

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 TECHNOLOGY, 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

- 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.

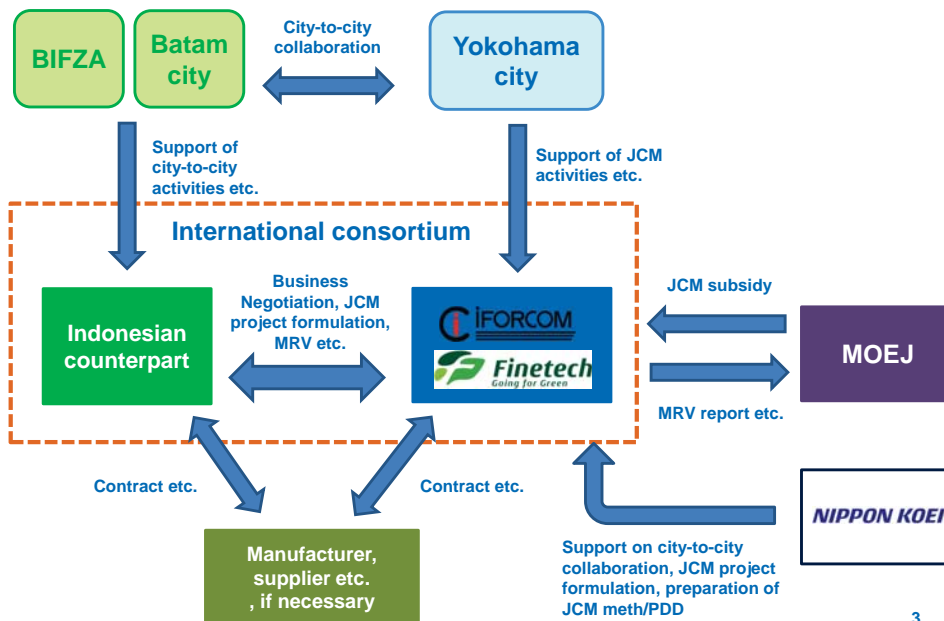
Advanced green (low carbon) products /technologies from Japanese entities



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

Kota Layak yang aman dan nyaman Living neighborhoods Walkable Affordable Comfortable Cultural Connectivity	Kota Hijau yang berkelanjutan iklim dan bencana Green Oasispace Green Waste Green Transportation Green Water Green Energy Green Building Resilience	Kota Cerdas yang berdaya saling dan berbasis teknologi Smart Economy Smart People Smart Governance Smart Mobility Smart Environment Smart Living
---	---	---

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



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.							█			

MP2013-ID01&02

Energy Saving for Air-conditioning and Process Cooling at Textile Factory

Indonesia



Expected GHG Emission Reductions

Project 1: 117 tCO₂/year
Project 2: 117 tCO₂/year



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 CO₂ 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

FS2014-16

Introduction of Waste to Energy Plant in Yangon City

Myanmar

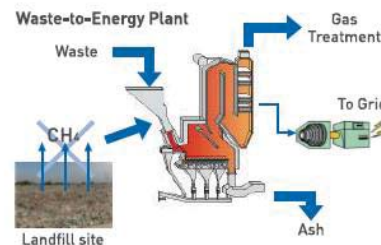


Expected GHG Emission Reductions
1,500 tCO₂/year



Implementing Entity : JFE Engineering Corporation

By introducing a Waste-to-Energy plant, the reduction of the CH₄ 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

MP2014-MY01

PV Power Generation and Relevant Monitoring System for the Office Building

Malaysia



Expected GHG Emission Reductions
179 tCO₂/year



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.

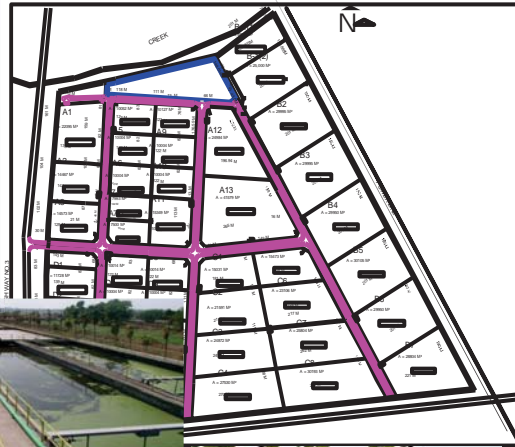
The solar cell is made of a thin monocrystalline silicon wafer surrounded by ultra-thin amorphous silicon layers. This product offers the industry's leading performance and value; 19.4% conversion ratio. The electricity amount generated on solar panel will be monitored and managed in the data management server.



Source : JCM Feasibility Studies, G9C

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.



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**



Development Cooperation Division, International Affairs Bureau
City of Yokohama

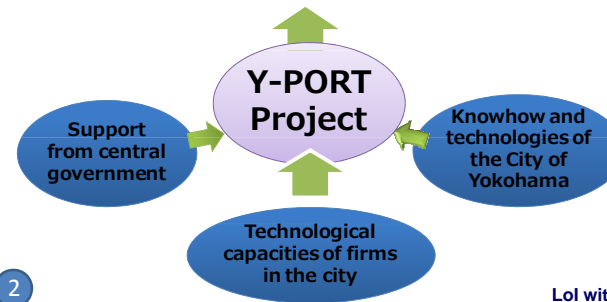
© City of Yokohama 2015

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



Lol with the City of Batam in May, 2015

City to City Collaboration

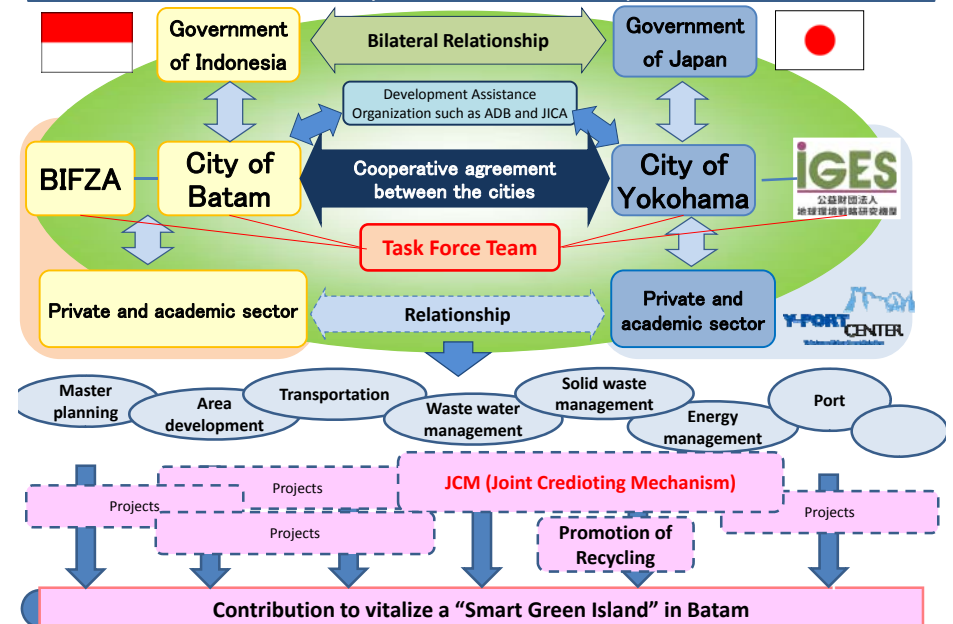
Letter of Intent on Technical Cooperation for Sustainable Urban Development Signed with the City of Batam, on 27th May, 2015.



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

5

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)

6

“BATAM TOWARDS GREEN & RESILIENT CITIES”

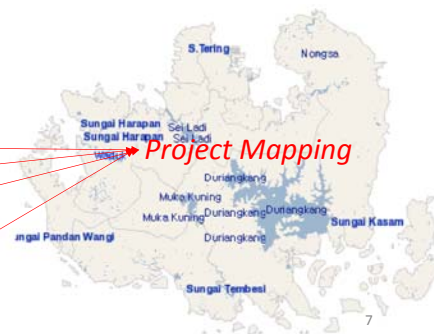


Action Planning to realize Green Smart Island of Batam by identifying prioritized projects

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

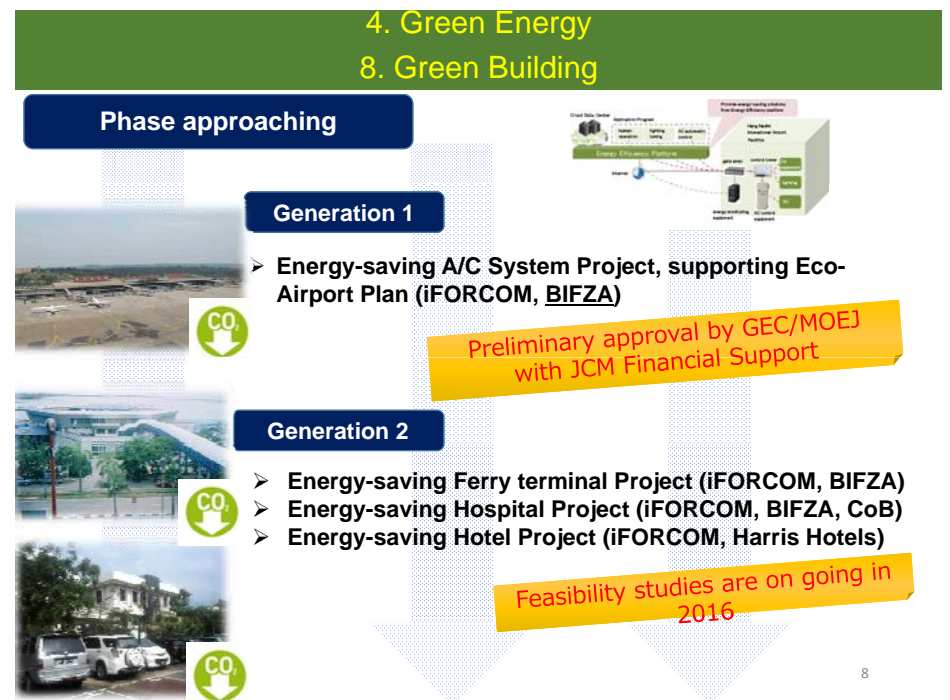
“TOWARDS A GREEN CITY”

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



7

4. Green Energy
8. Green Building



8

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:

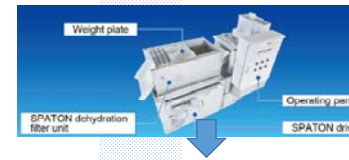


➢ PV System with Advanced Demand Control Implementation Project
➢ Add-on Biomass (Waste)-based Power Generator with Advanced Demand Control Implementation Project

9

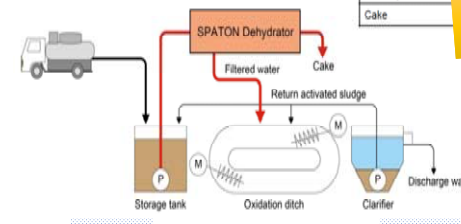
6. Green Water

Phase approaching



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

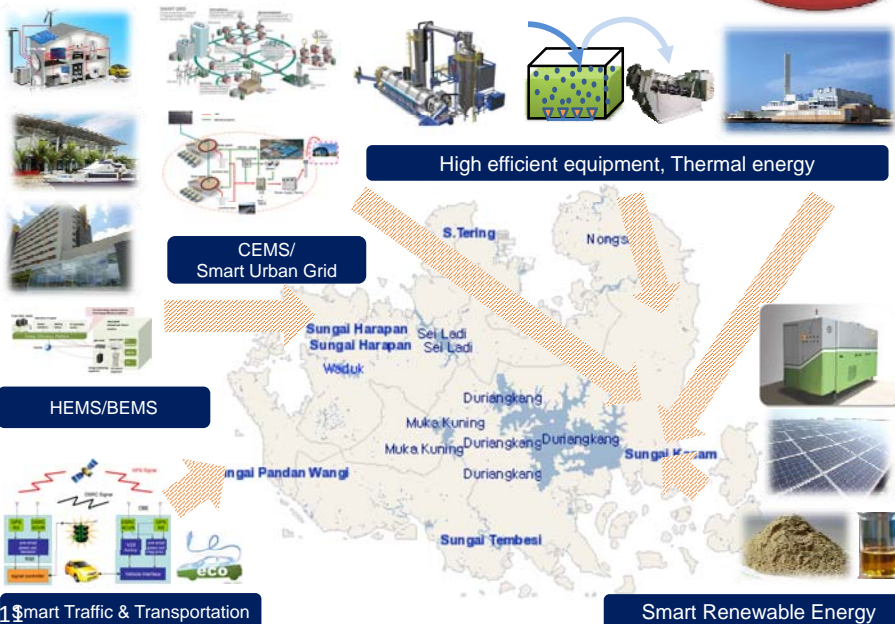
Feasibility study funded by JICA is on going in 2017



10

Smart Green Island Project Conceptual Mapping

Tentative



Thank you for your attention

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

P R E S E N T A T I O N

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)



Copyright 2016 iFORCOM Tokyo Co.,Ltd. All Rights Reserved.

2

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



Copyright 2016 iFORCOM Co.,Ltd. All Rights Reserved.

3

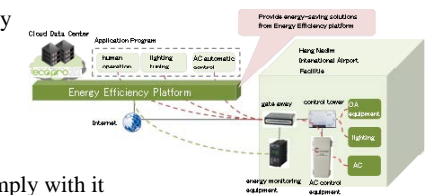
Overview

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.

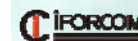
Specifically, by utilizing the following, it is possible to construct verified optimum energy saving promotion platform at airports.

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



Copyright 2016 iFORCOM Tokyo Co.,Ltd. All Rights Reserved.

4

Track Record

Japan



Overseas



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

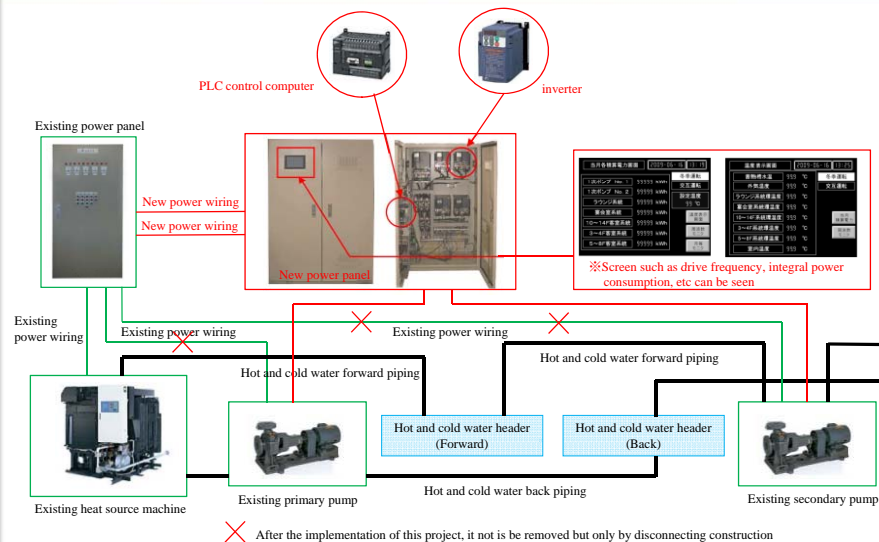
It established the inverter to the pump (motor) that comes with eight chiller, to control the output (number of revolutions). Check the operational status, if possible, it can also be carried schedule operation.

③Installation of the monitoring system

We will set up equipment to monitor the electricity usage.



Overview of energy-saving equipment



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

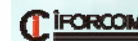
②Inverter control of the chiller pump

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%



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

iFORCOM 9
Copyright 2016 iFORCOM Tokyo Co.,Ltd. All Rights Reserved.

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

iFORCOM 10
Copyright 2016 iFORCOM Tokyo Co.,Ltd. All Rights Reserved.

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

iFORCOM 11
Copyright 2016 iFORCOM Tokyo Co.,Ltd. All Rights Reserved.

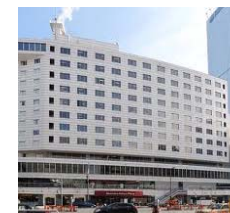
Contact us

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



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 Co., Ltd. All Rights Reserved, Copyright ©

FINETECH: Head Office / Labo / Plant / Associate



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



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

Fukushima Renewable Energy Co., Ltd



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

Aizu-wakamatsu Office
(Now New Open)

FINETECH Co., Ltd. All Rights Reserved, Copyright ©



FINETECH :

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



Y-PORT CENTER

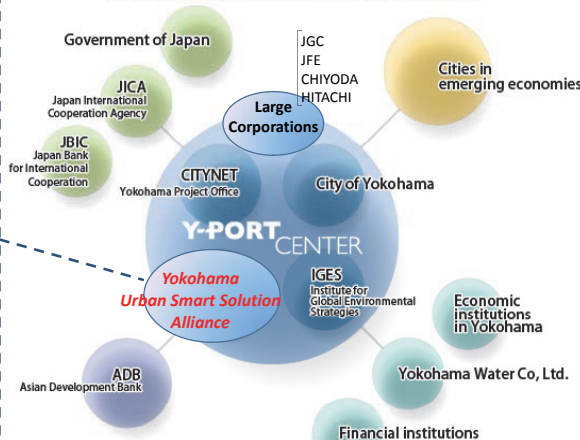
Yokohama Urban Smart Solution

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.



FINETECH Co., Ltd. All Rights Reserved, Copyright ©



"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



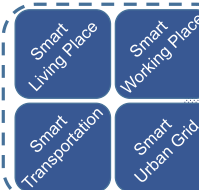
A-EMS

Developing Green New Materials



Green Nano

Green Plastics



Smart Green Open Innovation Platform

FINETECH Co., Ltd. All Rights Reserved, Copyright ©

Smart Green Island Project Conceptual Mapping for BATAM



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



FINETECH Co., Ltd. All Rights Reserved, Copyright ©



Smart Green Park (Trademark of FINETECH)



FINETECH Co., Ltd. All Rights Reserved, Copyright ©



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

FINETECH Co., Ltd. All Rights Reserved, Copyright ©

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

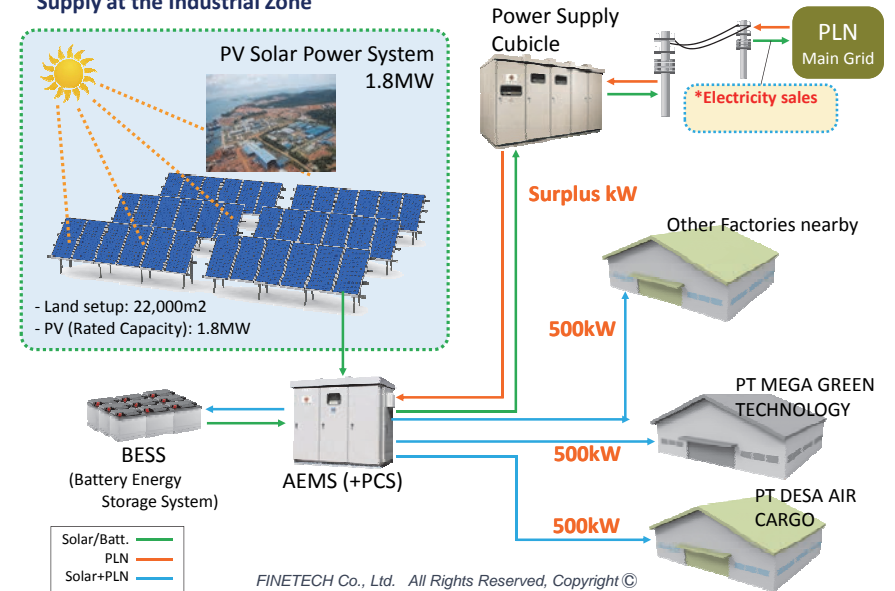
- Utilization of palm oil refinery process in which residue oil are extracted from spent bleaching earth in the Palm Oil Refinery Industry
planned site at PT DESA AIR CARGO / PT Musim Mas

FINETECH Co., Ltd. All Rights Reserved, Copyright ©

Key Opportunity #1 / Summary



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



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

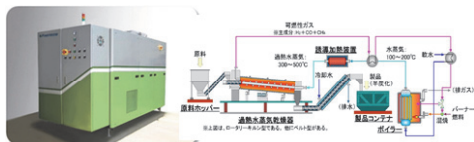
- Under the strict operation of B3 management, FINETECH will try to find out opportunities of Waste-to-Material Technology Implementation, focusing on Spent Bleaching Earth emitted from PT MUSIM MAS Palm Oil Refinery Factory.



