環境省
Ministry of the Environment

Environmental Infrastructure Promotion Strategy and Japanese government support system

JICA Clean City Initiative

January, 2022

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International Strategy Division Global Environmental Bureau
Ministry of the Environment Japan

Environmental Infrastructure Promotion Strategy by Ministry of the Environment Japan

- Contribution for Carbon Neutrality and SDGs including environment became a main topic in the Infrastructure System Overseas Promotion Strategy
- MoEJ promotes their **supports for decarbonization** transition in Indo-Pacific **by environmental infrastructure** in the public private relationship

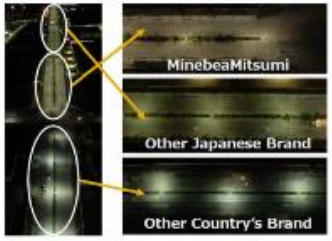
Promoting city to city cooperation in and out of Japan,
Transferring experience and know-how to abroad

Policy Dialogue → **Support for making Strategy, plan, and regulation** → **Formulation of Infrastructure case** → **Funding Support**

Developing a business environment in public private platform
(Japan Platform for Redesign; sustainable Infrastructure)

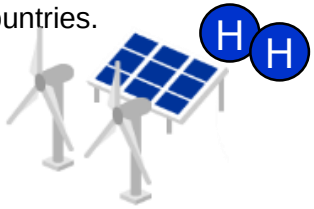
Energy saving / renewable energy infrastructure

Installed 5600 LED street lights in Cambodia



Renewable hydrogen

Produce and storage renewable hydrogen in a third country, and transport to supply and use in island countries.



Adaptation

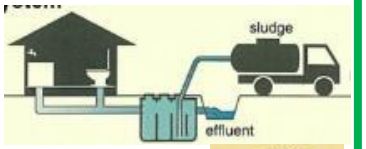
Developed Climate Change Risk assessment methodology for Coastal Airports Operations.

Waste to Energy plant

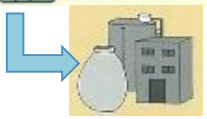
Installed first WtE plant in Myanmar（2017）

Johkasou

Disseminated in China, Viet Nam etc. in need to treat household wastewater.



Purified by microbes etc.



Overview of ASEAN-Japan Climate Change Action Agenda2.0

- At the Japan-ASEAN Summit Meeting, Japan put forward the "ASEAN-Japan Climate Change Action Agenda 2.0".
- Taking into account **the three pillars on transparency, mitigation, and adaptation**, the government of Japan, as a whole, has significantly expanded and strengthened its efforts towards the transition to decarbonization.

Agenda2.0(2021)

Black; Continuation menu from 1.0
Red; New cooperation menu
Blue; Menu already shown in AMS all

1. Transparency

MRV, Inventory, Satellite data(GHG, land), SOER6, workshop on CF and LCA, risk disclosure of financial institution

2. Mitigation

(1) Long term Strategy and Policy Making

Scenario formulation, Policy dialogue, Platform for Redesign 2020

(2) Decarbonization of Each Sector

Fluorocarbons, Renewable Energy, Waste-recycle, Water-Air(co-benefit), Green Logistics(ship, port, airport, transport)

(3) Dissemination of Decarbonization Technologies through the JCM and related schemes

JCM(promote and scale-up by private finance), Co-Innovation (demonstration), JPRSI (public-private platform), Grant assistance for NGO project, Innovative technology(CCUS, clean Hydrogen), green investiment

(4) Expansion of Zero Carbon Cities

City-to-City Collaboration, International forum, Smart City

3. Adaptation

AP-PLAT, Disaster Prevention(Mapping exercise, dam upgrading), Meteorological satellite data

Results of 7th Japan – Viet Nam Environment Policy Dialogue

■Date and time: Wednesday, November 24, 2021 13:30-14:30
■Place: Tokyo
■Attendees:
<MOEJ> Dr. Yamaguchi, Minister for the Environment;
Mr. Ono, Director-General, Global Environment Bureau, others.
<MONRE> Mr. Tran Hong Ha, Minister of Natural Resource and Environment; Mr. Hoang Van Thuc, Deputy Director General, Viet Nam Environment Agency, others.

■Outline
Ministers…
• Signed the **"Joint Cooperation Plan (JCP) on Climate Change toward Carbon Neutrality by 2050"**, to achieve 2050CN in Vietnam.
• Exchanged the JCP during document exchange ceremony in the presence of Vietnamese Prime Minister Chinh and Japanese Prime Minister Kishida, later on the same day.
• Discussed the cooperation on climate change and marine plastic litter, based on the Joint Cooperation Plan.

Picture: Public Relations Office Cabinet Office

■Summary of Joint Cooperation Plan
・Areas of enhanced cooperation:
(a) Development of LTS;
(b) City-level LTS and decarbonizing projects through City-to-City cooperation;
(c) Partnership to Strengthen Transparency for co-Innovation (PaSTI);
(d) Joint Crediting Mechanism (JCM);
(e) Transfer of leading decarbonizing technologies under the JCM, including hydrogen and CCUS;
(f) Carbon pricing;
(g) GHG Inventories;
(h) Mobilization and support of the private sector in mitigation projects;
(i) Waste-to-Energy (WtE); and
(j) management of fluorocarbons.

・Other themes: marine plastic litter; Holding the 2nd Viet Nam – Japan Environment Week in December 2021;

City-to-City Collaboration Program

■ Cooperate to expand Zero Carbon Cities to realize “decarbonization domino effect”, by promoting city-to-city collaborations between ASEAN cities and Japanese cities and sharing advanced efforts of cities.

- Creating low carbon project efficiently and effectively
- Designing the local systems to promote low carbon society
  Ex) low carbon action plan and technology evaluation criteria etc.
- Capacity building for local staffs

Promotion of private investment

Self-sustained development of foreign city

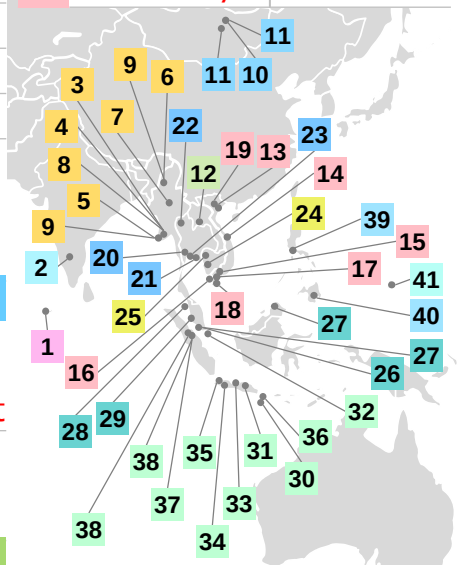
Transferring low-carbon technology to other fields

Cities joining the city to city collaboration program (FY2013～2021)

