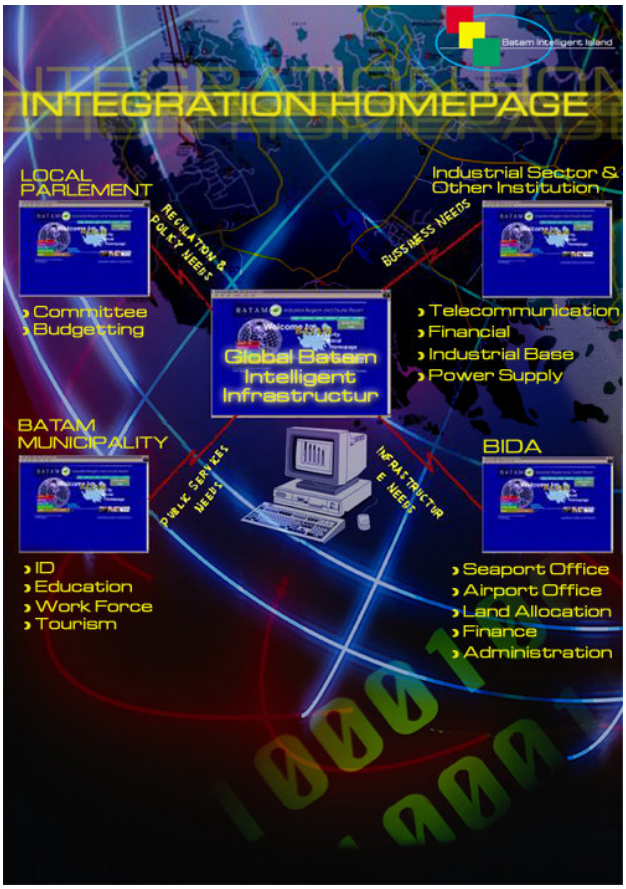
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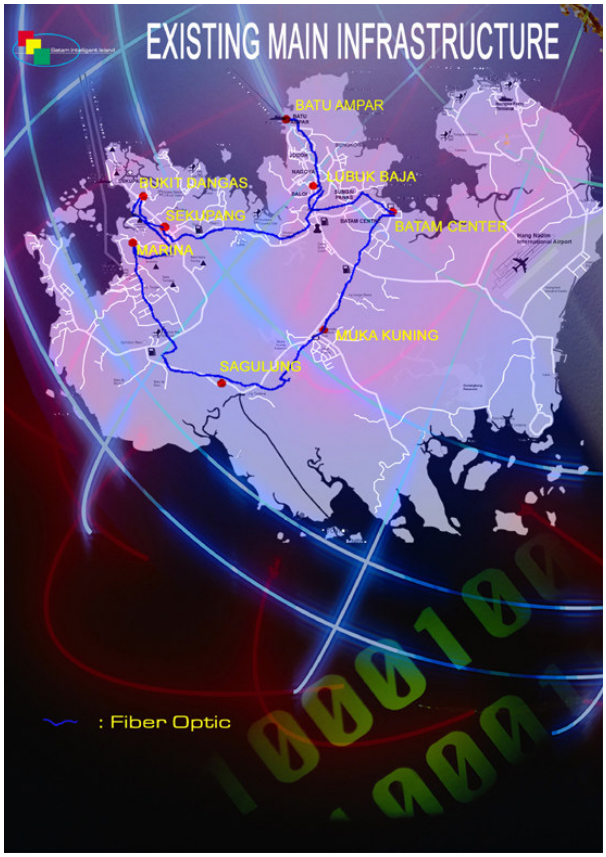
Project Accomplishment:

- The project shall take 4 (four) years to complete.

Investment cost:

- Investment cost is estimated to reach US$ 30 million, covering installation of fiber optic backbone cable line and other IT supporting facilities.


INTEGRATION HOMEPAGE
Batam Intelligent Island
LOCAL PARLEMENT
REGULATION & POLICY NEEDS
Industrial Sector & Other Institution
BUSSINESS NEEDS
Committee
Budgetting
Global Batam Intelligent Infrastructur
Telecommunication
Financial
Industrial Base
Power Supply
BATAM MUNICIPALITY
PUBLIC SERVICES NEEDS
INFRASTRUCTURE NEEDS
BIDA
ID
Education
Work Force
Tourism
Seaport Office
Airport Office
Land Allocation
Finance
Administration


EXISTING MAIN INFRASTRUCTURE
BATU AMPAR
PULAU BARELAS
KUBUK BAJA
SEKUPANG
BATAM CENTER
MARINA
KIKA KUNING
SAGULUNG
: Fiber Optic

10. BATAM PUBLIC GAS FACILITY

Background:

- The construction of gas distribution from Asamera (Jambi - Indonesia) to Singapore via Batam is planned to be completed in October 2003.
- Batam is a "hub" functioning as a control center to ensure the quality of gas supply.
- The kerosene supply in Batam frequently suffers delays that result in the instability of price and causes distribution difficulties.
- Gas may be used as household fuel substitute to replace kerosene.
- To promote gas utilization rather than fuel consumption regarding to the lower cost of gas, diversification of energy, conservation of fuel which is affordable, healthy, and environment-friendly.

Objective:

- To establish public gas network for the households and other commercial purposes, such as: public transport, hotel, small industry, etc.

Location:

- Covering the whole area of Batam, with the possibility of expansion to Barelang if the networking in Batam has been accomplished.

Projection:

- Phase I (2003): Feasibility study on the gas utilization potentials in Batam.
- Phase II (2004-2007): Construction of distribution network in Batam Island

Project Accomplishment:

- The project shall take 5 years complete

Investment cost:

- Investment cost has not been fully calculated, but such cost shall cover the works of:
  a. Feasibility Study
  b. Mapping of Distribution Area, Public Awareness/Campaign
  c. Piping Network, Pumping Stations, Machinery, Offices, etc