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..

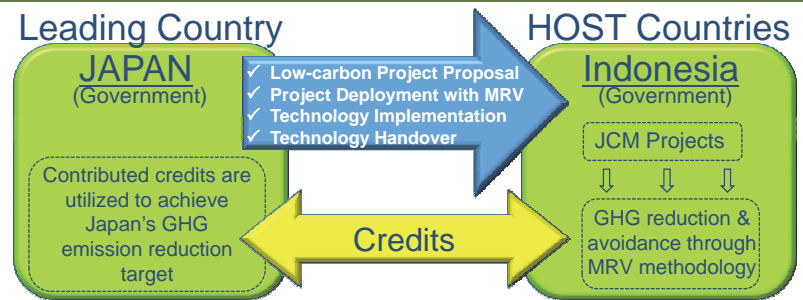


Waste Recovering Machine by Super-heated Technology



Recovered Oil (Image)

JCM Feasibility Study in Batam for FY2016 (FINETECH)



< 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



横浜市
City of Yokohama



Y-PORT
Yokohama Partnership of
Innovation and Technologies



BIFZA
Batam Indonesia Free Zone Authority



IGES
Institute for Global
Environmental Strategies



NIPPON KOEI

FINETECH Co., Ltd. All Rights Reserved, Copyright ©



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

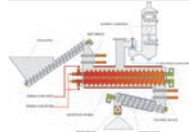
Step2: Design for Small-scale Pilot in JPN

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)



FINETECH Co., Ltd. All Rights Reserved. Copyright ©

FINETECH



Going for Green

the way we work...



www.finetech.co.jp

FINETECH Co., Ltd. All Rights Reserved, Copyright ©



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
16 th (Sun.)	22:45	Dep. from Singapore Airport
17 th (Mon.)	06:45	Arrival at Haneda Airport
	08:30	Arrival at Navios Yokohama hotel.
	13:50	Meeting at the lobby of Navios Yokohama hotel <ul style="list-style-type: none"> ➤ 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
18 th (Tue.)	09:00	Dep. from Navios Yokohama hotel
	11:30	Site Visit: Smart Green Park (Finetech) <ul style="list-style-type: none"> ➤ Overview Presentation of the Park <ul style="list-style-type: none"> · Featuring Pesentation from FINETECH ➤ Site-visit in the Park Facilities <ul style="list-style-type: none"> · 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
	08:30	Dep. from Navios Yokohama hotel
19 th (Wed.)	09:30	Site Visit: Shiroyama Kogyo Co., Ltd. (iFORCOM) <ul style="list-style-type: none"> ➤ 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
20 th (Thu.)	9:00~17:00	JCM Workshop in Kitakyushu (1) Please see the attachment of the workshop schedule.
21 st (Fri.)	9:00~17:00	JCM Workshop in Kitakyushu (2) Please see the attachment of the workshop schedule.
22 nd (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 venue

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 15:00	Courtesy call on Chairman of BIFZA Courtesy call on Mayor of Batam City	Offices of BIFZA and 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

1

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)



2

1. Introduction of Yokohama City and Its Development History

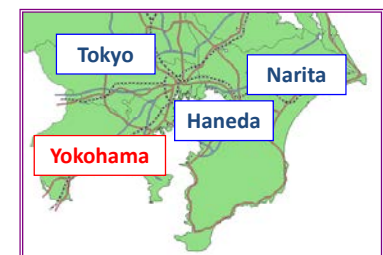


3

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)

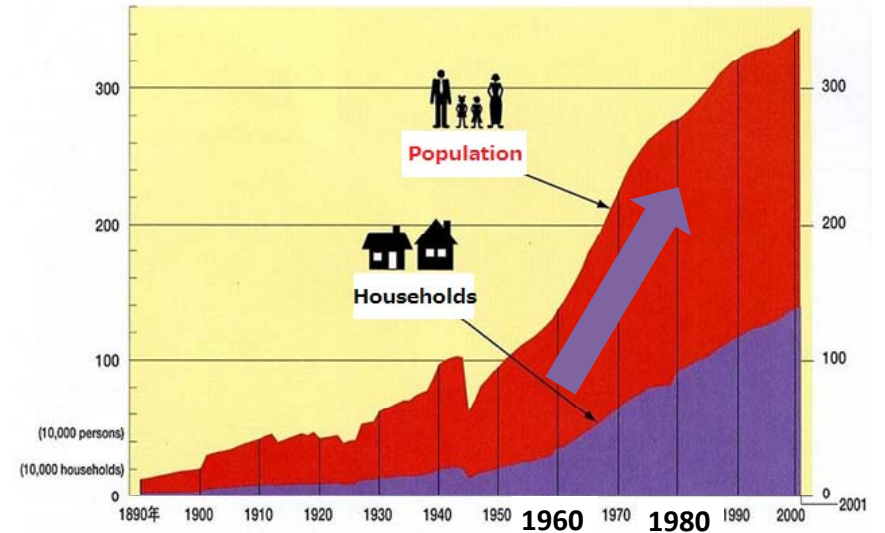


4

History of Yokohama's Urban development



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



6

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



- 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.



9

2. Challenges for Global Warming in Yokohama

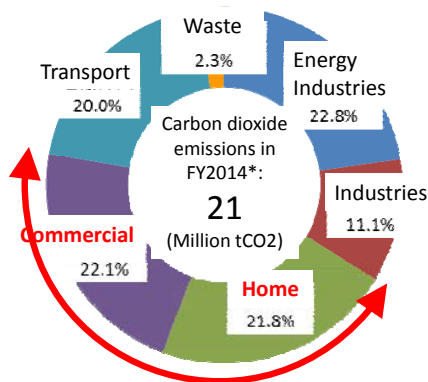


10

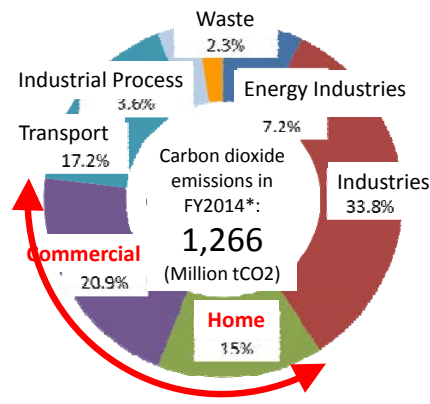
CO2 emission in Yokohama City

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

In Yokohama City



In Japan



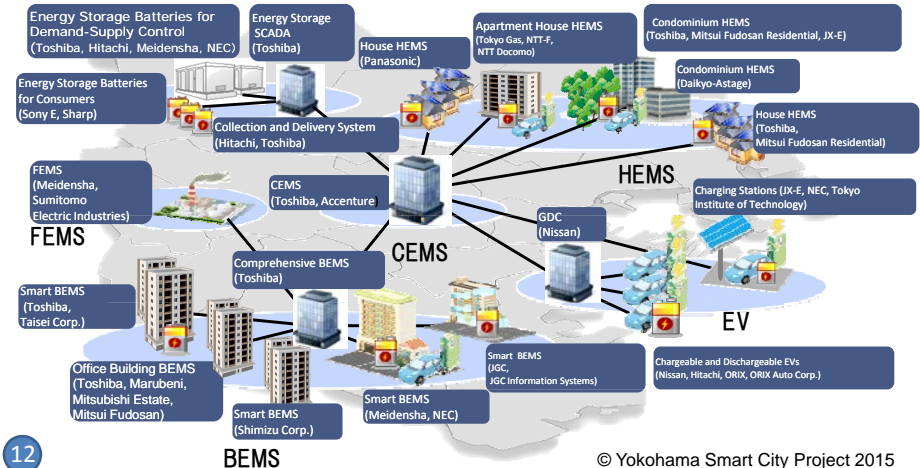
*Carbon dioxide emission value in the graphs shows preliminary results in 2014

11

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)

Energy Storage SCADA



12

© Yokohama Smart City Project 2015

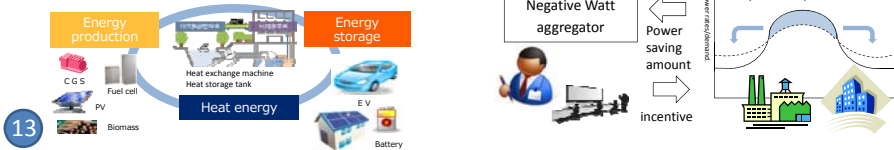
Yokohama Smart Business Association (YSBA)



Achievement of an "Energy - recycling City"

Promote local energy production for local consumption

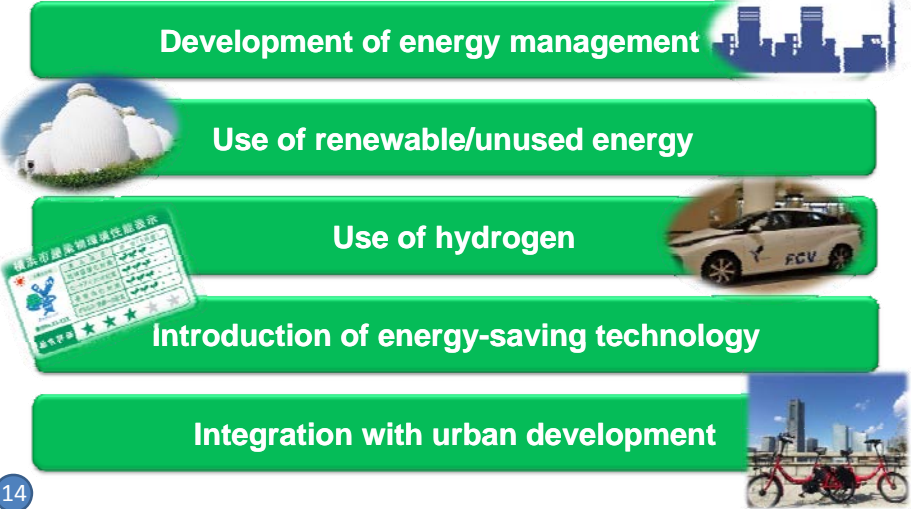
Use BEMS to verify public facility demand response



Aiming for an Energy Recycling City

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

BEMS



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

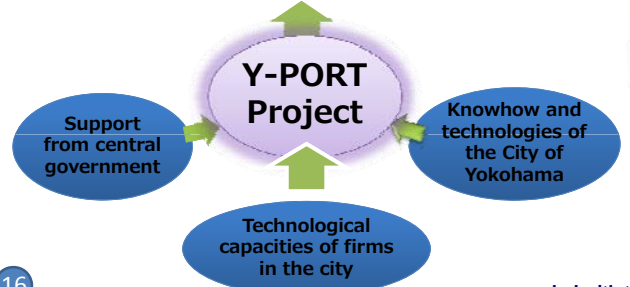


Yokohama's International Development Cooperation – Y-PORT

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



Lol 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>

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 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* 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.

Batam City, Indonesia

JCM 533* tCO₂/year

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

Cebu City Philippines

JICA

Efficient dewatering process of septage sludge by Amcon INC.

JICA

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

*Expected CO₂ Emission Reductions(tCO₂/year)

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

Government of Indonesia ↔ Bilateral Relationship ↔ Government of Japan

Development Assistance Organization such as ADB and JICA

City of Batam ↔ Cooperative agreement between the cities ↔ City of Yokohama

Task Force

Private and academic sector ↔ Relationship ↔ Private and academic sector

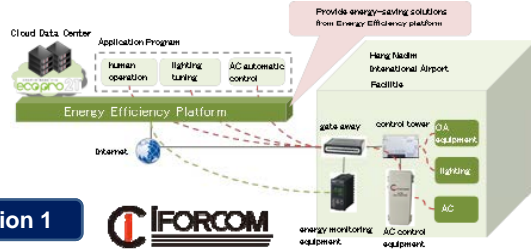
Master planning, Area development, Transportation, Waste water management, Solid waste management, Energy management, Port

Projects, Projects, Projects, Promotion of Recycling, Projects

JCM (Joint Crediting Mechanism)

Contribution to vitalize a "Smart Green Island" in Batam

Phase approaching by JCM in Batam City



Generation 1



- 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

21

Aiming to spread benefit over whole of the City

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



22

Sharing best practices on smart urban solutions

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



23

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,

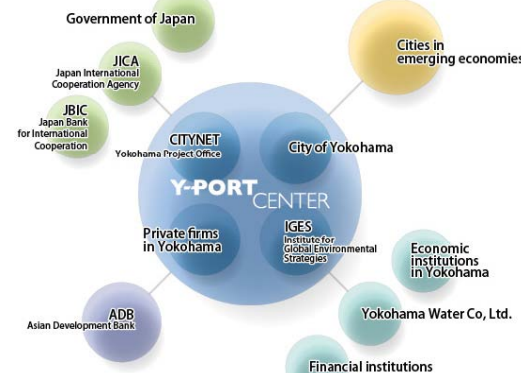
International Affairs Bureau

City of Yokohama, Japan

Email : ki-yport@city.yokohama.jp

Y-PORT CENTER

Yokohama Urban Smart Solution



Thank you for your attention

24

City-to-City Collaboration

Toward Smart and Green Island of Batam



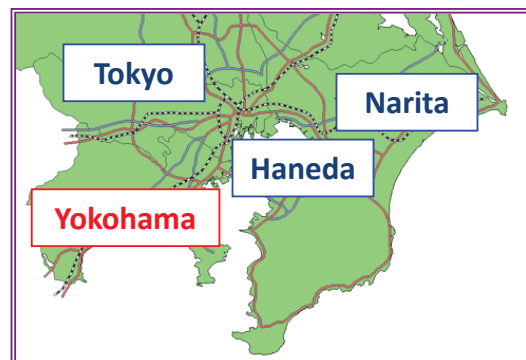
Development Cooperation Division, International Affairs Bureau
City of Yokohama

© City of Yokohama 2015

Overview of Yokohama City



- 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



3



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)

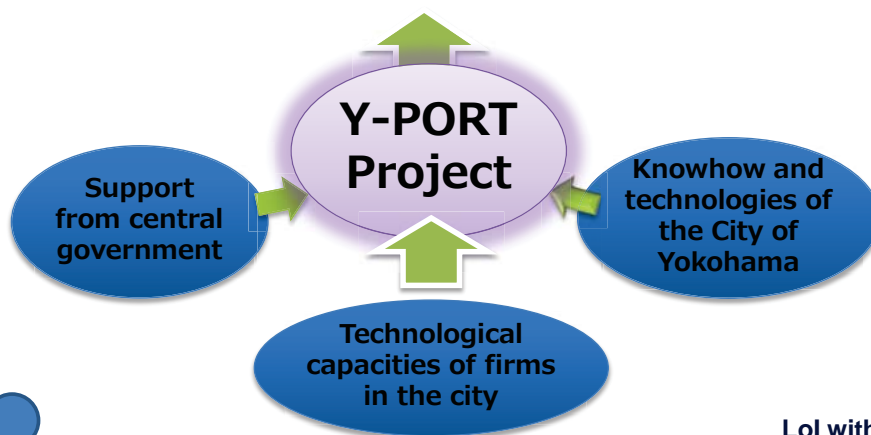


Yokohama's International Development Cooperation – Y-PORT

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



Lol 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

JICA

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.

Batam City, Indonesia

JCM
533* tCO₂/year

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

***Expected CO₂ Emission Reductions(tCO₂/year)**

JICA

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

City to City Collaboration in Batam

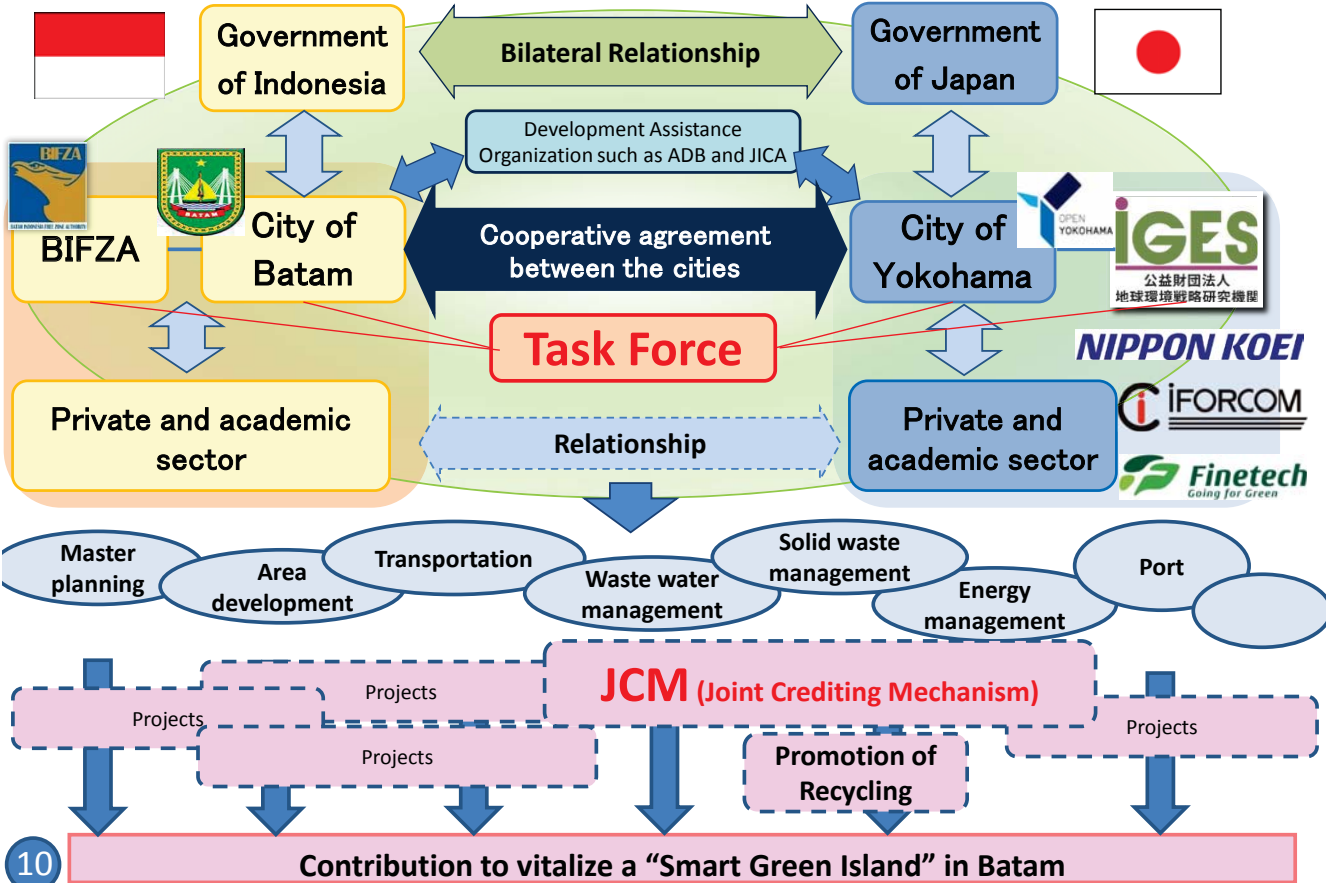
Letter of Intent on Technical Cooperation for Sustainable Urban Development Signed with the City of Batam, on 27th May, 2015.



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.