Participation by 13countries40cities･regions
Japan16local government

＊Project in FY2021

	Foreign city	Japanese city
Maldives		
1	Malé	Toyama
India		
2	Bangalore	Yokohama
Myanmar		
3	Yangon (region)	Kitakyushu
4	Yangon(city)	Kawasaki
5	Ayeyarwady	Fukushima
6	Sagaing	Fukushima
7	Mandalay	Kitakyushu
8	Yangon City	Fukuoka
9	Sagaing Region, Ayeyarwady Region	Fukushima
Mongolia		
10	Ulaanbaatar	Sapporo･Hokkaido Government
11	Ulaanbaatar city and Tuv aimag	Sapporo
Lao PDR		
12	Vieng chan	Kyoto
Vietnam		
13	Hai Phong	Kitakyushu
14	Da Nang	Yokohama
15	Ho Chi Minh	Osaka
16	Kiên Giang and others	Kobe
17	Can Tho	Hiroshima
18	Soc Trang Province	Hiroshima
19	Hanoi City	Fukuoka



Thailand		
20	Bangkok (Bangkok Port･Laem Chabang Port)	Yokohama (Yokohama Port Pier)
21	Rayong	Kitakyushu
22	Chiang Mai	Kitakyushu
23	Eastern Thailand(EEC)	Osaka
Cambodia		
24	Phnom Penh	Kitakyushu
25	Siem Reap	Kanagawa
Malaysia		
26	Iskandar Development Area	Kitakyushu
27	Iskandar Development Area ・ Kota Kinabalu	Toyama
28	Penang and others	Kawasaki
29	Kuala Lumpur	Tokyo
Indonesia		
30	Denpasar	Tokyo Union
31	Surabaya	Kitakyushu
32	Batam	Yokohama
33	Semarang※	Toyama
34	Bandung	Kawasaki
35	Special Capital Territory of Jakarta	Kawasaki
36	Bali※	Toyama
37	Rokan Hulu, Riau	Kawasaki
38	Rokan Hulu Regency and Pekanbaru City	Kawasaki

※Joint project for Bali and Semarang

Philippines		
39	Quezon	Osaka
40	Davao	Kitakyushu
Palau		
41	Koror	Kitakyushu
Chile		
42	Renca, Santiago	Toyama

Zero Carbon City International Forum (March 2021)

○**Zero Carbon City International Forum was successfully held between March 17 and 18, 2021, under the cooperation by UNFCCC Secretariat. The forum invited various cities and relevant organizations in Japan and from overseas.**

○**The Forum announced the following as Japanese model initiatives to promote decarbonization of cities:**

1) Zero Carbon City (320 cities as of March 17 covering over 100 million citizens)
2) the Council for National and Local Decarbonization (Roadmap toward Decarbonization Domino Effect)
3) City-to-City Collaboration Projects (e.g.: declaration to zero carbon city of Kuala Lumpur through cooperation by Tokyo Metropolitan Government)

○**The Forum shared the advanced efforts implemented domestically and overseas in discussion of cities' measures concerning the following 4 themes:**

1) Role of local governments and policy planning towards zero carbon
2) Integrated management of regional energy and resources- Promotion of local production and local consumption
3) Cooperation/collaboration between finance and business sectors for zero carbon
4) Redesigning urban infrastructure with stakeholders

○**Importance of cities' decarbonization measures directed to local communities and boost by the central governments and international organizations were fully recognized. At the same time, participants determined to develop the advanced efforts, to spread a "decarbonization domino effect" around the world.**

Participants：
<total 28 National/Local Governments and Relevant Organizations from 15 Countries Listed Below>
Japan, the United States, the United Kingdom, Germany, Finland, Indonesia, Malaysia, Viet Nam, Australia, India, China, Korea, Kenya, Morocco, and Colombia

<3 Central Government Entities>
Ministry of the Environment of Japan (Minister); the United States (John Kerry, Special Presidential Envoy for Climate); and the United Kingdom (Ken O'Flaherty,COP26 Regional Ambassador to Asia-Pacific and South Asia)

<11 International Organizations and Institutes>
UNFCCC (Patricia Espinosa, UNFCCC Secretariat), UNEP, UNHABITAT, ICLEI, IRENA, World Bank, ADB, GCF, UITP, ICC, and CoR

Zero Carbon City International Forum (March 17, 2021)

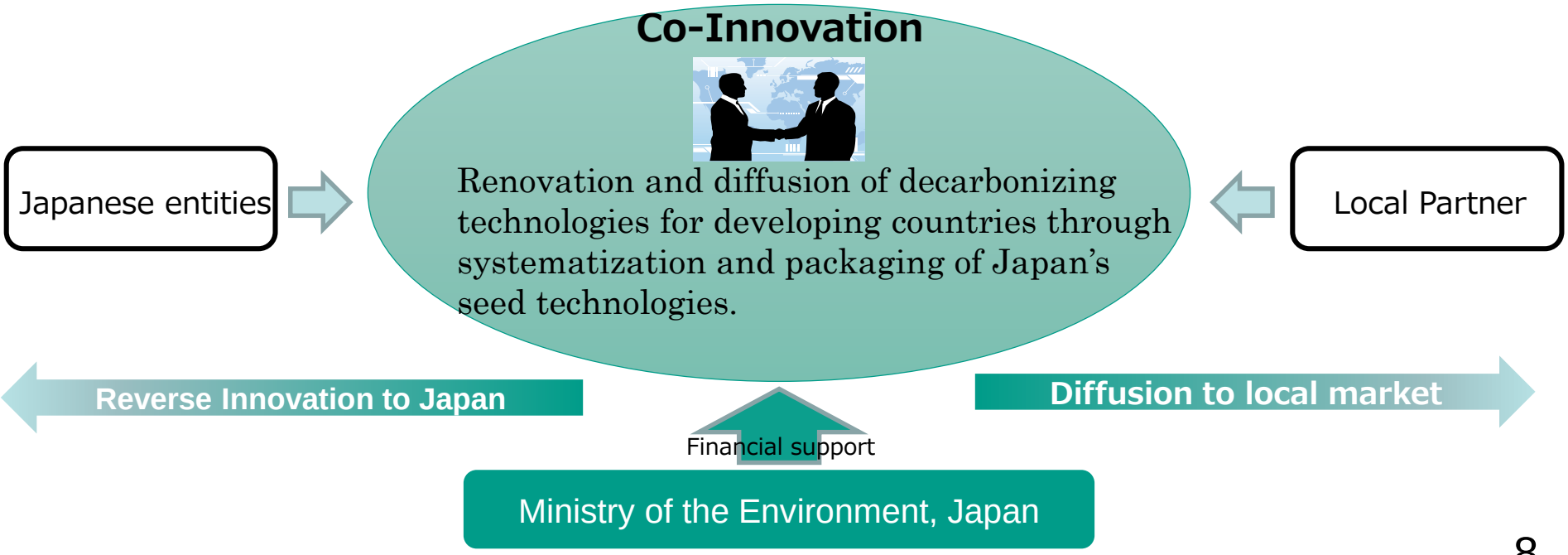
Financing Program to Demonstrate Decarbonization Technology for Realizing Co-Innovation (7 m$)

Objectives and Characteristics

- Facilitating improvement and demonstration of seeds of advanced decarbonizing technologies in Japan to meet sustainable development needs in developing countries.
- Systematizing and packaging technologies, and facilitating collaboration (Co-Innovation) between Japanese entities and partners in developing countries.
- Serving as “potential JCM projects” and a trigger for the City-to-City Collaboration Programs.

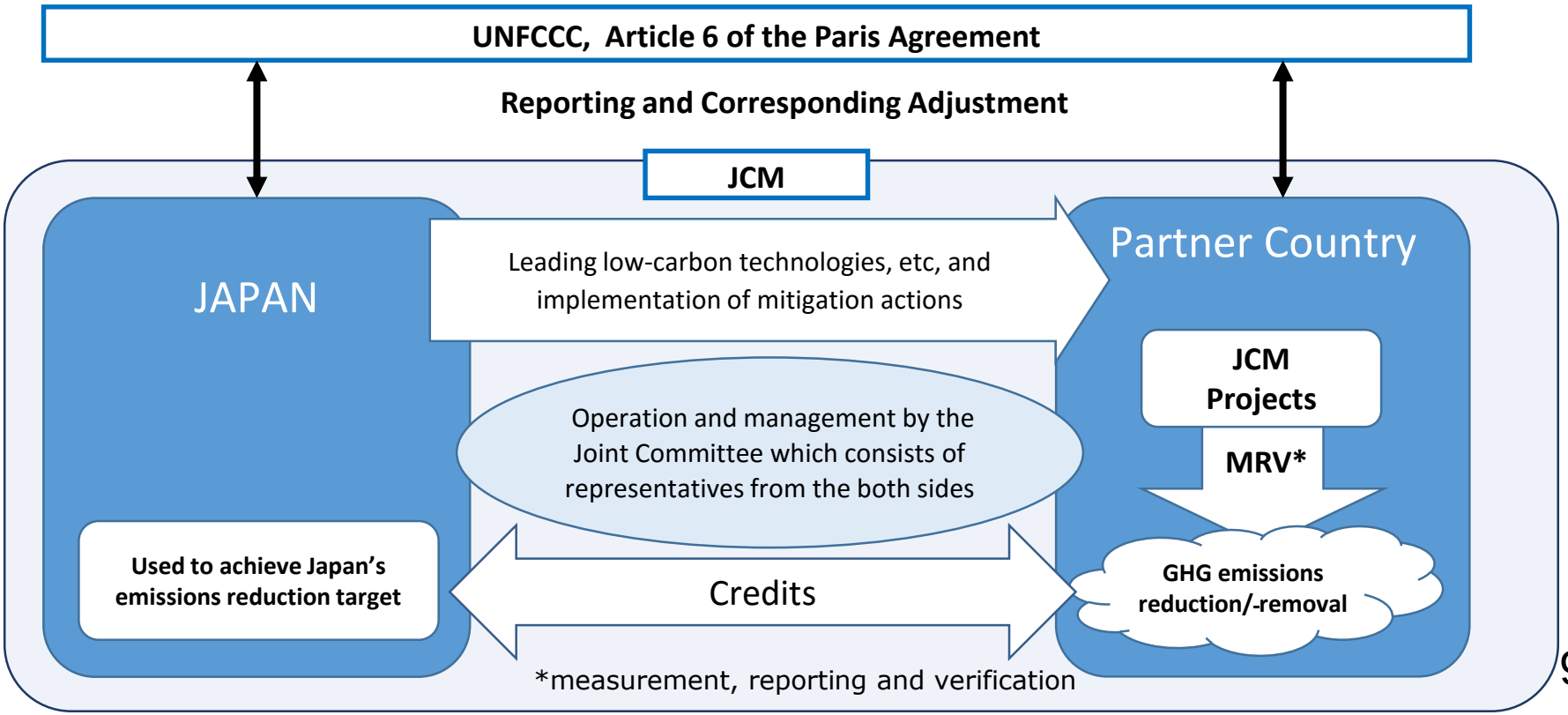
Requirements and other information

- Participants of the model project shall be representative entity of an international consortium that consists of a Japanese entity and a foreign entity(ies) ,etc.



Basic Concept of the JCM

- Facilitating diffusion of leading decarbonizing technologies ,etc and infrastructure as well as implementation of mitigation actions, and contributing to sustainable development of developing countries.
- Appropriately evaluating contributions from Japan to GHG emissions reduction or removal in a quantitative manner and use them to achieve Japan's emissions reduction target.
- Contributing to the ultimate objective of the UNFCCC and use of market mechanisms, including the JCM, is articulated under Article 6.



JCM Model Projects by MOEJ

Budget for projects starting from FY 2021 is approx. 8.3billion JPY (approx. USD 90million) in total by FY2023

(1 USD = 100 JPY)

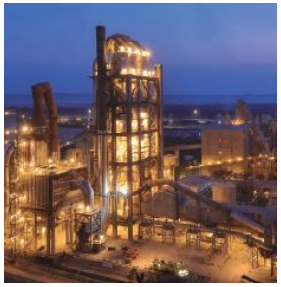
Government of Japan

※Includes collaboration with projects supported by JICA and other governmental-affiliated financial institute.

Finance part of an investment cost (**less than half**)

Conduct MRV and expected to deliver JCM credits issued

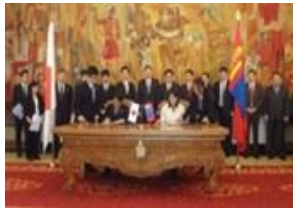
International consortiums
(which include Japanese entities)



- Scope of the financing: facilities, equipment, vehicles, etc. which reduce CO_2 from fossil fuel combustion as well as construction cost for installing those facilities, etc.
- Eligible Projects: starting installation after financing is awarded and finishing installation within three years.

JCM Partner Countries

- Japan has held consultations for the JCM with developing countries since 2011 and has established the JCM with Mongolia, Bangladesh, Ethiopia, Kenya, Maldives, Viet Nam, Lao PDR, Indonesia, Costa Rica, Palau, Cambodia, Mexico, Saudi Arabia, Chile, Myanmar, Thailand and the Philippines.