11

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



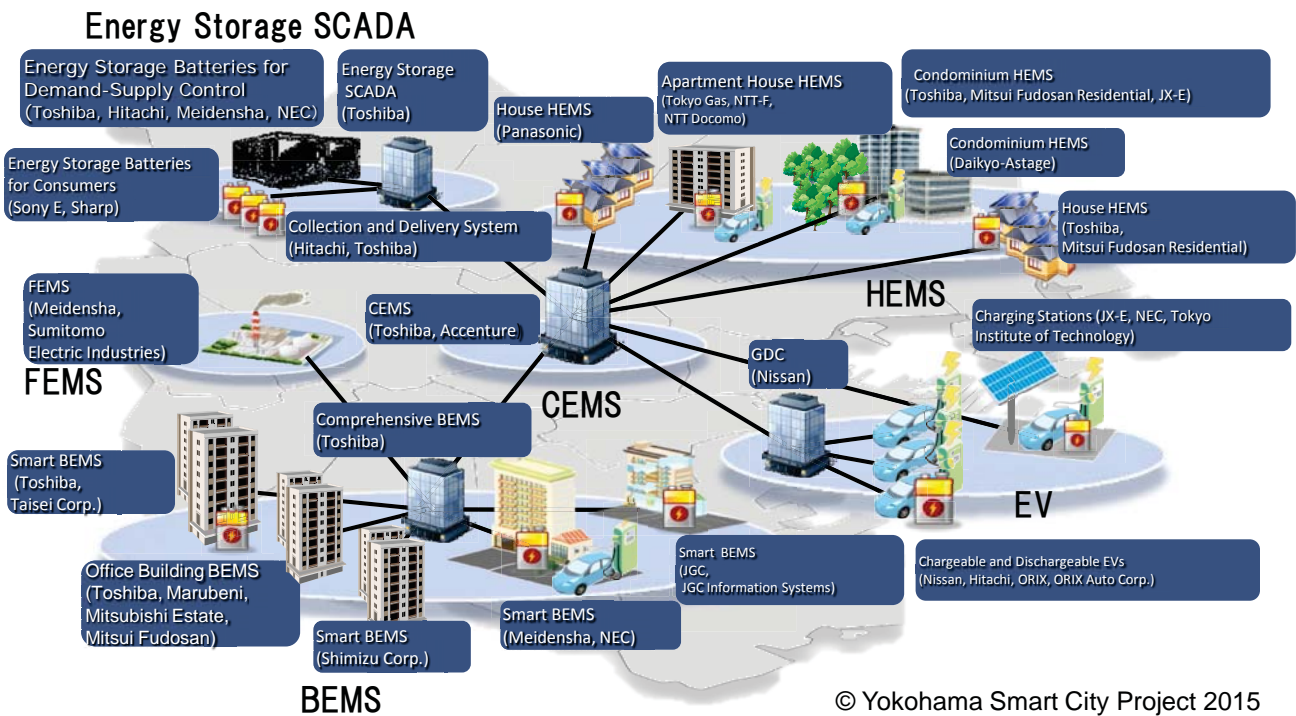
Batam Invest Seminar in Yokohama on Nov 15 Deputy Chairman Mr. Gusmardi Bustami

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)



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

BEMS

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

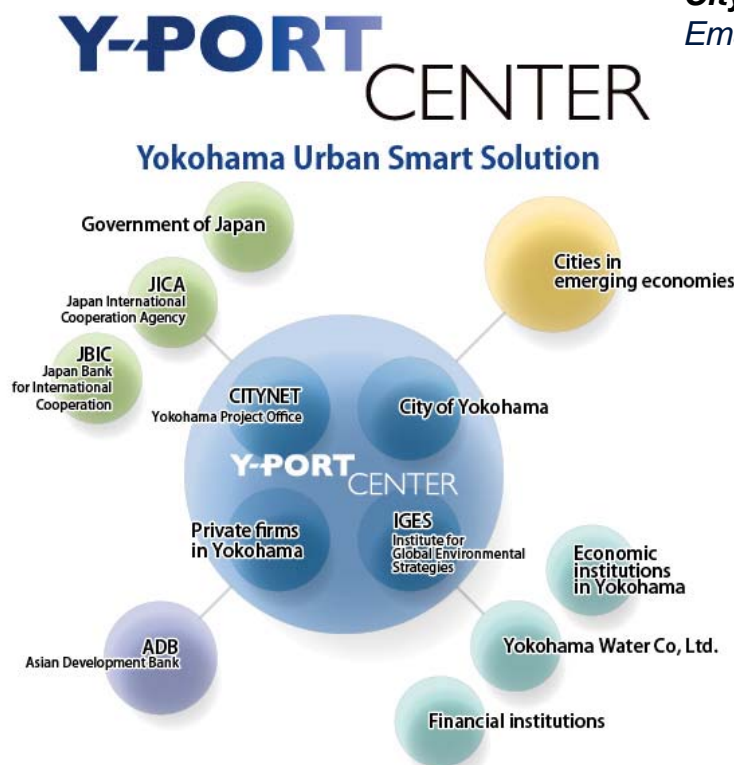


Y-PORT CENTER – Knowledge hub for smart city management

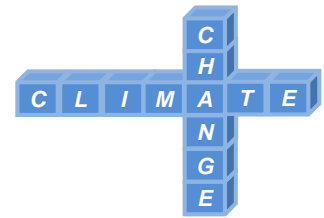
Please visit our web site:

<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



*Thank you
for your attention*



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.

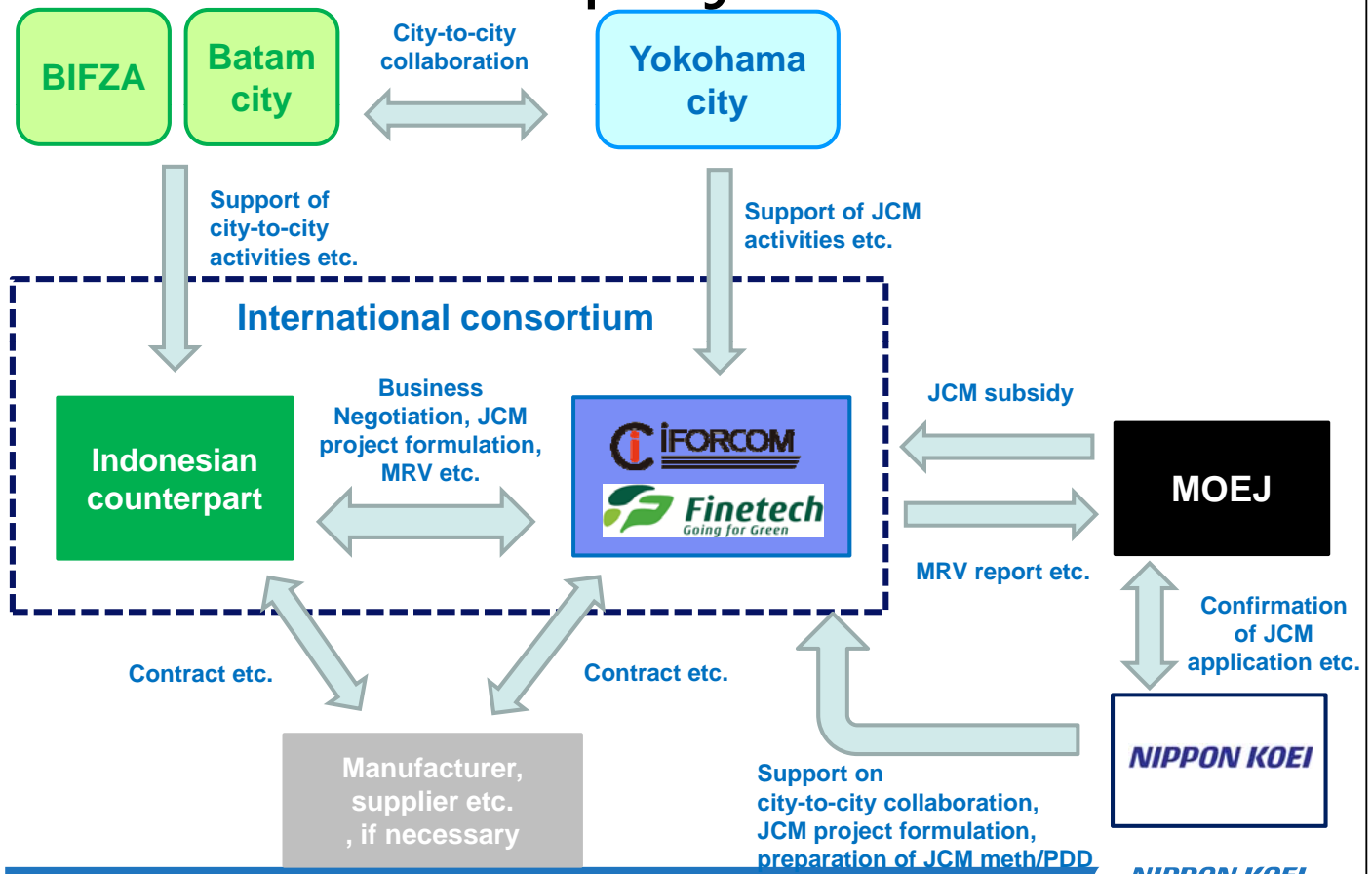
Advanced green (low carbon) products /technologies from Japanese entities



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



3

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)

January 19, 2017

Overall progress of the study

5

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 <i>City-to-City Collaboration Seminar in Tokyo</i>
Feb, 2017	<i>Finalization of project map (1st version) and F/S plan</i>
Mar, 2017	<i>Reporting</i> <i>Application for F/S 2017</i>
Apr-May, 2017	<i>Application for Model Project 2017</i>

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

January 19, 2017

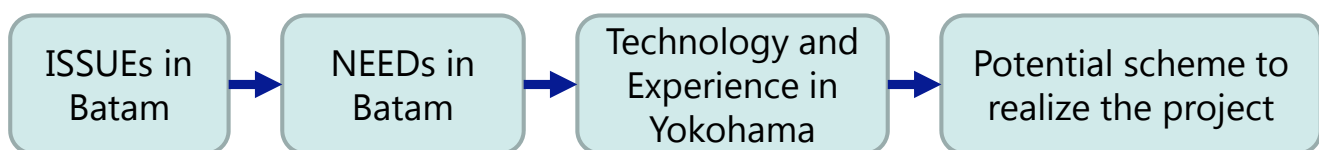
Overall progress of the study

6

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)

Initial Draft of Tables to Develop the Project Mapping (As of 29 November 2016)

Plan	Issue of Batam	Aim of Draft BROAD	Target of Draft BROAD	Mission of BROAD	Development Strategy 2017 with	Green City Program	Green City Program	Essential activities	Essential Technologies	Cooperation in Yokohama City	[For reference] Status of Yokohama City
Target Period	2016-2021					2011-2015	2011-2015				
Overall Development											
Water Resource											
Water purification											
Water distribution											
Wastewater treatment											
Renewable energy											

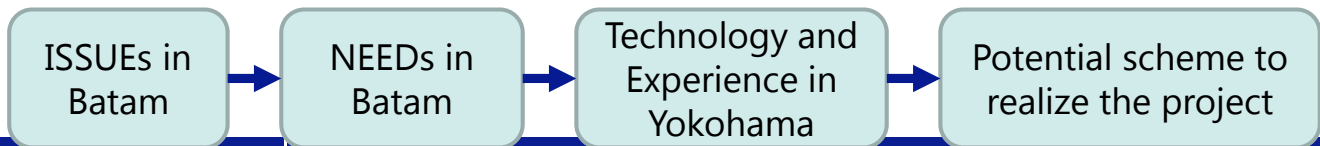
January 19, 2017

Overall progress of the study

NIPPON KOEI

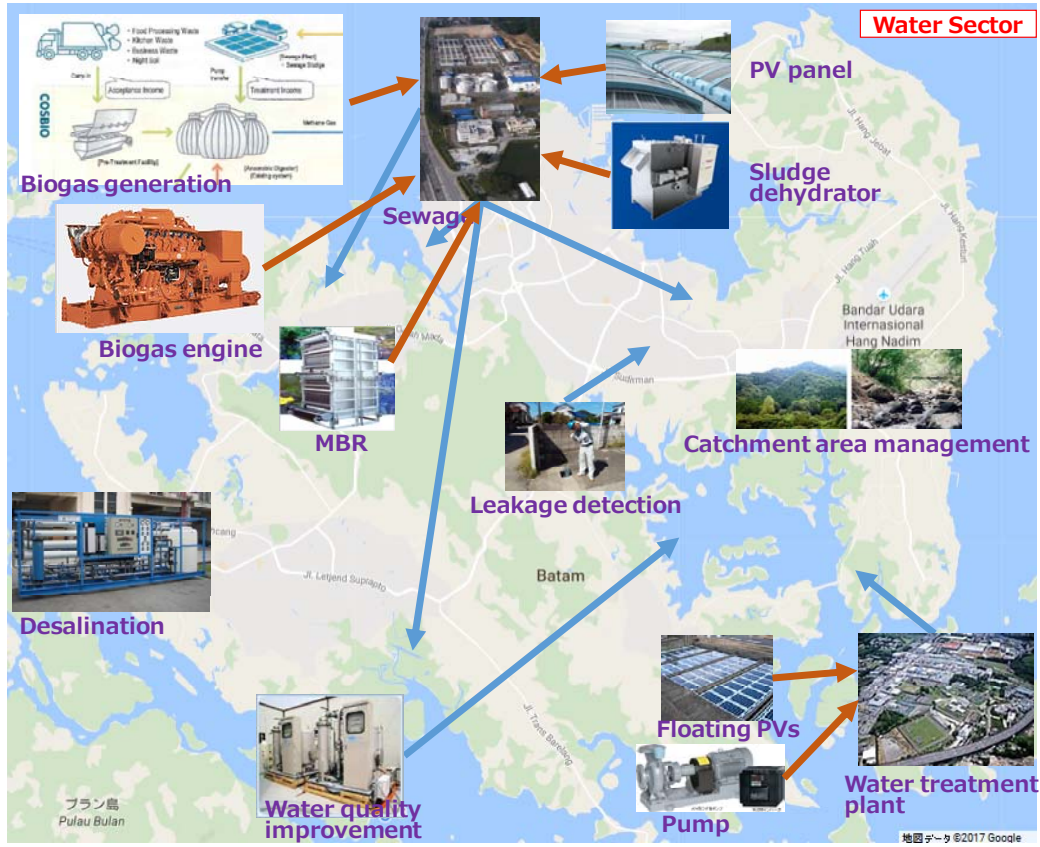
9

Project Map(Example)



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)



P R E S E N T A T I O N

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

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)



Copyright 2017 iFORCOM Tokyo Co.,Ltd. All Rights Reserved.

3

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



Copyright 2017 iFORCOM Co.,Ltd. All Rights Reserved.

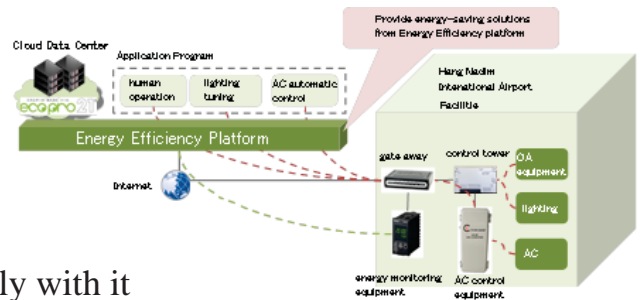
4

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



We offer the following solution for the electricity usage reduction.

① Installation of the monitoring system

We will set up equipment to monitor the electricity usage.

② Operational 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

③ Inverter 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.

1.2 Track Record

Japan



Overseas



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



③ Where we are

~ Approaching Project ~

Energy-saving Ferry Terminal Project

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

Energy-saving Hospital Project

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

Energy-saving Hotel Project

Harris Hotel

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

Bali:

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

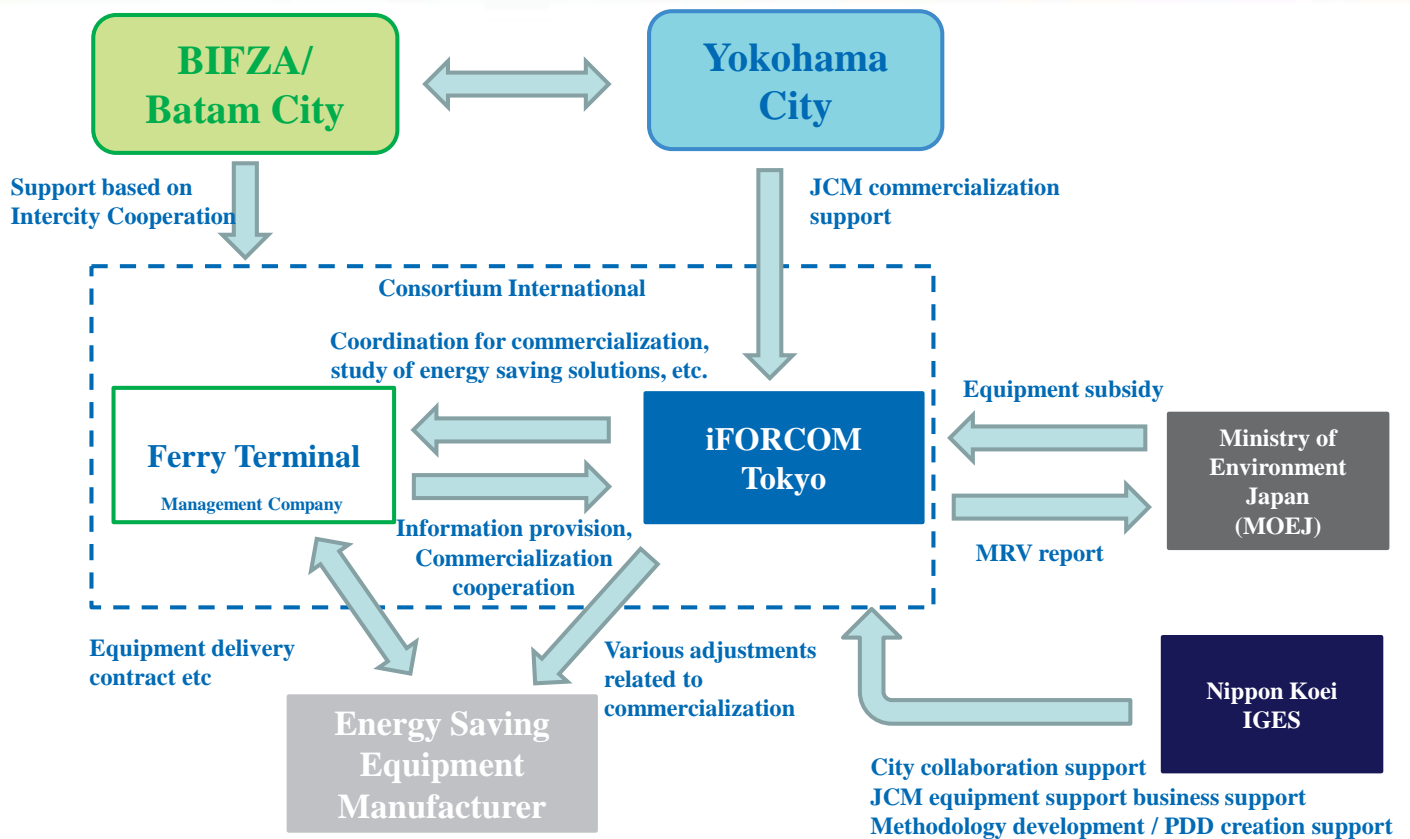
9



Copyright 2017 iFORCOM Tokyo Co.,Ltd. All Rights Reserved.

3.1 Ferry Terminal Project

~ Scheme ~



Copyright 2017 iFORCOM Co.,Ltd. All Rights Reserved.