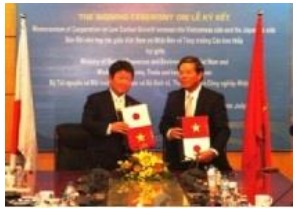
Mongolia
Jan. 8, 2013
（Ulaanbaatar）

Bangladesh
Mar. 19, 2013
(Dhaka)

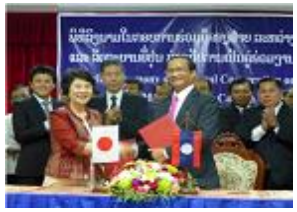
Ethiopia
May 27, 2013
(Addis Ababa)

Kenya
Jun. 12, 2013
(Nairobi)

Maldives
Jun. 29, 2013
(Okinawa)

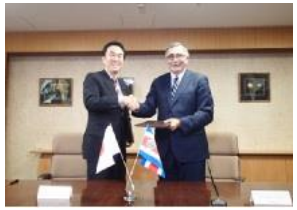


Viet Nam
Jul. 2, 2013
(Hanoi)



Lao PDR
Aug. 7, 2013
(Vientiane)

Indonesia
Aug. 26, 2013
(Jakarta)



Costa Rica
Dec. 9, 2013
(Tokyo)

Palau
Jan. 13, 2014
(Ngerulmud)

Cambodia
Apr. 11, 2014
(Phnom Penh)

Mexico
Jul. 25, 2014
(Mexico City)

Saudi Arabia
May 13, 2015

Chile
May 26, 2015
(Santiago)

Myanmar
Sep. 16, 2015
(Nay Pyi Taw)

Thailand
Nov. 19, 2015
(Tokyo)

Philippines
Jan. 12, 2017
(Manila)

JCM Financing Programme by MOEJ (FY2013～2021) as of Nov., 2021

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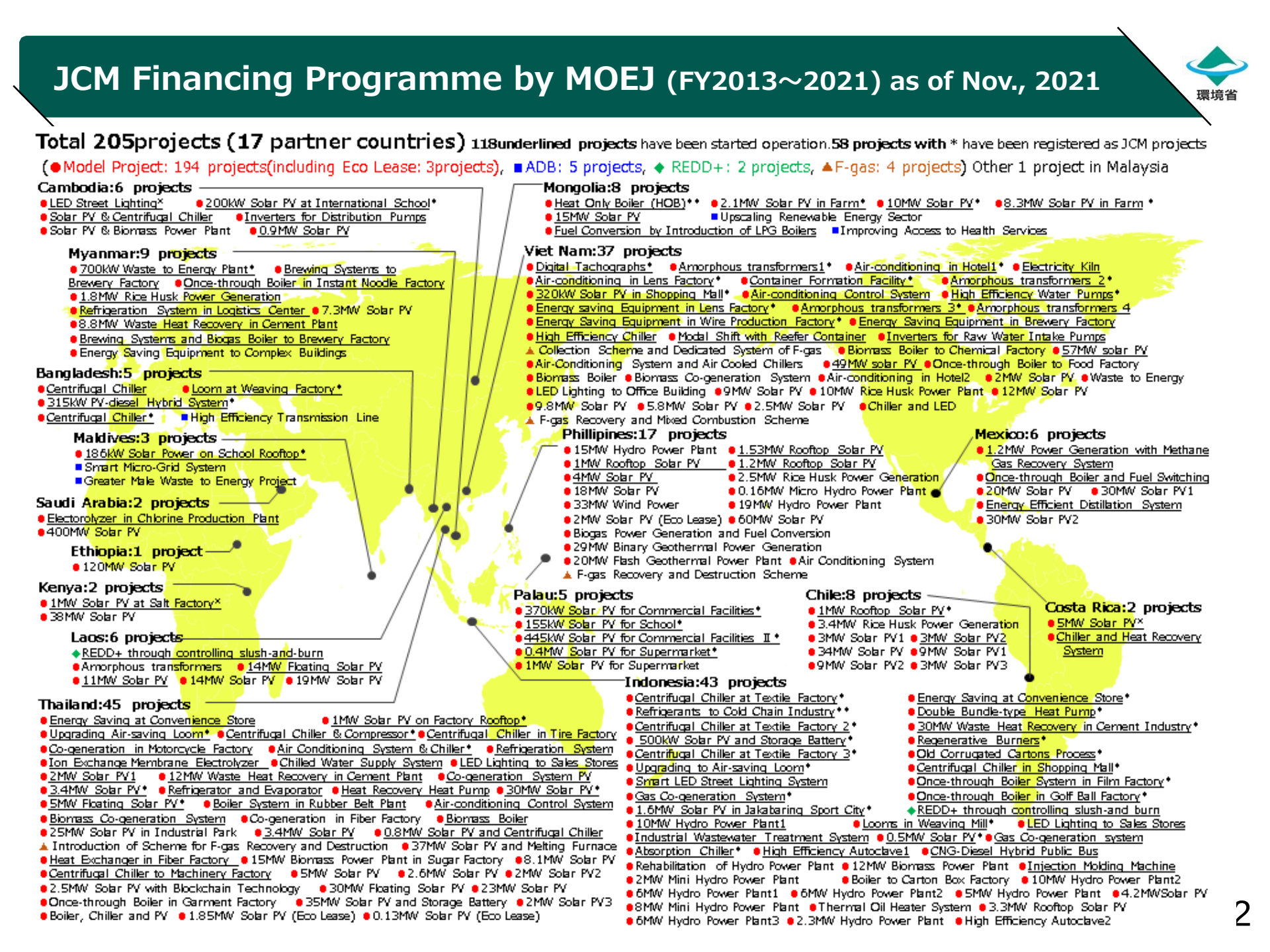
Total 205projects (17 partner countries) **118underlined projects** have been started operation.**58 projects with** * have been registered as JCM projects

(●Model Project: 194 projects(including Eco Lease: 3projects), ■ADB: 5 projects, ◆ REDD+: 2 projects, ▲F-gas: 4 projects) Other 1 project in Malaysia



Cambodia:6 projects
- LED Street Lighting×
- 200kW Solar PV at International School*
- Solar PV & Centrifugal Chiller
- Inverters for Distribution Pumps
- Solar PV & Biomass Power Plant
- 0.9MW Solar PV

Myanmar:9 projects
- 700kW Waste to Energy Plant*
- Brewing Systems to Brewery Factory
- Once-through Boiler in Instant Noodle Factory
- 1.8MW Rice Husk Power Generation
- Refrigeration System in Logistics Center
- 7.3MW Solar PV
- 8.8MW Waste Heat Recovery in Cement Plant
- Brewing Systems and Biogas Boiler to Brewery Factory
- Energy Saving Equipment to Complex Buildings

Bangladesh:5 projects
- Centrifugal Chiller
- Loom at Weaving Factory*
- 315kW PV-diesel Hybrid System*
- Centrifugal Chiller*
- High Efficiency Transmission Line