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)

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

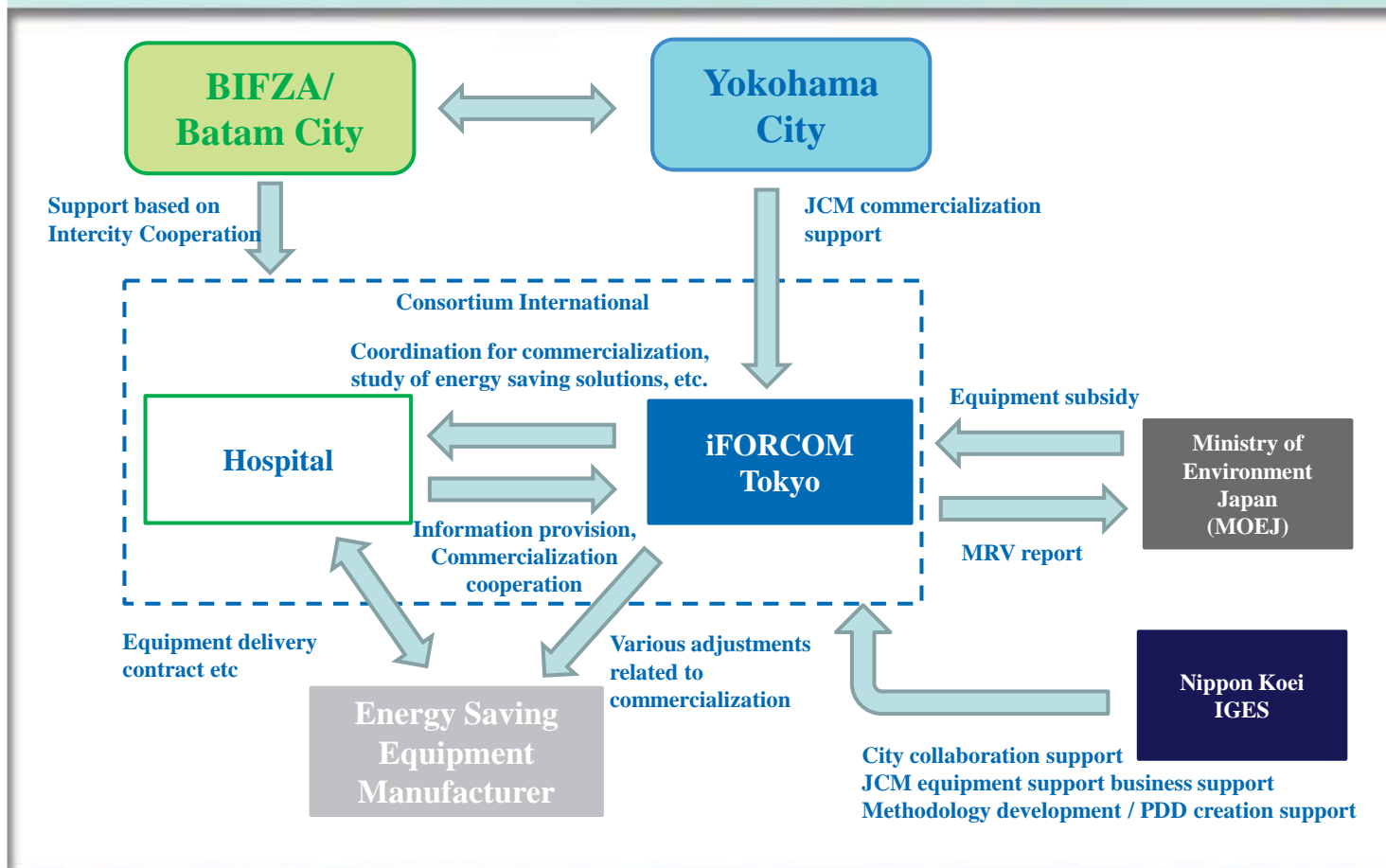


Ferry Terminal Nongsa



3.2 Hospital Project

~ Scheme ~



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
4	Detailed condition adjustment within the consortium for equipment auxiliary project application	Adjustment of consortium with Hospital	iFORCOM Tokyo, Nippon Koei	Batam City	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)

3.2 Hospital Project

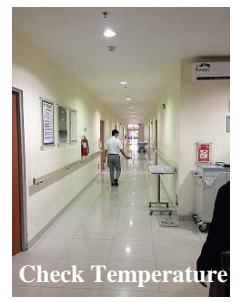
~ Survey target facilities ~

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

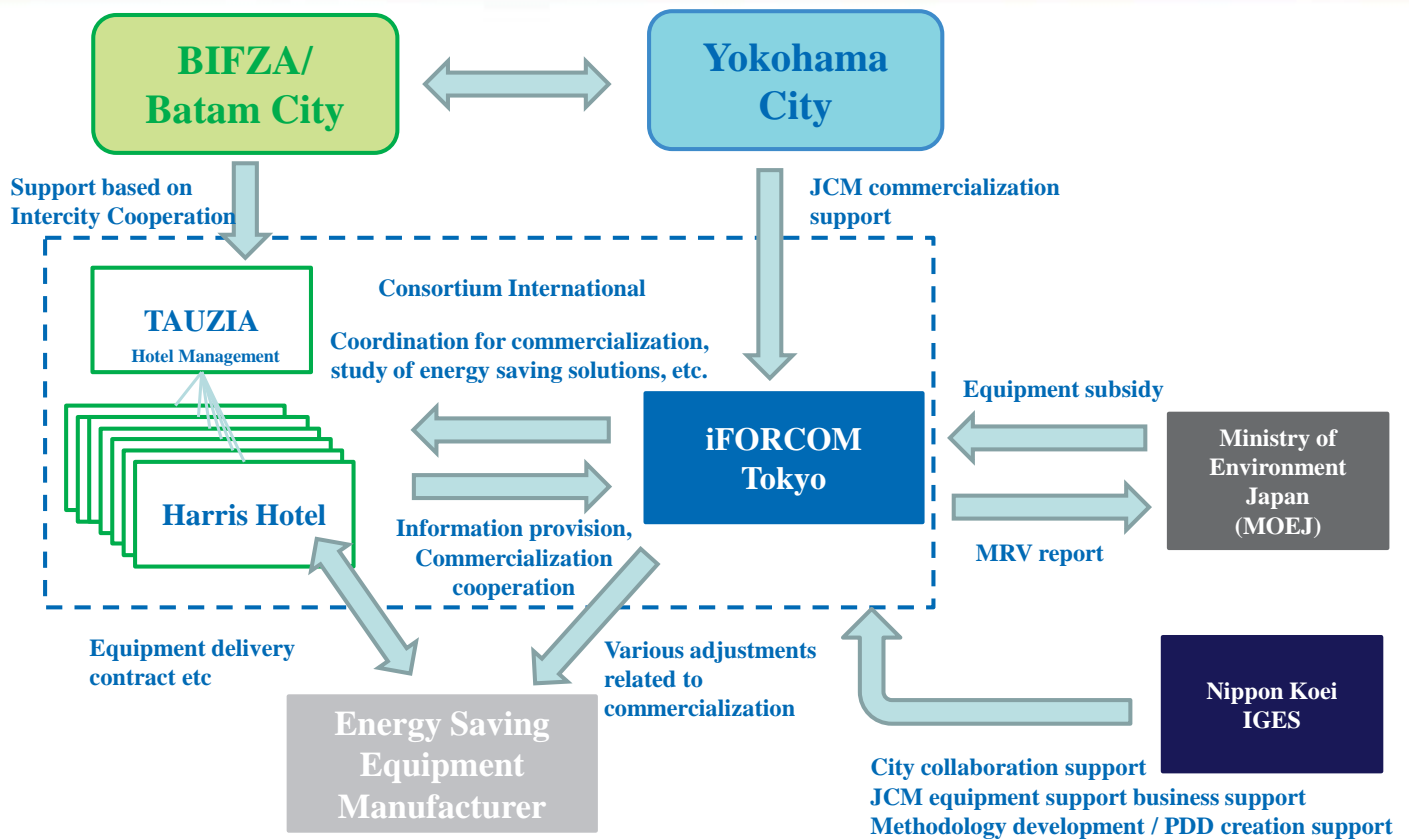


RSUD Embung Fatimah Kota Batam



3.3 Hotel Project

~ Scheme ~



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)

17

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

18

3.3 Hotel Project

~ Survey target facilities ~

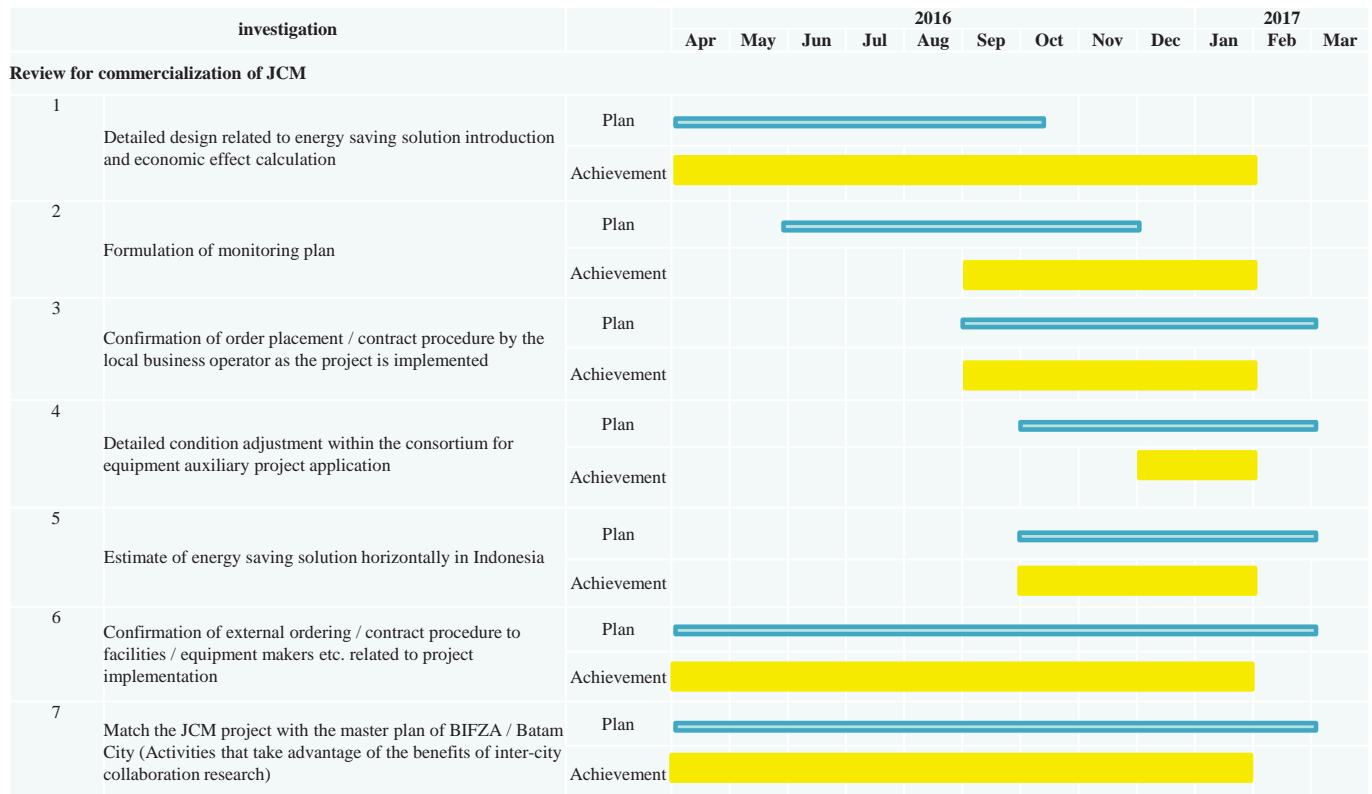
No	Survey target facilities	Field survey	Monthly power consumption	Obtaining equipment data	Prospect of JCM implementation	Remarks
16	Harris Hotel Ciumbuleuit	Already	1,440 MWh	Already	○	Interested
17	Harris Hotel Sentul City	Already	2,634 MWh	Not yet	○	Interested
18	Harris Hotel Riverside	Already	Not 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



④ Schedule

Plan and Achievement

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



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



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



www.finetech.co.jp



FINETECH Co., Ltd. All Rights Reserved, Copyright ©

Y-PORT Center and Yokohama Urban Smart Solution Alliance



Y-PORT CENTER

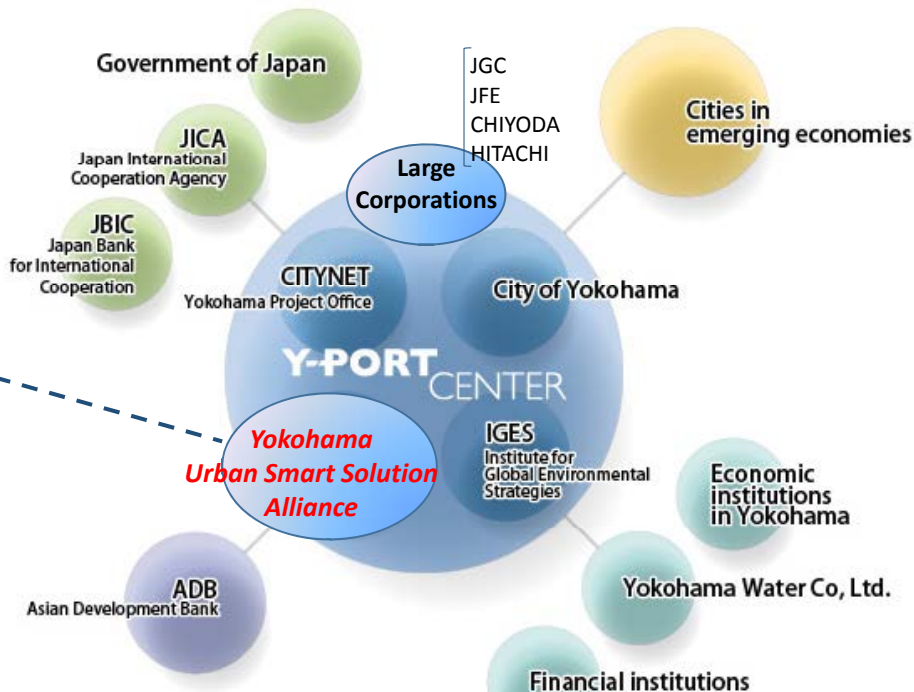
Yokohama Urban Smart Solution

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.



FINETECH Co., Ltd. All Rights Reserved, Copyright ©



Key Member Companies of Y-PORT CENTER



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



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

FINETECH Co., Ltd. All Rights Reserved, Copyright ©



Smart Green Park (Trademark of FINETECH)



Location : Ashikaga City / Japan

FINETECH Co., Ltd. All Rights Reserved, Copyright ©



"SMART GREEN WORLD"... where we will live.



Developing and Expanding Smart Communities

Utilizing Green Energy



Renewable & Biomass Energy Mix

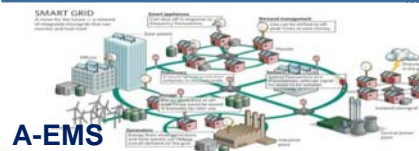


FINETECH's Global Initiative

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



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



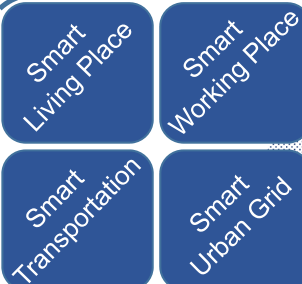
A-EMS

Developing Green New Materials



Green Nano

Green Plastics



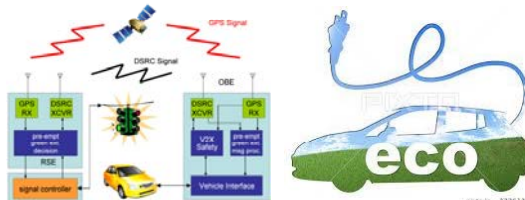
Smart Green Open Innovation Platform

FINETECH Co., Ltd. All Rights Reserved. Copyright ©

Smart Green Island Project Conceptual Mapping for BATAM



Smart Renewable Energy



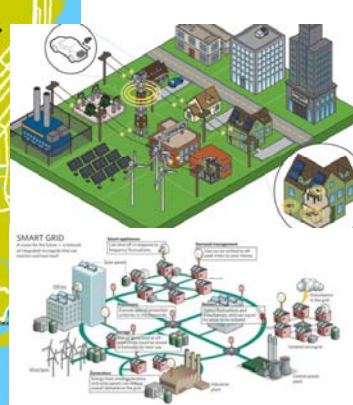
Smart Traffic & Transportation



Smart Living Place



Smart Working Place



Smart Urban Grid

FINETECH Co., Ltd. All Rights Reserved. Copyright ©



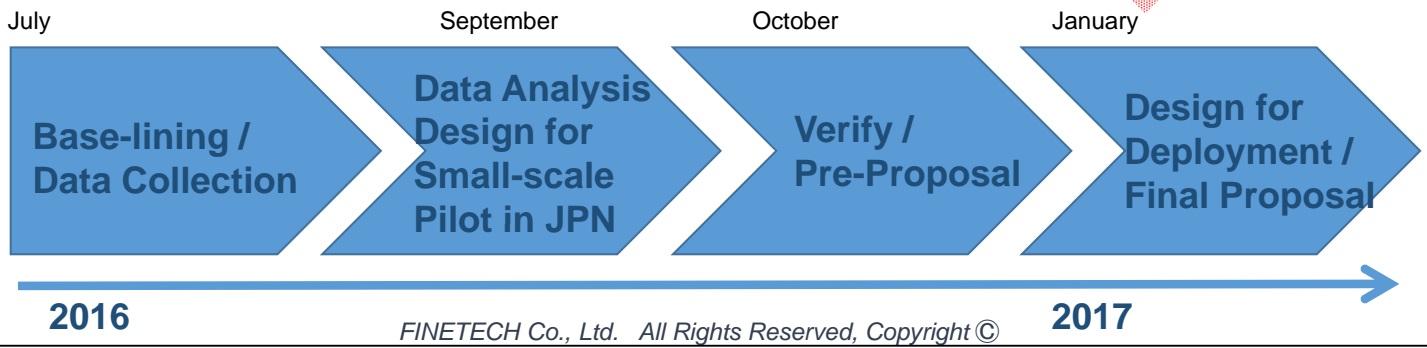
JCM FS / Oil Sludge Treatment



- 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

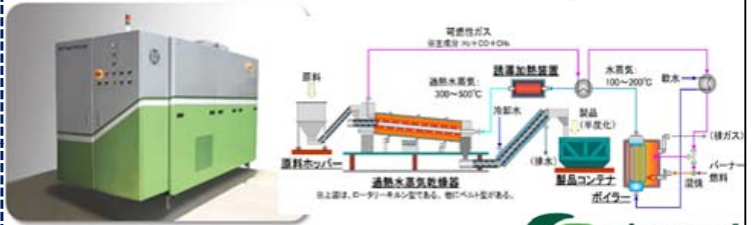


Oil Sludge Treatment / Updated Status



➤ 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.



Oil Sludge Treatment / Updated Status



➤ Capacity Building ②

FINETECH 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.