Maldives:3 projects
- 186kW Solar Power on School Rooftop*
- Smart Micro-Grid System
- Greater Male Waste to Energy Project

Saudi Arabia:2 projects
- Electorolyzer in Chlorine Production Plant
- 400MW Solar PV

Ethiopia:1 project
- 120MW Solar PV

Kenya:2 projects
- 1MW Solar PV at Salt Factory×
- 38MW Solar PV

Laos:6 projects
- ◆REDD+ through controlling slush-and-burn
- Amorphous transformers
- 14MW Floating Solar PV
- 11MW Solar PV
- 14MW Solar PV
- 19MW Solar PV

Thailand:45 projects
- Energy Saving at Convenience Store
- 1MW Solar PV on Factory Rooftop*
- Upgrading Air-saving Loom*
- Centrifugal Chiller & Compressor*
- Centrifugal Chiller in Tire Factory
- Co-generation in Motorcycle Factory
- Air Conditioning System & Chiller*
- Refrigeration System
- Ion Exchange Membrane Electrolyzer
- Chilled Water Supply System
- LED Lighting to Sales Stores
- 2MW Solar PV1
- 12MW Waste Heat Recovery in Cement Plant
- Co-generation System PV
- 3.4MW Solar PV*
- Refrigerator and Evaporator
- Heat Recovery Heat Pump
- 30MW Solar PV*
- 5MW Floating Solar PV*
- Boiler System in Rubber Belt Plant
- Air-conditioning Control System
- Biomass Co-generation System
- Co-generation in Fiber Factory
- Biomass Boiler
- 25MW Solar PV in Industrial Park
- 3.4MW Solar PV
- 0.8MW Solar PV and Centrifugal Chiller
- ▲Introduction of Scheme for F-gas Recovery and Destruction
- 37MW Solar PV and Melting Furnace
- Heat Exchanger in Fiber Factory
- 15MW Biomass Power Plant in Sugar Factory
- 8.1MW Solar PV
- Centrifugal Chiller to Machinery Factory
- 5MW Solar PV
- 2.6MW Solar PV
- 2MW Solar PV2
- 2.5MW Solar PV with Blockchain Technology
- 30MW Floating Solar PV
- 23MW Solar PV
- Once-through Boiler in Garment Factory
- 35MW Solar PV and Storage Battery
- 2MW Solar PV3
- Boiler, Chiller and PV
- 1.85MW Solar PV (Eco Lease)
- 0.13MW Solar PV (Eco Lease)

Mongolia:8 projects
- Heat Only Boiler (HOB)**
- 2.1MW Solar PV in Farm*
- 10MW Solar PV*
- 8.3MW Solar PV in Farm *
- 15MW Solar PV
- ■Upscaling Renewable Energy Sector
- Fuel Conversion by Introduction of LPG Boilers
- ■Improving Access to Health Services

Viet Nam:37 projects
- Digital Tachographs*
- Amorphous transformers1*
- Air-conditioning in Hotel1*
- Electricity Kiln
- Air-conditioning in Lens Factory*
- Container Formation Facility*
- Amorphous transformers 2*
- 320kW Solar PV in Shopping Mall*
- Air-conditioning Control System
- High Efficiency Water Pumps*
- Energy saving Equipment in Lens Factory*
- Amorphous transformers 3*
- Amorphous transformers 4
- Energy Saving Equipment in Wire Production Factory*
- Energy Saving Equipment in Brewery Factory
- High Efficiency Chiller
- Modal Shift with Reefer Container
- Inverters for Raw Water Intake Pumps
- ▲Collection Scheme and Dedicated System of F-gas
- Biomass Boiler to Chemical Factory
- 57MW solar PV
- Air-Conditioning System and Air Cooled Chillers
- 49MW solar PV
- Once-through Boiler to Food Factory
- Biomass Boiler
- Biomass Co-generation System
- Air-conditioning in Hotel2
- 2MW Solar PV
- Waste to Energy
- LED Lighting to Office Building
- 9MW Solar PV
- 10MW Rice Husk Power Plant
- 12MW Solar PV
- 9.8MW Solar PV
- 5.8MW Solar PV
- 2.5MW Solar PV
- Chiller and LED
- ▲F-gas Recovery and Mixed Combustion Scheme

Phillipines:17 projects
- 15MW Hydro Power Plant
- 1.53MW Rooftop Solar PV
- 1MW Rooftop Solar PV
- 1.2MW Rooftop Solar PV
- 4MW Solar PV
- 2.5MW Rice Husk Power Generation
- 18MW Solar PV
- 0.16MW Micro Hydro Power Plant
- 33MW Wind Power
- 19MW Hydro Power Plant
- 2MW Solar PV (Eco Lease)
- 60MW Solar PV
- Biogas Power Generation and Fuel Conversion
- 29MW Binary Geothermal Power Generation
- 20MW Flash Geothermal Power Plant
- Air Conditioning System
- ▲F-gas Recovery and Destruction Scheme

Palau:5 projects
- 370kW Solar PV for Commercial Facilities*
- 155kW Solar PV for School*
- 445kW Solar PV for Commercial Facilities Ⅱ*
- 0.4MW Solar PV for Supermarket*
- 1MW Solar PV for Supermarket

Chile:8 projects
- 1MW Rooftop Solar PV*
- 3.4MW Rice Husk Power Generation
- 3MW Solar PV1
- 3MW Solar PV2
- 34MW Solar PV
- 9MW Solar PV1
- 9MW Solar PV2
- 3MW Solar PV3

Mexico:6 projects
- 1.2MW Power Generation with Methane Gas Recovery System
- Once-through Boiler and Fuel Switching
- 20MW Solar PV
- 30MW Solar PV1
- Energy Efficient Distillation System
- 30MW Solar PV2

Costa Rica:2 projects
- 5MW Solar PV×
- Chiller and Heat Recovery System

Indonesia:43 projects
- Centrifugal Chiller at Textile Factory*
- Refrigerants to Cold Chain Industry**
- Centrifugal Chiller at Textile Factory 2*
- 500kW Solar PV and Storage Battery*
- Centrifugal Chiller at Textile Factory 3*
- Upgrading to Air-saving Loom*
- Smart LED Street Lighting System
- Gas Co-generation System*
- 1.6MW Solar PV in Jakabaring Sport City*
- 10MW Hydro Power Plant1
- Looms in Weaving Mill*
- LED Lighting to Sales Stores
- Industrial Wastewater Treatment System
- 0.5MW Solar PV*
- Gas Co-generation system
- Absorption Chiller*
- High Efficiency Autoclave1
- CNG-Diesel Hybrid Public Bus
- Rehabilitation of Hydro Power Plant
- 12MW Biomass Power Plant
- Injection Molding Machine
- 2MW Mini Hydro Power Plant
- Boiler to Carton Box Factory
- 10MW Hydro Power Plant2
- 6MW Hydro Power Plant1
- 6MW Hydro Power Plant2
- 5MW Hydro Power Plant
- 4.2MWSolar PV
- 8MW Mini Hydro Power Plant
- Thermal Oil Heater System
- 3.3MW Rooftop Solar PV
- 6MW Hydro Power Plant3
- 2.3MW Hydro Power Plant
- High Efficiency Autoclave2
- Energy Saving at Convenience Store*
- Double Bundle-type Heat Pump*
- 30MW Waste Heat Recovery in Cement Industry*
- Regenerative Burners*
- Old Corrugated Cartons Process*
- Centrifugal Chiller in Shopping Mall*
- Once-through Boiler System in Film Factory*
- Once-through Boiler in Golf Ball Factory*
- ◆REDD+ through controlling slush-and burn