FINETECH Co., Ltd. All Rights Reserved. Copyright ©



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. Zaini / Batam City Government
 Second from Left: Mr. Kurniawan / CEO of PT DESA AIR CARGO

FINETECH Co., Ltd. All Rights Reserved. Copyright ©

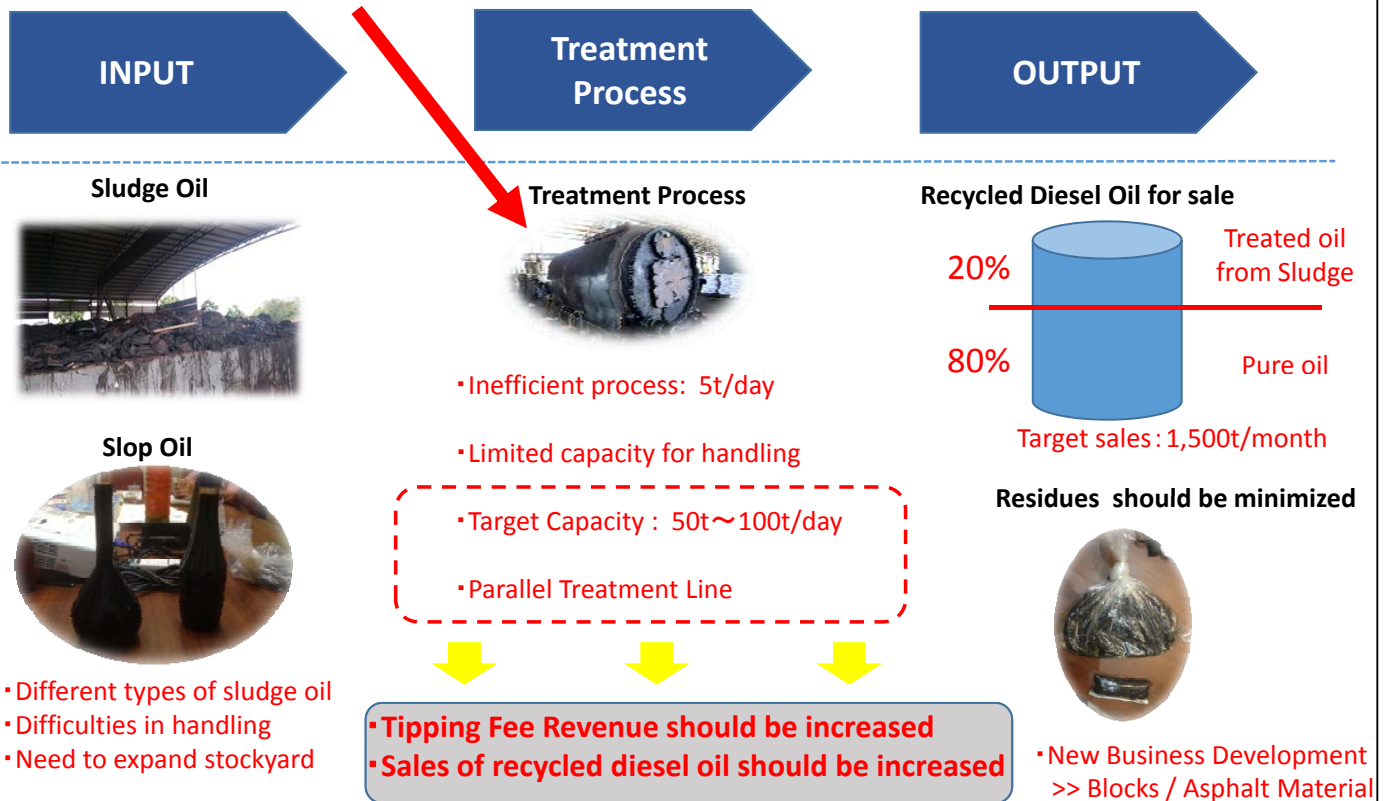


Oil Sludge Treatment / Updated Status



< Simplified Oil Sludge / Slop Oil Treatment Process >

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



FINETECH Co., Ltd. All Rights Reserved, Copyright ©



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

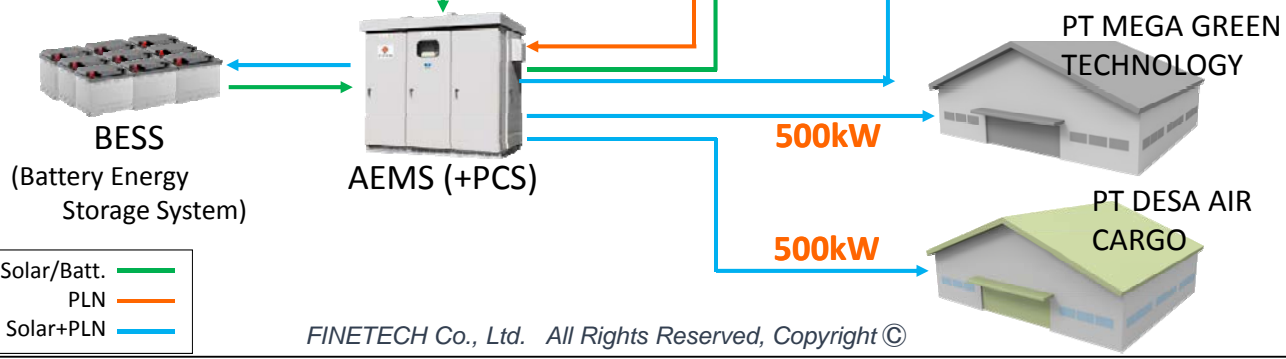
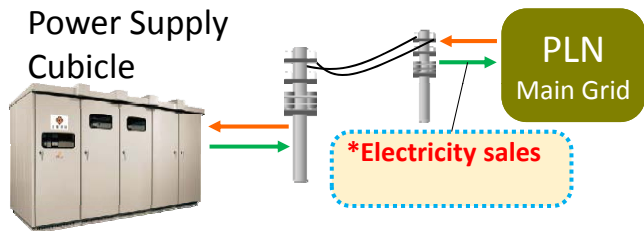
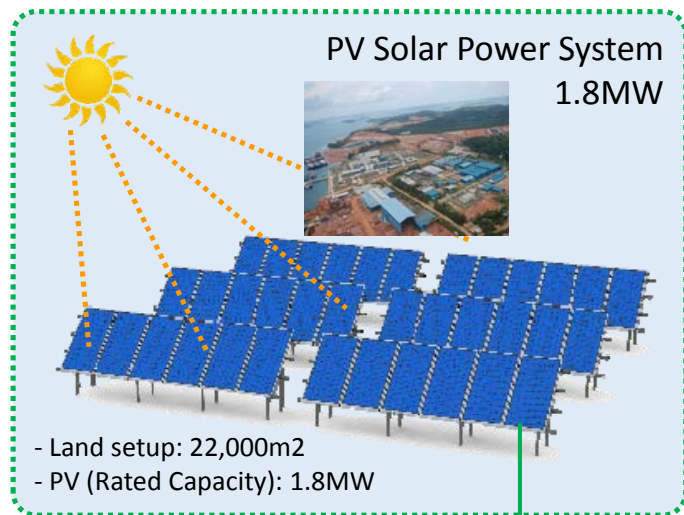


FINETECH Co., Ltd. All Rights Reserved, Copyright ©



Key Opportunity / PV Solar Power Utilization

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



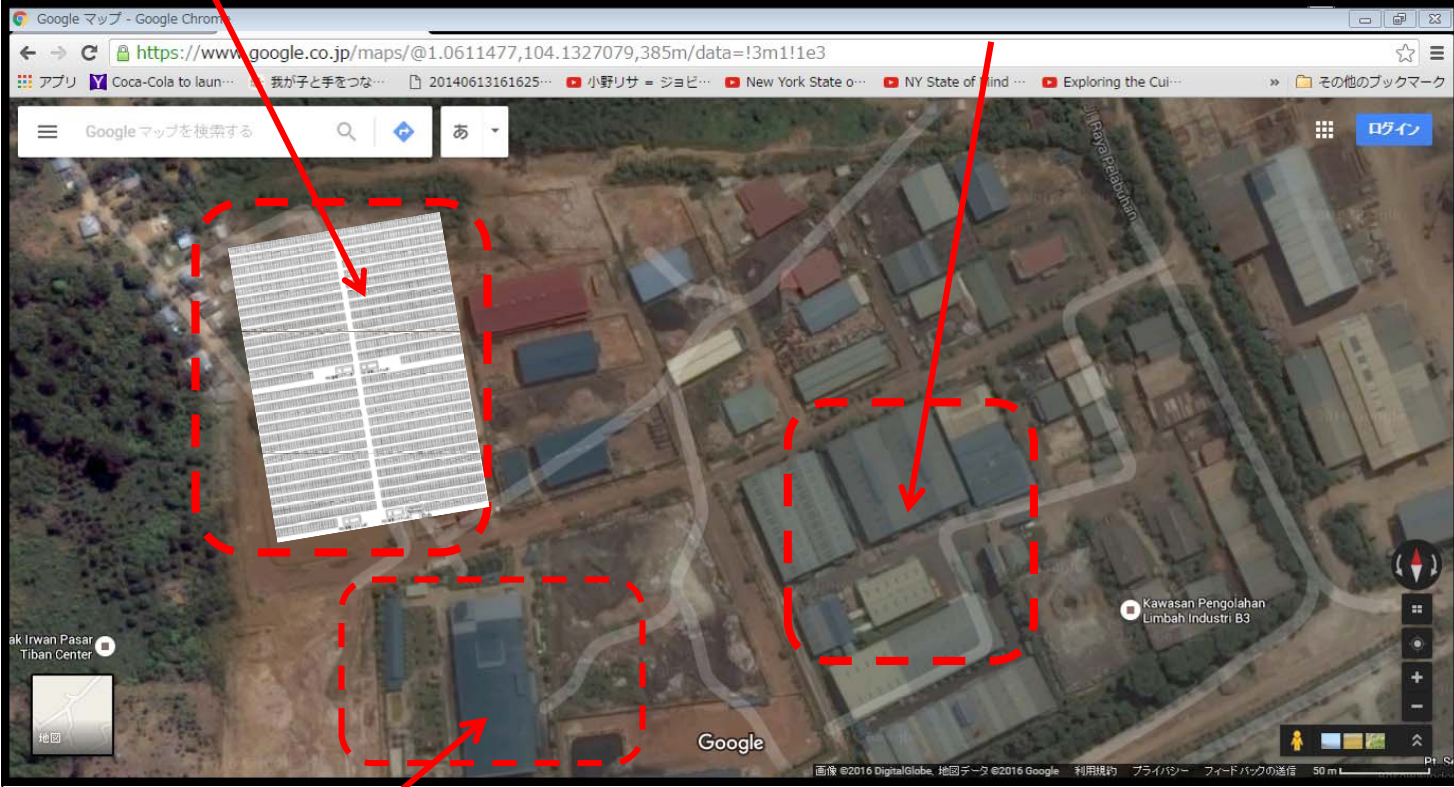
Solar/Batt. — Green line
 PLN — Orange line
 Solar+PLN — Blue line

FINETECH Co., Ltd. All Rights Reserved, Copyright ©

Key Opportunity / PV Solar Power Utilization

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

PT DESA AIR CARGO



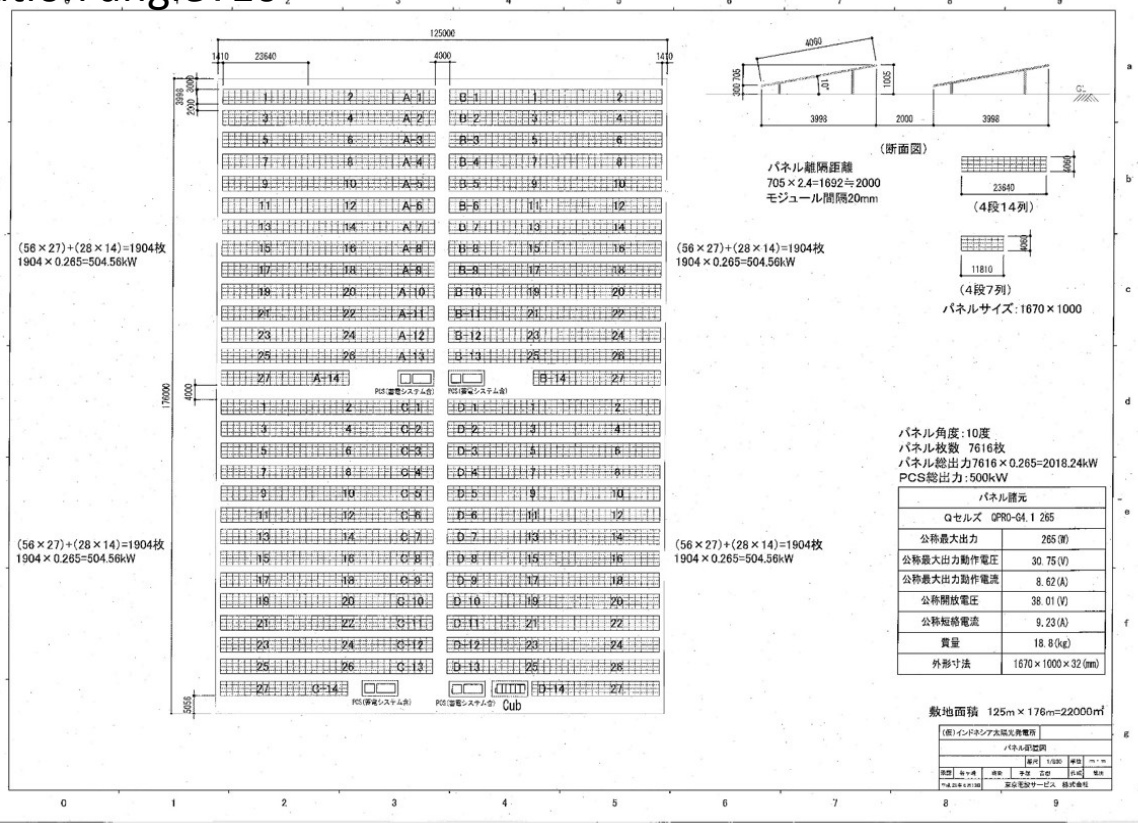
PT MEGA GREEN TECHNOLOGY

Panel Layout

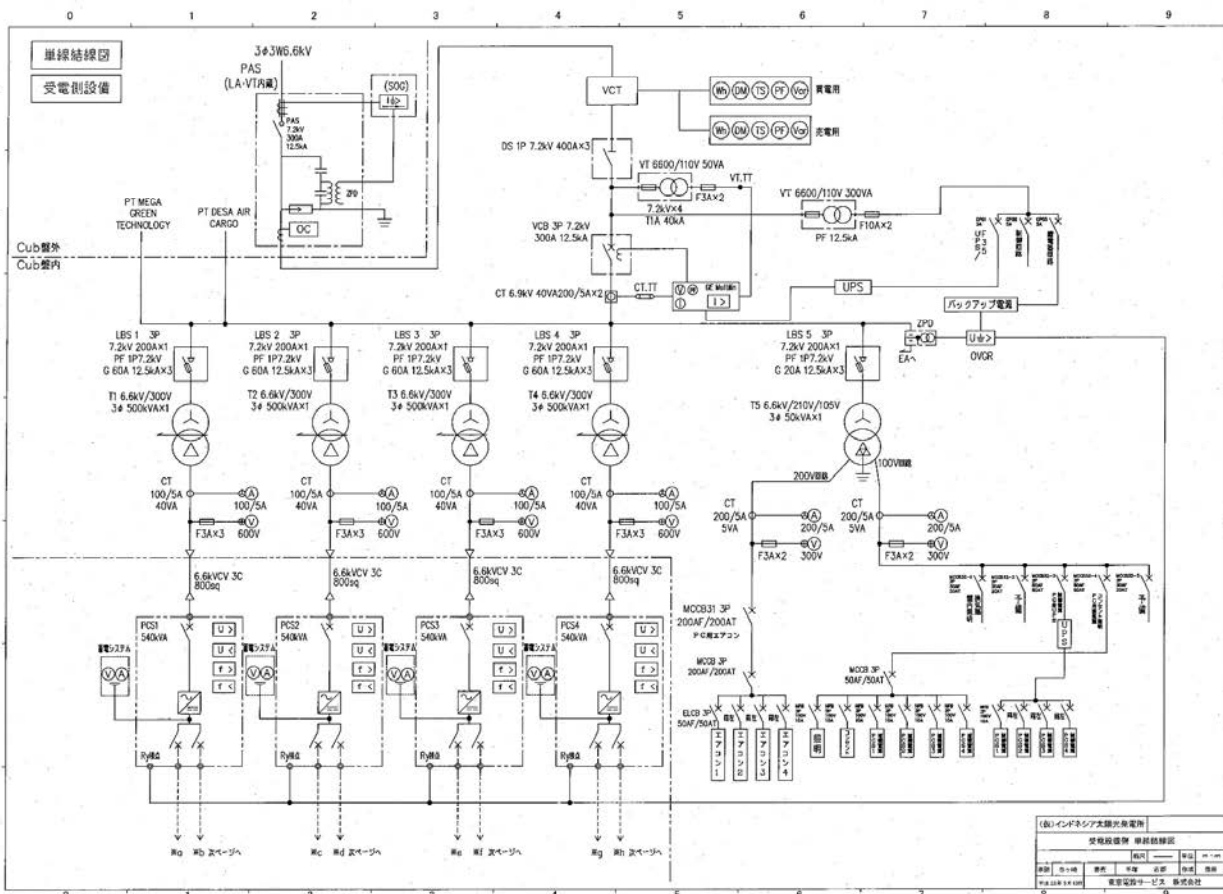
Out Put: DC 2,018.24kw

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

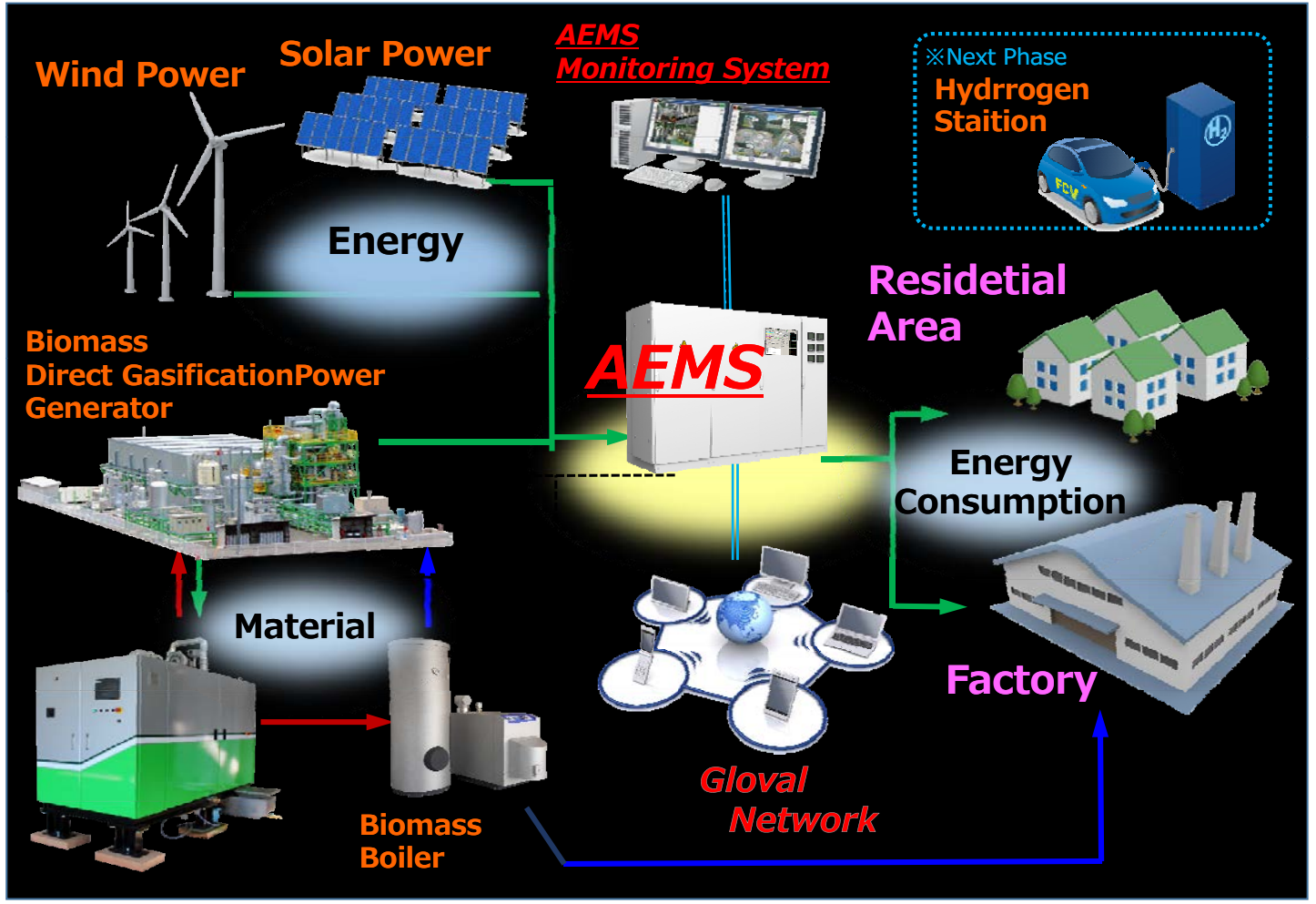
Inclination angle : 10°



Single-line diagram



Key Technology / AEMS (Advance Energy Management System)



Hitachi's Water Solutions

Hitachi, Ltd.
Jan, 2017



Introduction to **AGC**

Asahi Glass Co., Ltd.





Green engineering for a sustainable society

ECO SOLUTIONS

A large, circular graphic with a green-to-yellow gradient and a fine dot pattern, resembling a globe or a natural element. The text 'In Harmony with Nature' is centered within this graphic.

In Harmony with
Nature

[Corporate Information](#)
[Products](#)
[Investor Relations](#)
[CSR/Environment & Society](#)
[Careers](#)
[Contact Us](#)
[HOME](#) < [Products](#)

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

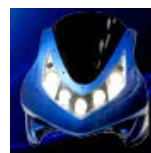
Automotive equipment



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](#)



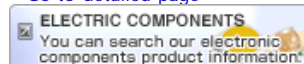
Electronic equipment



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](#)



Applied Electronic Products

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

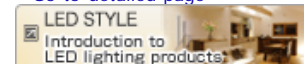
[▶ Go to detailed page](#)



LED Lighting Products

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

[▶ 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°C ~ +40°C *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°C) 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 the provisions 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

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



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).

JCM dapat dikategorikan dalam *cooperative approaches*

Paris Agreement

Cooperative
approaches
(Article6 para 2)

A mechanism
authorized and guided
by UNFCCC (Article6 para
4)

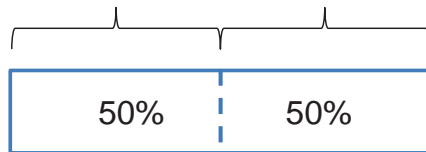
A framework for
non-market
approaches
(Article6 para 9)

- 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)

- Sampai saat ini JCM di Indonesia berlaku sampai tahun 2020. Keberlanjutan sampai tahun 2030 (Paris Agreement), 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

Model Project

Subsidi oleh MOE Biaya dari partisipan proyek



Biaya awal untuk instalasi alat baru

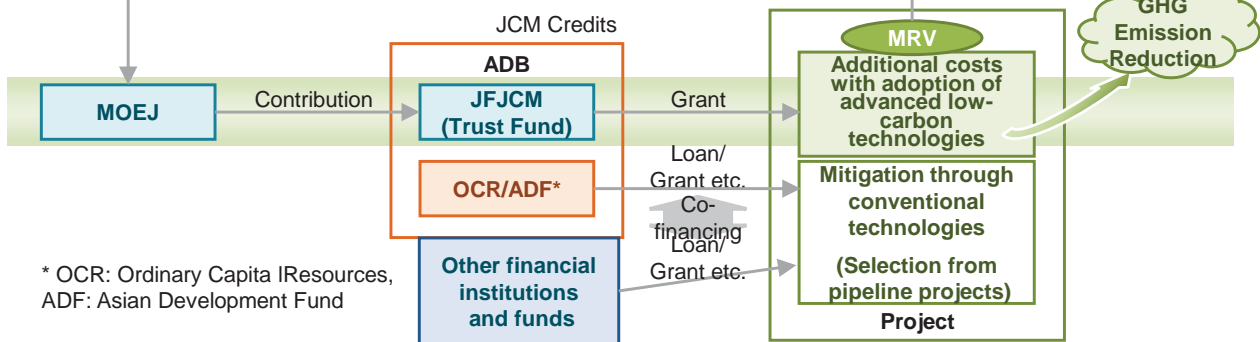
Demonstration Project

Subsidi oleh METI Biaya dari partisipan proyek



Jumlah subsidi sesuai hasil negosiasi dengan METI

ADB Trust Fund – JFJCM



Pembiayaan JCM di Indonesia (Berdasarkan data Juli 2016)

Subsidi dan hibah Pemerintah Jepang untuk skema JCM Indonesia

Hibah untuk studi kelayakan ± US\$ 10 juta

Subsidi Proyek pembangunan rendah karbon ≥ US\$ 37 juta

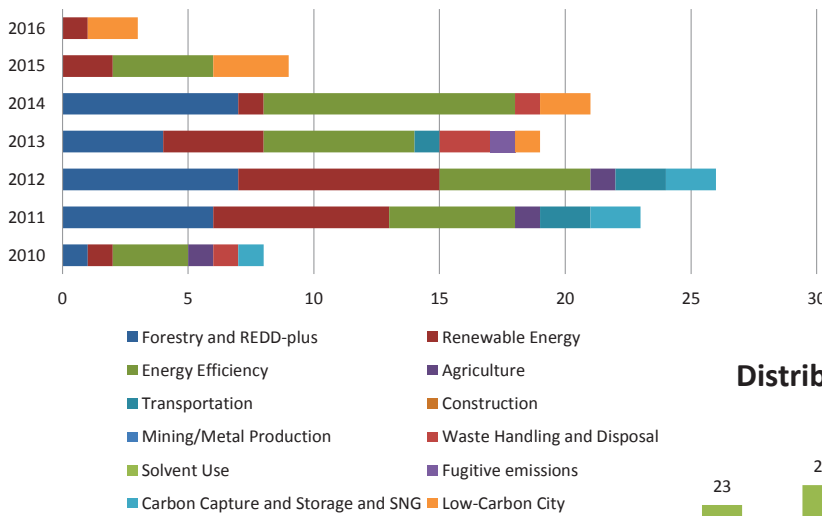
Subsidi yang diterima mampu memobilisasi dana...

investasi rendah karbon dari pihak swasta & BUMN Indonesia sehingga ≥ US\$ 113 juta

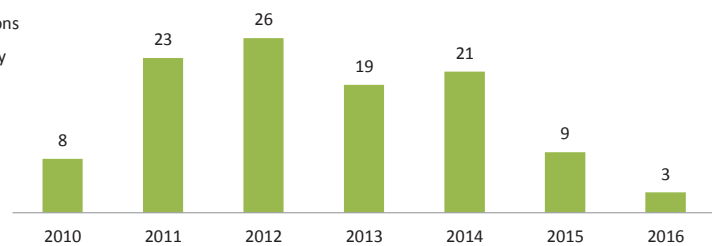
Nilai investasi proyek JCM di Indonesia saat ini ± US\$ 150 juta

*Penghitungan berdasarkan estimasi

Distribusi FS JCM per sektor (2010-2016)

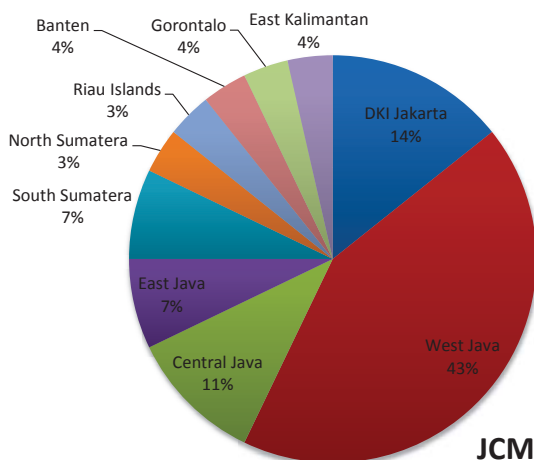


Distribusi JCM FS per tahun (2010 - 2016)

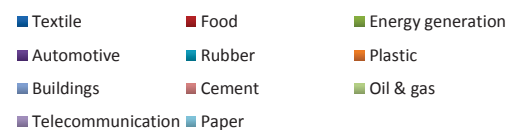


*Pada tahun 2016, bantuan FS hanya diberikan kepada skema *city-to-city* dan FS large scale

JCM Project location (2013 - 2016)



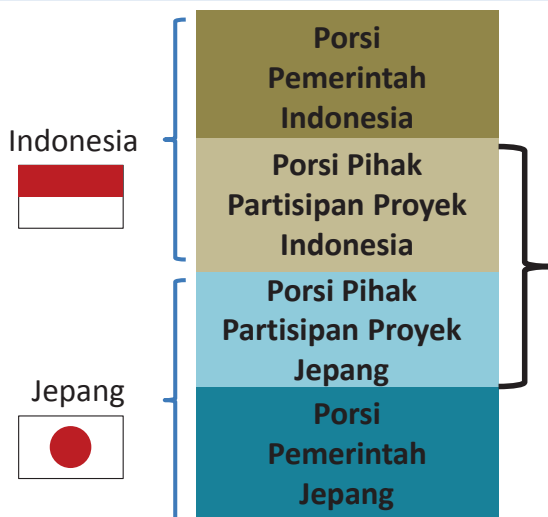
JCM Projects per industry (2013 - 2016)



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?

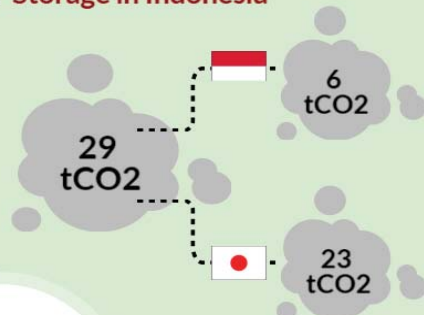
1. Pemerintah Indonesia akan mendapatkan bagian penurunan emisi karbon.
2. Pihak swasta sebagai partisipan proyek akan saling berdiskusi terkait dengan penurunan emisi yang akan mereka dapatkan. Jumlah ini bisa sesuai dengan jumlah investasi masing-masing pihak.

Proyek yang telah menerbitkan kredit penurunan emisi

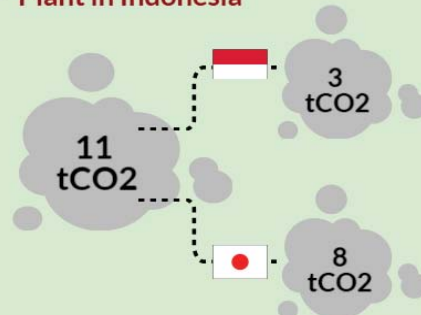
Penerbitan Kredit Karbon

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 tCO₂/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



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

- 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 kerjasama antara Kyoto dengan Solo
- Tiap kota mempunyai tantangan yang berbeda dalam implementasinya.



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



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



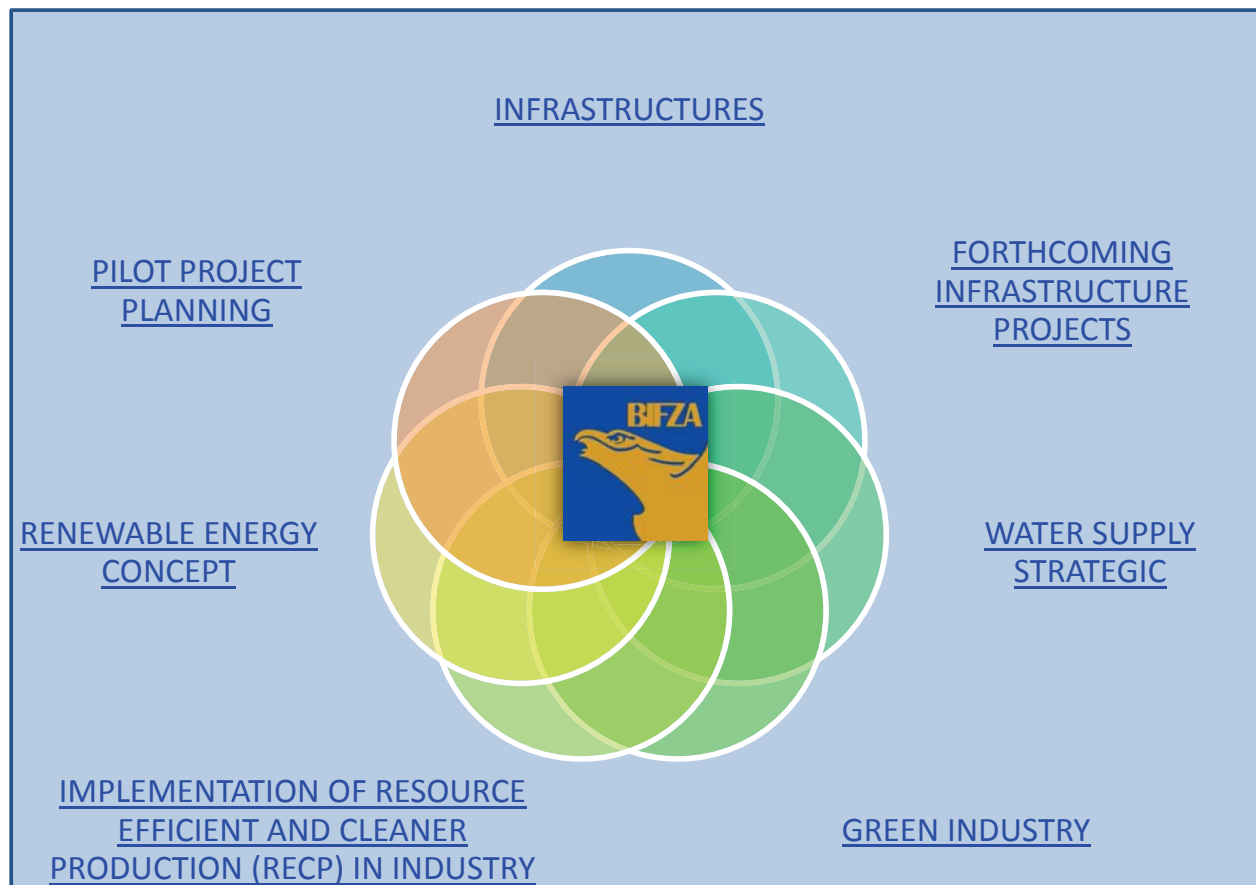
Batam Indonesia Free Zone Authority (BIFZA)

Final Seminar:

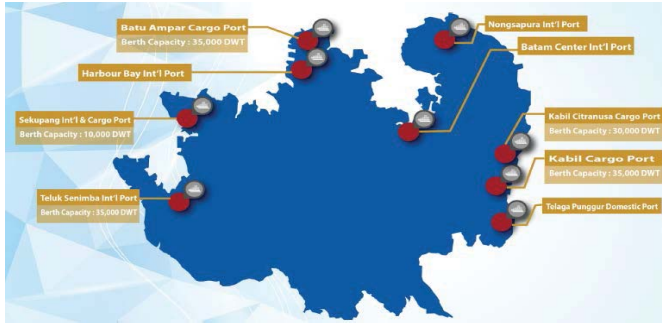
City-to-City Collaboration between Batam City and Yokohama City



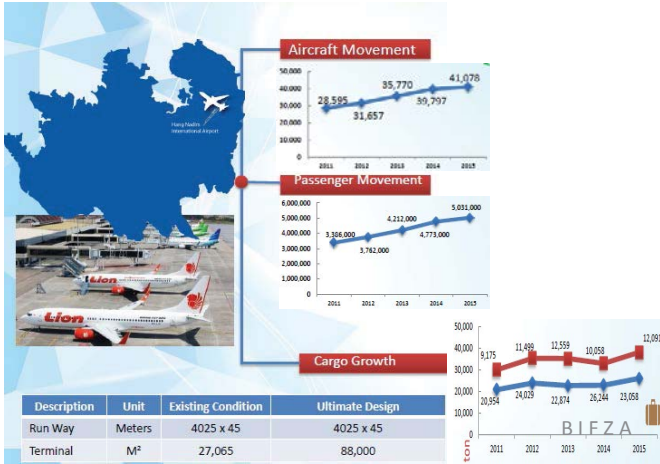
Batam, January 19th 2016
Harris Hotel - Batam Centre



SEA & CARGO PORT



HANG NADIM INTERNATIONAL AIRPORT



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

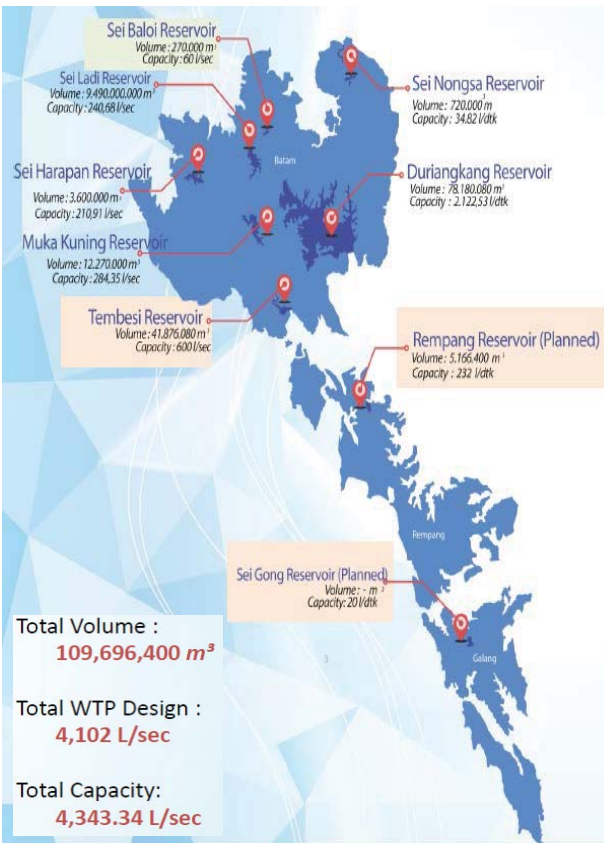
Arterial Road	474,78 km
Collector Road	352 km
Local Road	850 km
Total Roads Constructed	1,676.78 km

Internet & Telecommunication

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



FRESH WATER SUPPLY



PUBLIC GAS FACILITY



INFORMATION TECHNOLOGY

IT SERVICE CENTRE

IT Solution Services	IT Training Centre	Data Centre Services	Disaster Recovery Centre
<ul style="list-style-type: none"> - IT Auditing - IT Consultancy Services - Professional Development Centre - Training Solution - Integrated Service Centre - Cloud Computing - Mirroring Services 	<ul style="list-style-type: none"> - Programming - Database - Network - Web Security - Ethical Hacking <p>Organized by BIFZA Cooperation with other Training Institutions (Inixindo, Sciencom, Securax) and with Some Principals (Microsoft, Cisco, Oracle, HP)</p>	<ul style="list-style-type: none"> - Server Co-location - Mirroring Services - Cloud Computing - Web Hosting - Storage on Demand - Virtual Private Server - Dedicated Server 	<ul style="list-style-type: none"> - Back Up Server - Mirroring Services





FORTHCOMING INFRASTRUCTURE PROJECTS



BATU AMPAR CARGO PORTS



TANJUNG SAUH TRANSHIPMENT
CONTAINER PORT



SEKUPANG CARGO PORT



TOLL ROADS (Phase 1)



BATAM LIGHT RAIL TRANSIT



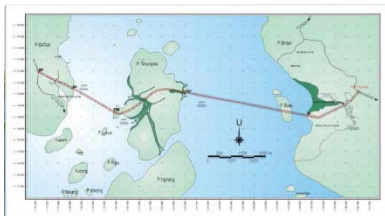
TERMINAL 2
HANG NADIM AIRPORT



CARGO TERMINAL OF HANG
NADIM AIRPORT BATAM



BATAM WWTP (Phase 2)