JCM Example① : Waste to Energy project in Bac Ninh Province

PP (Japan): JFE Engineering Corporation , PP (Vietnam): T&J Green Energy Company Limited

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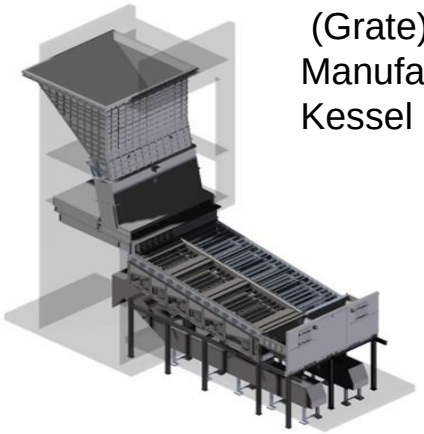
Outline of GHG Mitigation Activity

In this project, a waste-to-energy plant is introduced in Bac Ninh province. This plant incinerates and generates electricity from 230 tons/day of municipal solid waste, which has been disposed of as landfill. The plant also incinerates and generates electricity from 120 tons/day of municipal solid waste and 150 tons/day of industrial solid waste, which were previously incinerated.
This scheme enables the proper waste treatment and the supply of electricity without the use of fossil fuels. It also reduces methane emissions from landfill sites and greenhouse gas (GHG) emissions by replacing grid electricity.



Waste to Energy Incinerator (Grate)
Manufactured by Standard-Kessel Baumgarte (Germany)

Processing Volume: 500t/day

(Municipal solid waste 350t/day and industrial solid waste 150t/day)

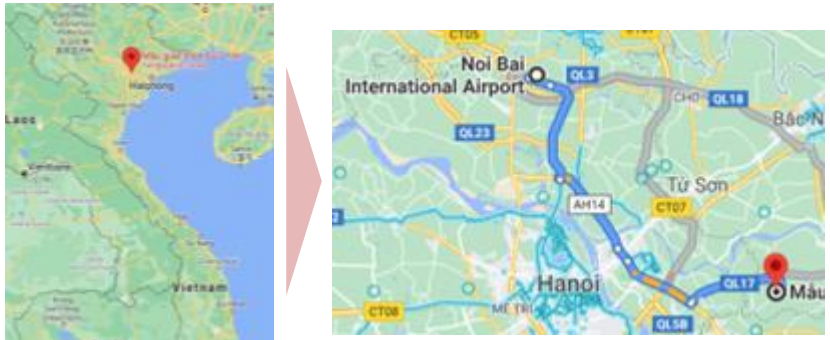
Expected GHG Emission Reductions

41,804tCO_2/year

=Reference GHG Emissions
– Project GHG Emissions

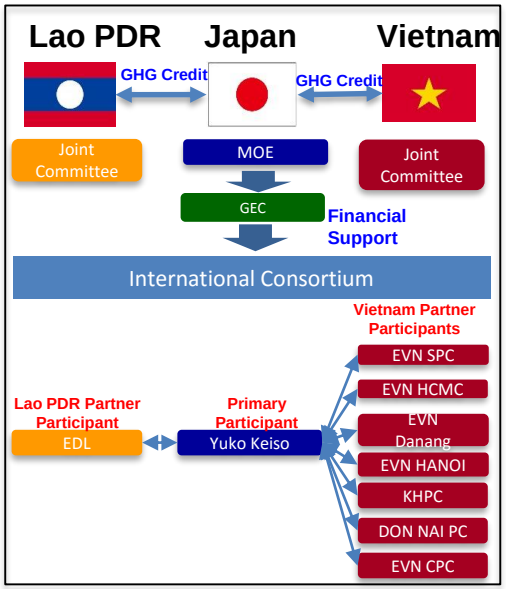
Sites of Project

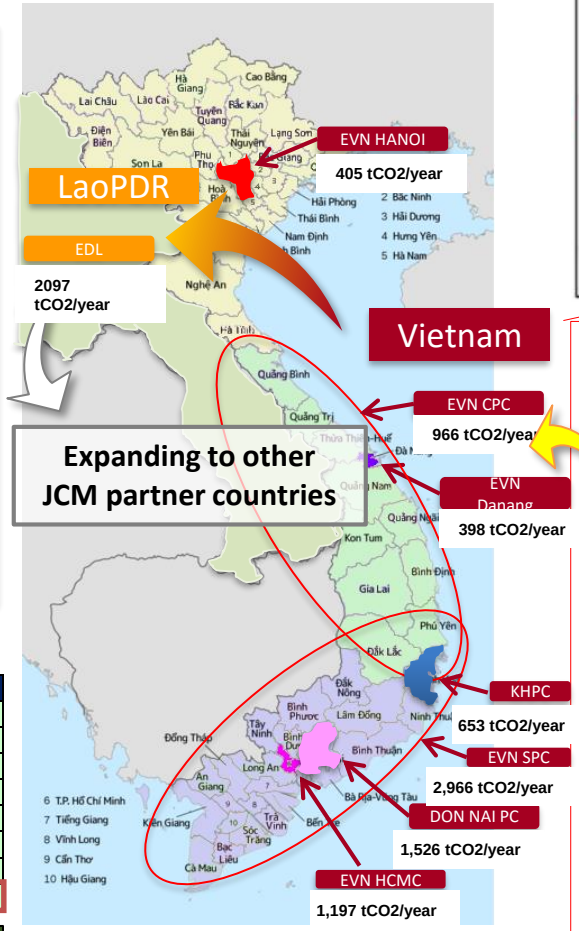
Project site:
Bac Ninh Province
(Approx.-30km east of Hanoi City)
Approx. 50km southeast of Noi Bai Airport