BATAM - BINTAN BRIDGE



INTEGRATED SERVICE UNIT

BIFZA

5



WATER SUPPLY STRATEGIC



Sei Harapan Dam



Sei Ladi Dam



MukaKuning Dam



Duriangkang Dam



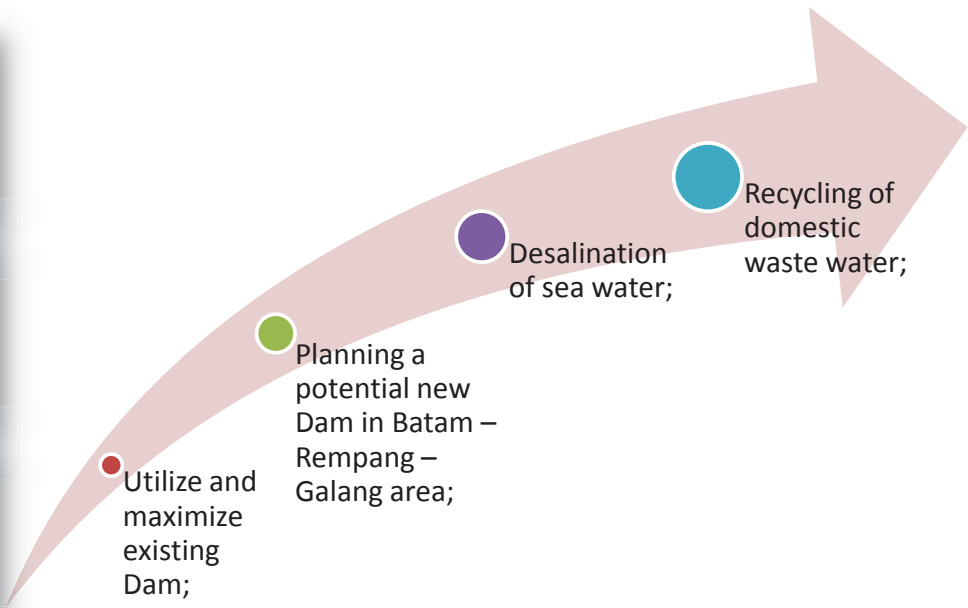
Rempang Dam



Nongsa Dam



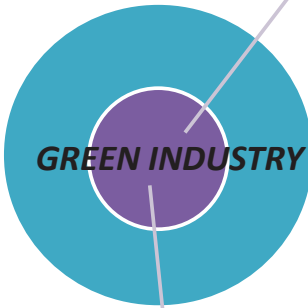
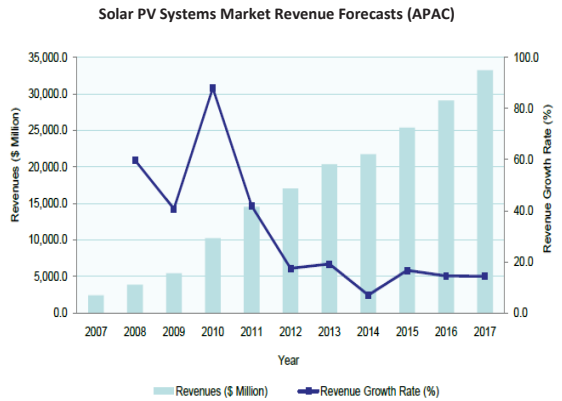
Tembesi Dam



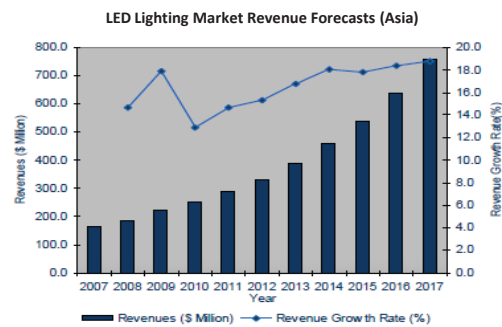


One of BIFZA's focus industries:

Photovoltaic (PV)



Light-Emitting Diode (LED)



Source: BIFZA's Roadmap, 2011

BIFZA

7



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:

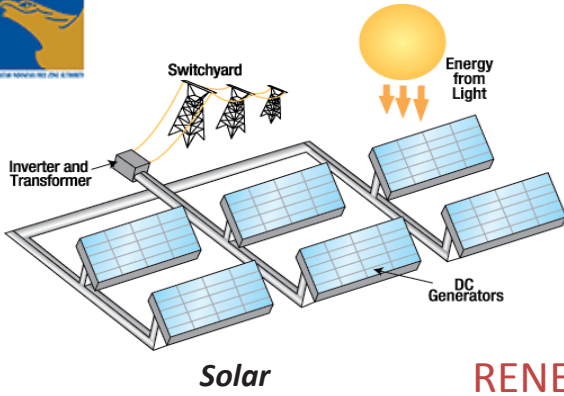


Participants (9 companies):

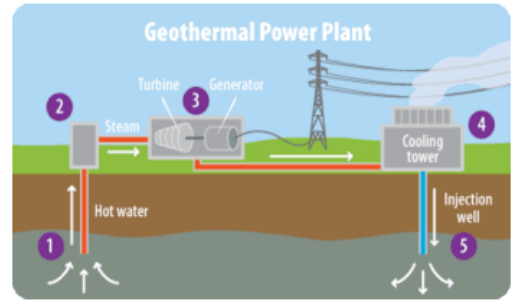
- PT. Ellite Packaging – PT. WIK Far East Batam –
- PT. Win Win Rubber Technologies –
- PT. Three Cast Indonesia – PT. Doelken Bintan –
- PT. Bredero Shaw Indonesia –
- PT. Citra Tubindo, Tbk – PT. Raajratna Wire –
- PT. Sri Indah Aluminium Extrusion

BIFZA

8



Solar

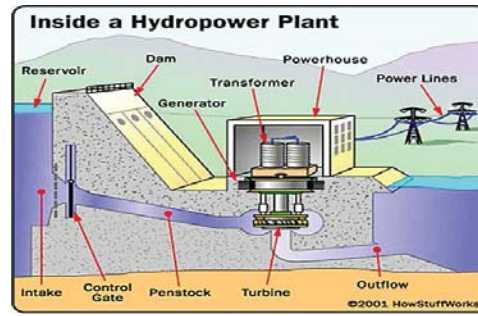


Geothermal

RENEWABLE ENERGY CONCEPT



Biomass



Hydropower



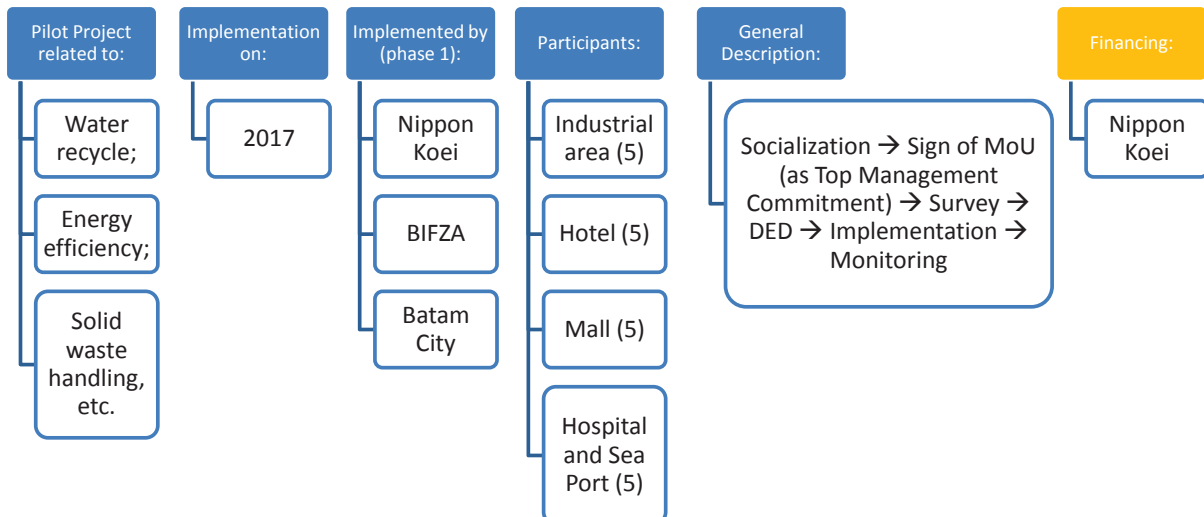
Wind

BIFZA

9



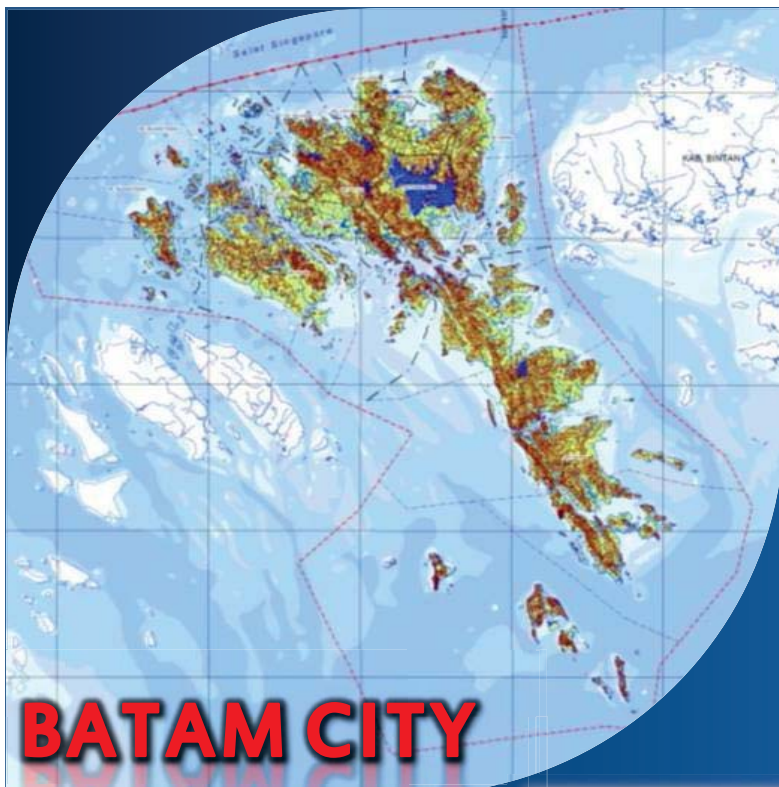
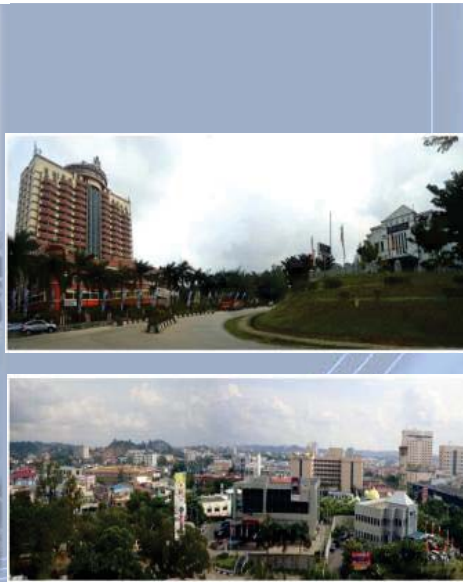
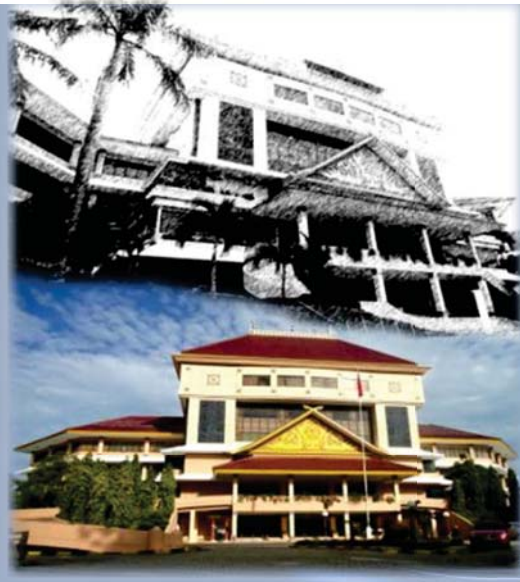
PILOT PROJECT PLANNING



Thank You



BATAM GREEN CITY ACTION PLAN



- 12,5** sea miles from Singapore
- 4.265** Km² of area
1.082 Km² 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



KOTA BERKELANJUTAN 2050

Kota Berkelanjutan dan Berdayasaing
untuk Kesejahteraan Masyarakat



Strong Neighborhoods
Walkable
Affordable
Comfortable
Cultural
Connectivity



Green Openspace
Green Waste
Green Transportation
Green Water
Green Energy
Green Building



Smart Economy
Smart People
Smart Governance
Smart Mobility
Smart Environment
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

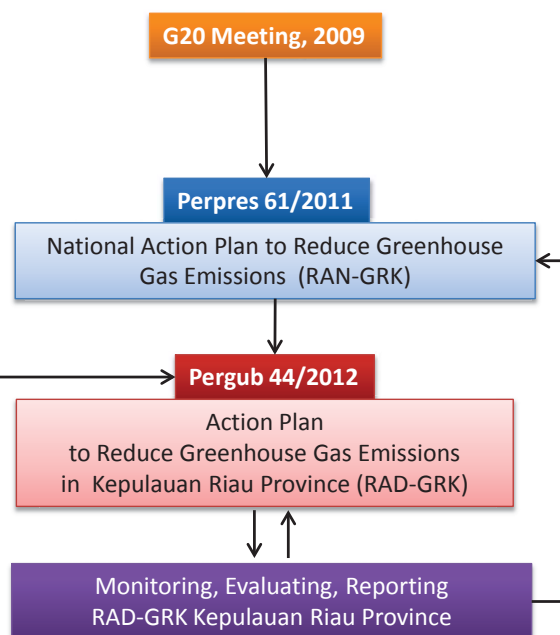
Kebijakan dan Strategi Pembangunan Perkotaan Nasional

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.



SK Gub 498/2012
Establishment of Team coordination to formulize RAD-GRK in 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

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)

1st phase:
Preparation to implement by ministries and national agencies

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

5th Phase:
Mechanisms for Monitoring, Evaluating, Reporting of RAN-GRK along with its verification

2010-2012	2013-2015	2015-2017	2017-2019	2020
	2nd Phase: Implementation of RAN-GRK and Monitoring, Evaluating, Reporting		4th Phase: RAN-GRK start to be verify	5th Phase: achievement of GHG emissions reduction target (26%)



BATAM TOWARDS GREEN & SMART CITY



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

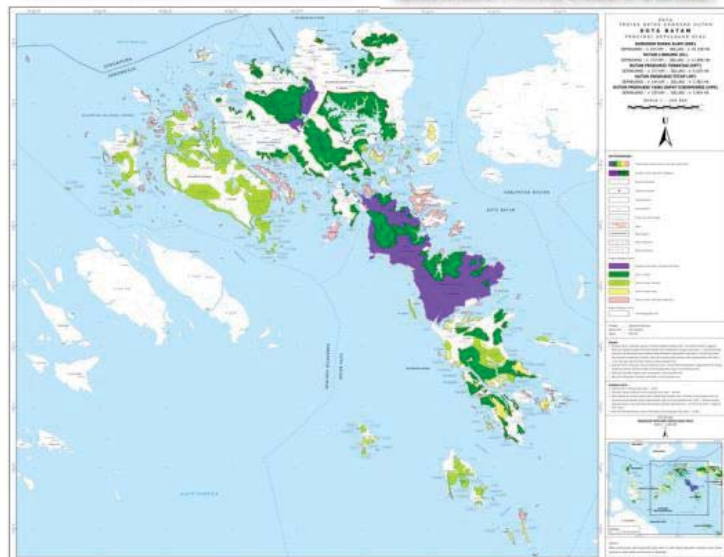


Strategic Issues 2016-2021

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 MNGEMENT -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 - Enhancement 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 vehicle -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 vehicle -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



Where we are

Generation 1

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



Generation 2

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

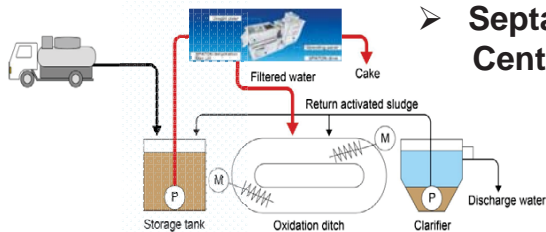


Smart/Green Infrastructure: (Wastewater)

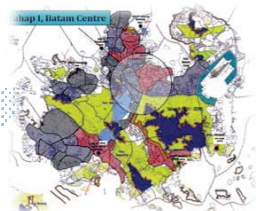
Phase approaching Project

Generation 1

Where we are



- 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

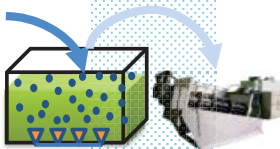
Smart/Green Infrastructure: Industry

Phase approaching Project



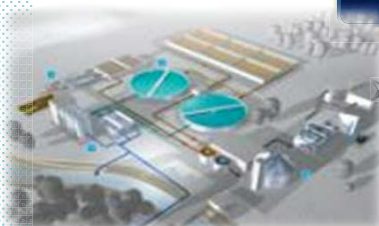
Generation 1:

Where we are



- 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

Phase approaching Project



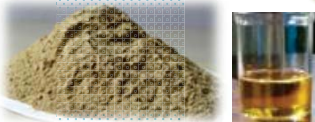
Where we are

Generation 1:



- 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

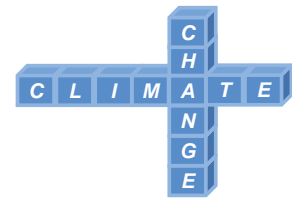
Generation 3:



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



THANK YOU



Project Mapping

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

January 19, 2017

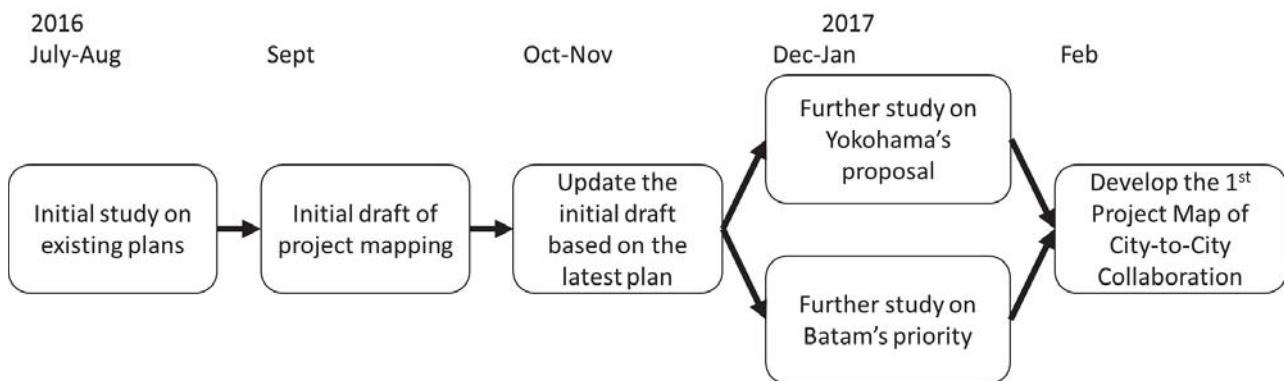
SAITo Tetsuya

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
 - Strengthening and diversifying industry
 - Community development
 - Rural area development

• Green city program

Three pillars for Sustainable city 2015-2045

Kota Layak yang aman dan nyaman	Kota Hijau yang berkelanjutan iklim dan bencana	Kota Cerdas yang berdaya saing dan berbasis teknologi
Strong Neighborhoods	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
	Resilience	

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

Misi
Mission

1. Memantapkan Pengelolaan Kawasan Investasi Yang Professional
Enhancing a Professional Investment Region Management
2. Mewujudkan kawasan investasi yang memiliki infrastruktur yang berbasis Teknologi Informasi dan Komunikasi (TIK)
Attaining An Investment Region Sustained With Infrastructures For Information And Communication Technology Base
3. Mewujudkan kawasan investasi yang berwawasan lingkungan
Accomplishing an Environmentally Friendly Investment Region

Strategi Pengembangan 2017
Development Strategy 2017

1. Perbaiki Iklim Investasi dan Iklim Usaha/
Improvement of Investment and Business Environment
2. Perbaiki Sistem Promosi yang Terintegrasi/
Improvements of Integrated Promotion System
3. Pengembangan dan Peningkatan Infrastruktur/
Development and Improvement of Infrastructure
4. Regulasi dan Kelembagaan/
Regulation and Institution
5. Peningkatan dan Pengembangan SDM/
Improvement and Development of Human Resources

- BIFZA's forthcoming project list

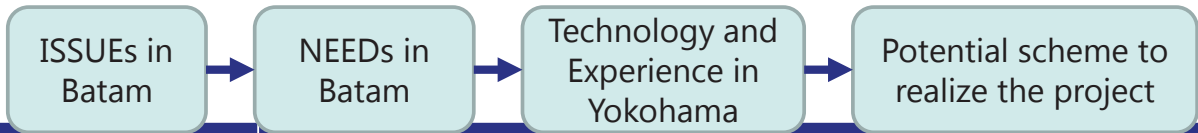


Project Map

Initial Draft of Tables to Develop the Project Mapping (As of 29 November 2016)

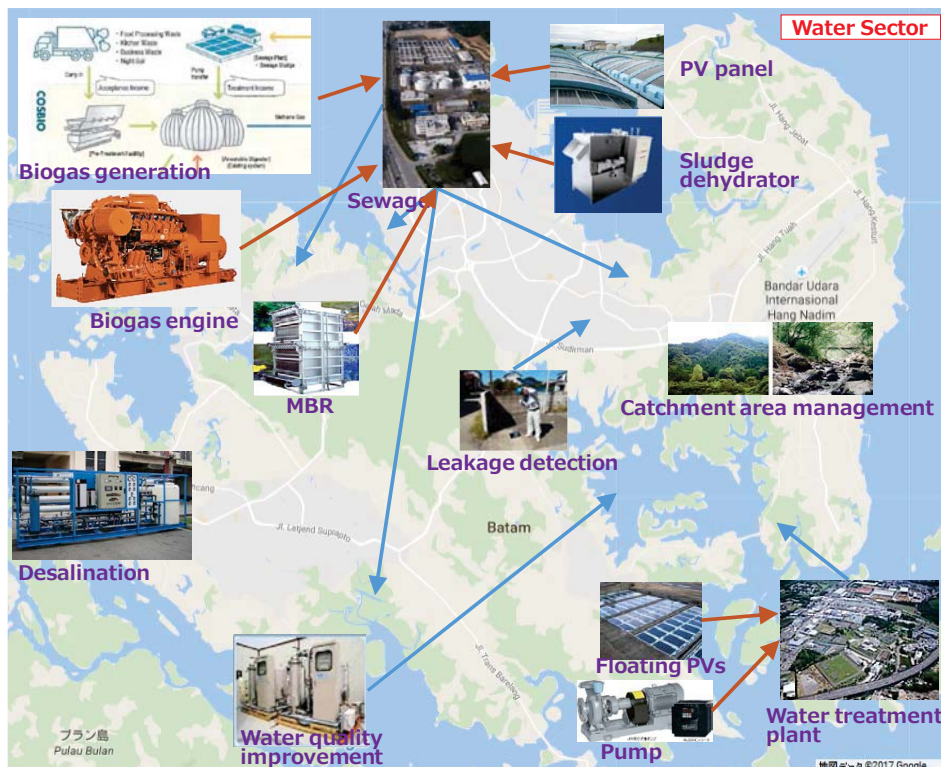
Plan	Strategic Direction	Area of each STRONG	Target of each STRONG	Mission of BIFZA	Development Strategy 2017 with	Strategic City Program	Strategic City Program	Expected activities	Expected Technologies	Competitive in Tokushima City	(for reference)
Target/Project	2015-2020	2015-2020	2015-2020	2015-2020	2015-2020	2015-2020	2015-2020	2015-2020	2015-2020	2015-2020	2015-2020
Economic Development	Industrial Park Development	...	...	...	...	...	...	...	...	...	...
	Business Center Development	...	...	...	...	...	...	...	...	...	...
	Office Building Development	...	...	...	...	...	...	...	...	...	...
	Hotel Development	...	...	...	...	...	...	...	...	...	...
	Commercial Building Development	...	...	...	...	...	...	...	...	...	...
Infrastructure Development	Transportation Infrastructure	...	...	...	...	...	...	...	...	...	...
	Water and Sewerage Infrastructure	...	...	...	...	...	...	...	...	...	...
Social Development	Education Infrastructure	...	...	...	...	...	...	...	...	...	...
	Healthcare Infrastructure	...	...	...	...	...	...	...	...	...	...
Environmental Development	Green Space Development	...	...	...	...	...	...	...	...	...	...
	Waste Management Infrastructure	...	...	...	...	...	...	...	...	...	...

Project Map

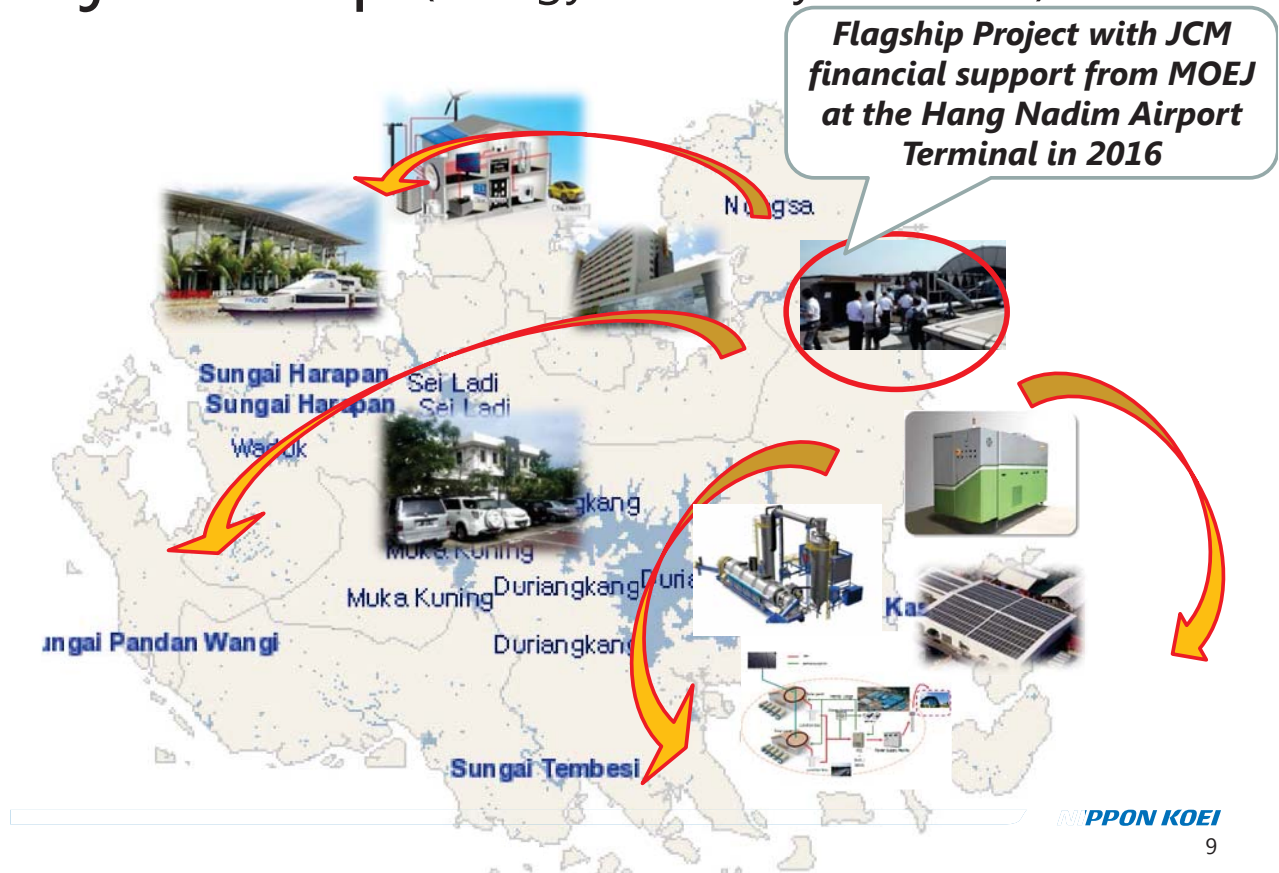


Sector	Issues	Technology
Water Resource	Water quality management in reservoir	Aeration Ozone treatment
	Desalination	MBR / etc
	Water recycling	MBR / etc
	Watershed conservation	Forest management with local people
Water purification	Water treatment plant	MBR / etc
Water distribution	Energy saving	High 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)



Project Map (Energy efficiency solutions)

Phase approaching by JCM



Generation 1



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



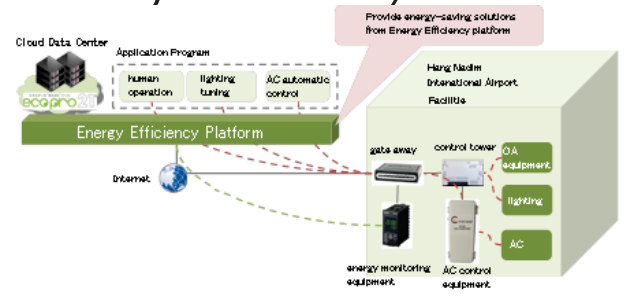
Generation 2



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



Overall progress of the study



Preliminary approval by GEC/MOEJ with JCM Financial Support

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

January 15, 2017

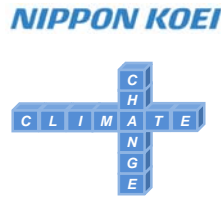
Overall progress of the study

Project Map(Smart and Green Island)

The map shows several project locations: S. Tering, Nongs, Sungai Harapan, Sei Ladi, Waduk, Muka Kuning, Duriangkang, Sungai Kemam, Sungai Pandan Wangi, and Sungai Tembesi. The map is surrounded by icons and labels for different project components:

- High efficient equipment, Thermal energy:** Represented by an icon of industrial machinery.
- CEMS/ Smart Urban Grid:** Represented by a network diagram icon.
- HEMS/BEMS:** Represented by a control panel icon.
- Smart Traffic & Transportation:** Represented by icons of a car and a traffic light.
- Smart Renewable Energy:** Represented by icons of solar panels, biomass, and oil.

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

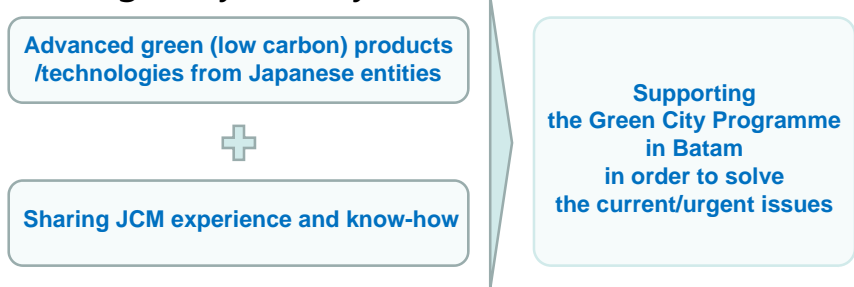
January 23, 2017
SAITo Tetsuya
Nippon Koei Co., Ltd.

Contents

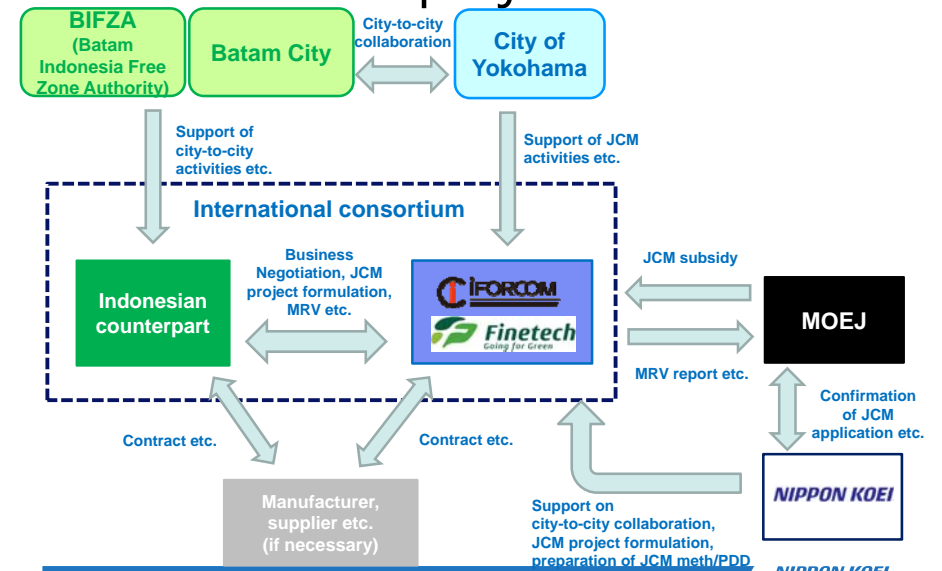
1. Introduction
2. F/S Result
3. Project Map
4. Toward Sustainable Collaboration

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.



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

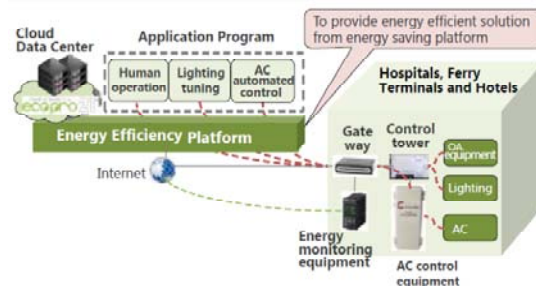
Major events (including plans)

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 <i>City-to-City Collaboration Seminar in Tokyo</i>
Feb, 2017	<i>Finalization of project map (1st version) and F/S plan</i>
Mar, 2017	<i>Reporting and Application for F/S 2017</i>
Apr-May, 2017	<i>Application for Model Project 2017</i>

- 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



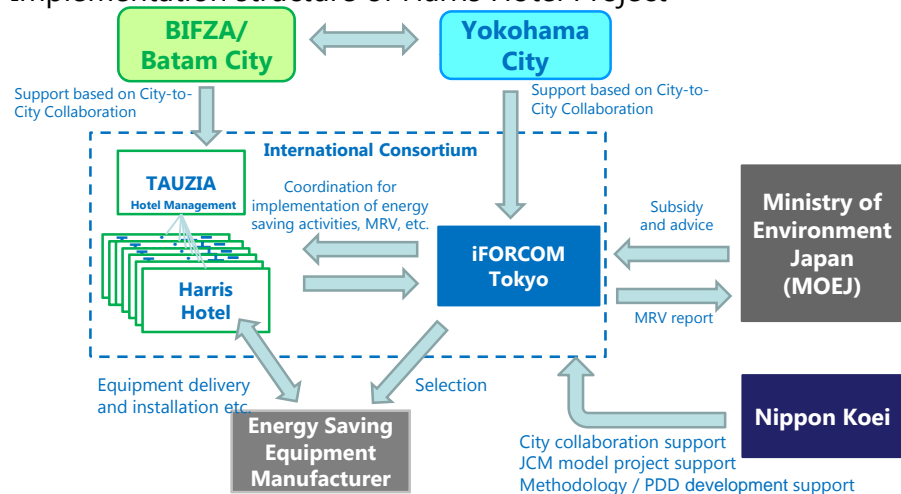
F/S on Energy Saving Solutions

- 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	Despite 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.

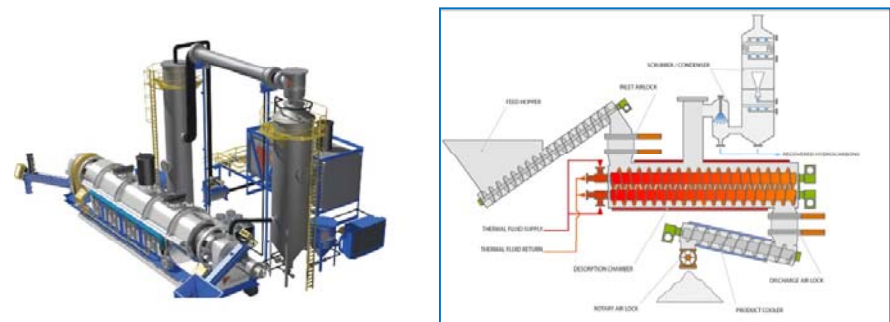


Image of Thermal desorption Unit

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

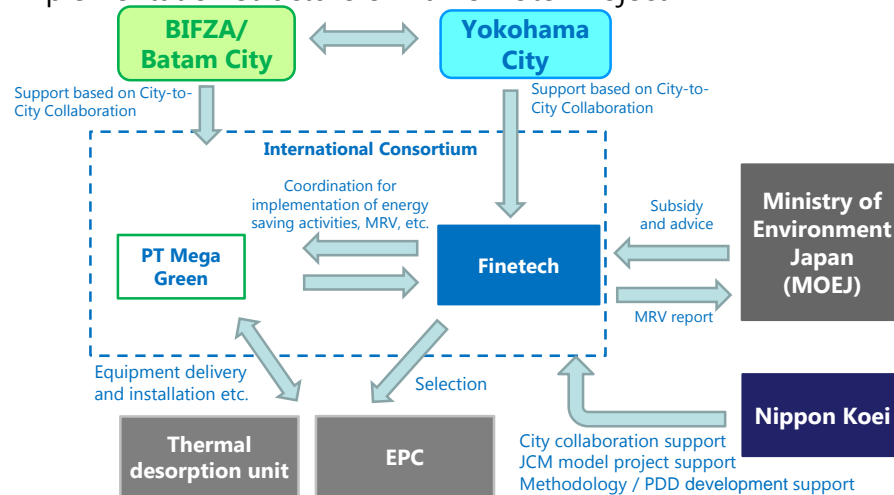


Experiment and Analysis



F/S on Thermal Desorption Units

Implementation structure of Harris Hotel Project

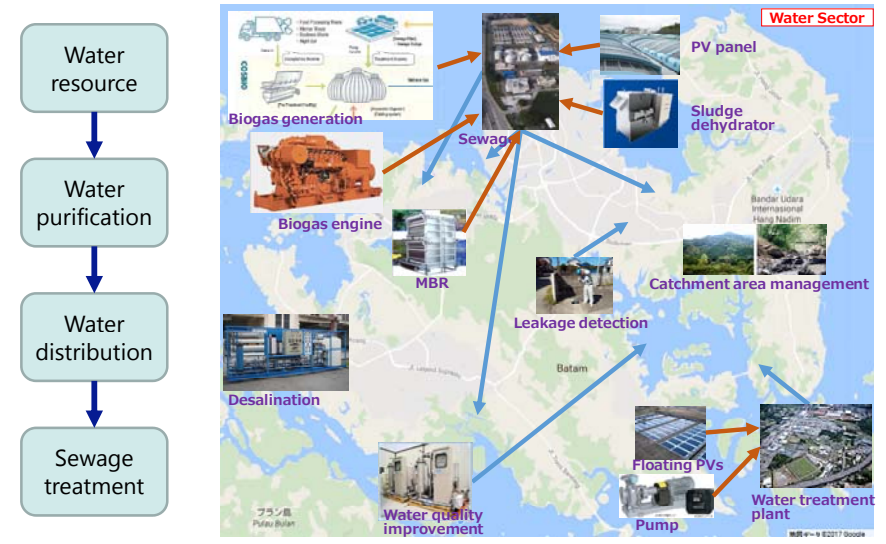


Project Map

- 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 management 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)	- 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	- Normalization of dam/reservoir - Landscaping - Community Resettlement - 6 reservoirs - Operating Tembesi Estuary Dam - Development of Gong Estuary Dam - Developing SWRO in Belakang Padang (Small Island) - Sludge Treatment Plant - Wastewater Treatment Plant (WWTP) - 4 New Zone WWTP (Batu Ampar, Sagulung, Tanjungplayu, 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 (Solar power) - Suido 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 detection (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	[Strengthening 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 (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, Electric - 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