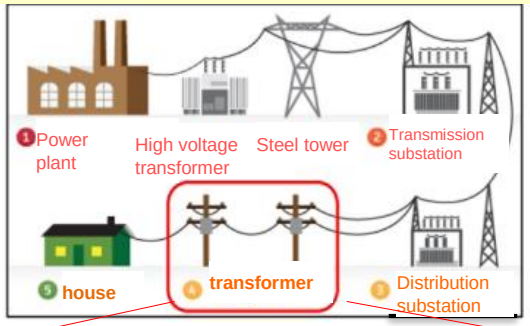


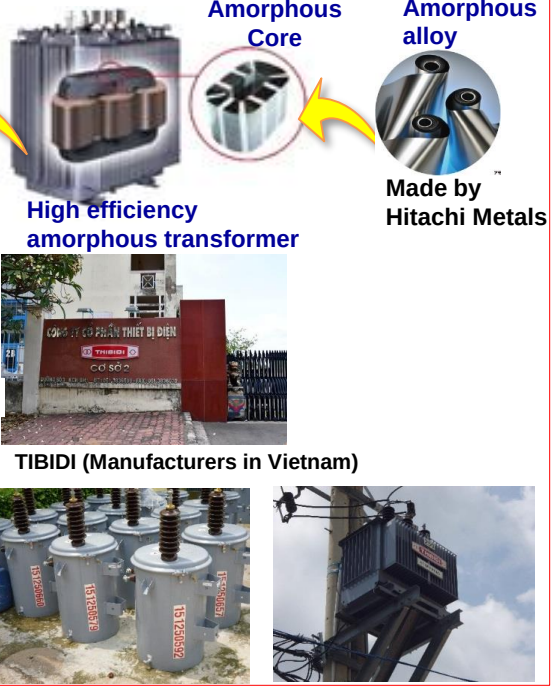
JCM Example② : High efficiency amorphous transformers from Vietnam to Lao PDR

★Transformers in Vietnam are being replaced with amorphous high efficiency transformers from 2015 through 2020.
★Succeeded in developing the same product and technology in Lao PDR since 2018. Preparing for expansion to other countries.
★Providing excellent amorphous alloy low carbon technology. A total of 10,000 transformers introduced throughout Vietnam.









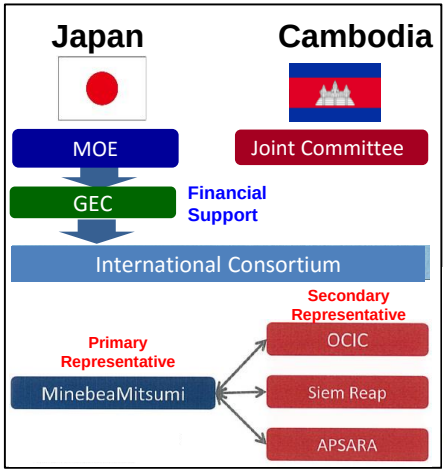
Amount of amorphous transformer introduced (as of JAN2019)

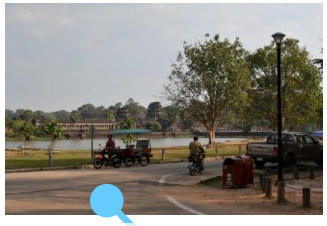
ベトナム	FY2015	FY2016	FY2017	FY2018	Total
EVN SPC	1,618	2,686	2,507		6,811
EVN HCMC		552	340		892
EVN CPC		981			981
EVN Danang		282			282
EVN HANOI		121	65		186
KHPC		111	305	30	446
DON NAI PC		168	580	207	955
Total	1,618	4,901	3,797	237	10,553

ラオス	FY2015	FY2016	FY2017	FY2018	Total
EDL				465	465

JCM Example③ : Expansion into smart city environment from LED street light network in Cambodia

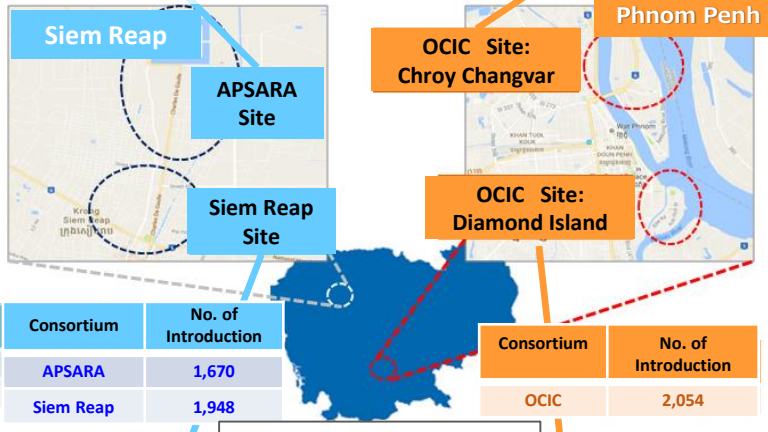
★70% energy saving is achieved by LED street light in emerging city and world heritage.
★Commenced joint study with local partners to build smart city environment by wireless network environment deployment.
★5,600 LED street lights installed in Cambodia in areas including Phnom Penh and Angkor Wat (total installation area is 120㎢).





APSARA(Angkor Wat)

OCIC Chroy Changvar（Phnom Penh）



Consortium	No. of Introduction
APSARA	1,670
Siem Reap	1,948

Consortium	No. of Introduction
OCIC	2,054

Actual number installed in Cambodia

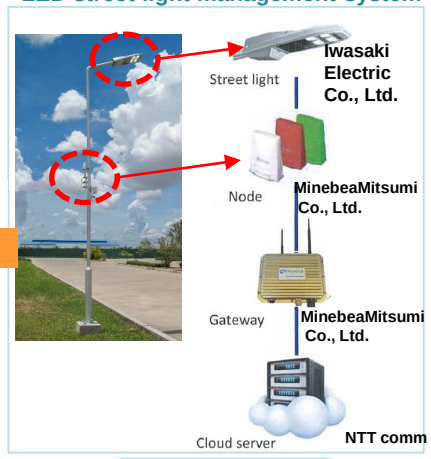
Siem Reap Provincial Hall (SRPH)

OCIC Diamond Island

The total footprint of the LED street light is 1.5 times that of Manhattan Island (120㎢)

December 2016
Received Minister of the Environment Award in Cambodia

LED street light management system



Deploying various IOT sensors and wireless networking environments will enable the Smart City environmental infrastructure.

ADB Trust Fund: Japan Fund for Joint Crediting Mechanism (JFJCM)

Budget for FY2021

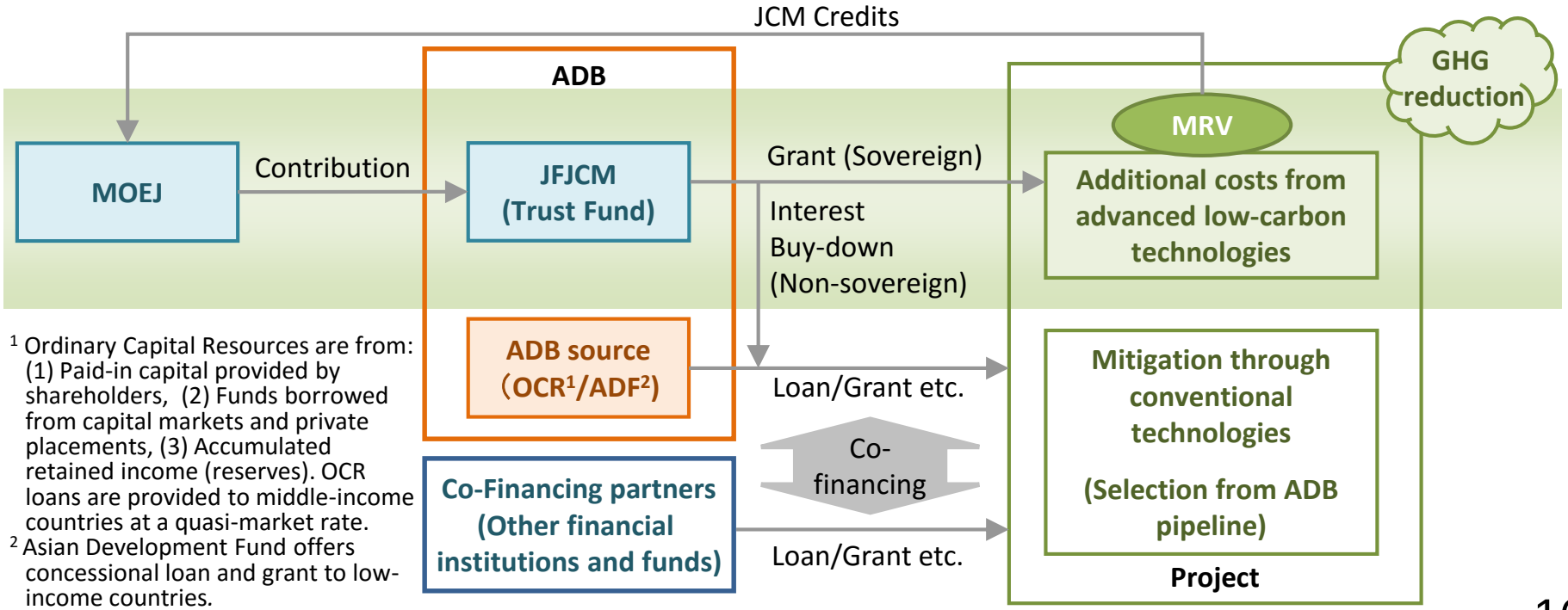
JPY 1 billion (approx. USD 10 million)

Scheme

To provide the financial incentives for the adoption of advanced low-carbon technologies which are superior in GHG emission reduction but expensive in ADB(Asian Development Bank)-financed projects

Purpose

To develop ADB projects with sustainable and low-carbon transition perspective by introducing advanced low-carbon technologies as well as to acquire JCM credits



[1] Ordinary Capital Resources are from: (1) Paid-in capital provided by shareholders, (2) Funds borrowed from capital markets and private placements, (3) Accumulated retained income (reserves). OCR loans are provided to middle-income countries at a quasi-market rate.

[2] Asian Development Fund offers concessional loan and grant to low-income countries.

Low Carbon Technology Approved as JFJCM project （2021.4）

Total contribution

JPY 9.8 billion (approx. USD 88 million)

2014	2015	2016	2017	2018	2019	2020	2021
1.8	1.8	1.2	1	1	1	1	1

（JPY billion）

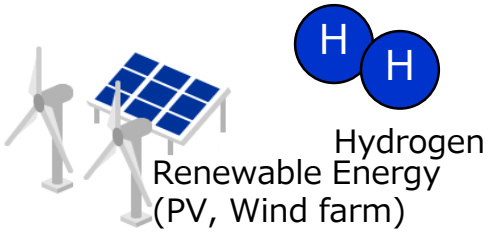
ADB Board Approved project

Project	Additional assistance	Introduced advanced technology
Maldives : Smart Micro Grid System at Addu Atoll	5 million	Install smart micro-grid technology with advanced battery system and energy management system (EMS)
Cambodia : Wastewater Treatment	10 million	Install high-efficient and energy-saving Wastewater Treatment Plant
Bangladeshi : High Efficiency Transmission Line	7 million	Install High-efficiency transmission lines (HTLS conductors) for saving line losses about 22%
Mongolia : Advanced Solar PV System	6 million	Install Solar PV with advanced battery system and an energy management system (EMS)
Mongolia : High efficiency HVAC system and Heat Pump	3.48 million	Install high efficient heating, ventilation, and air conditioning (HVAC) system and ground source heat pumps to district hospital and family health centers (FHC)
Maldives: Greater Male Waste to Energy Project	10million	500 tons a day waste-to-energy plant with a maximum capacity of 11MW

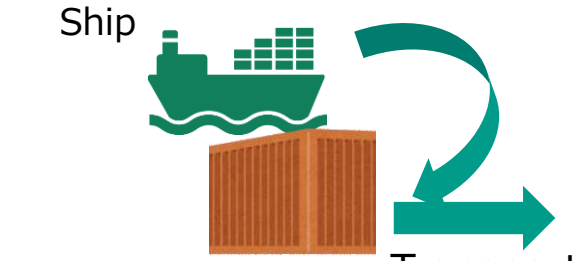
Pilot project for comprehensive support throughout the whole hydrogen supply chain abroad

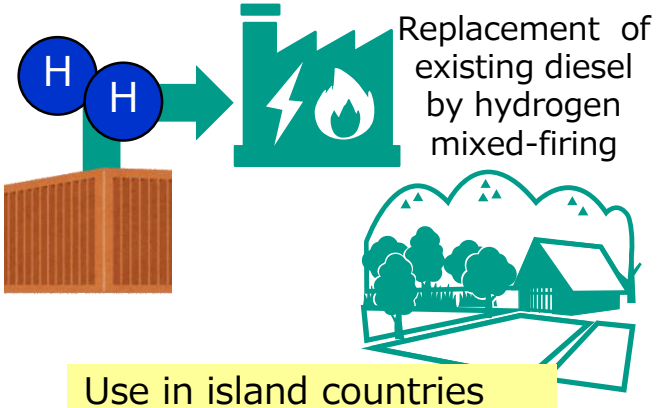
- **Produce and storage renewable hydrogen in a third country** where renewable energy is abundant, and transport to supply and use in island countries.
- Cultivate demand market by **supplying renewable hydrogen to island countries**, which will lead to JCM projects and help developing countries transition to a decarbonized society.

Production → **Storage & Transportation** → **Supply & Use**



Produce hydrogen by using surplus RE in a third country
※Large amount of surplus RE is needed. (ex. Australia)





Use in island countries

Future Vision
JCM project, horizontal expansion

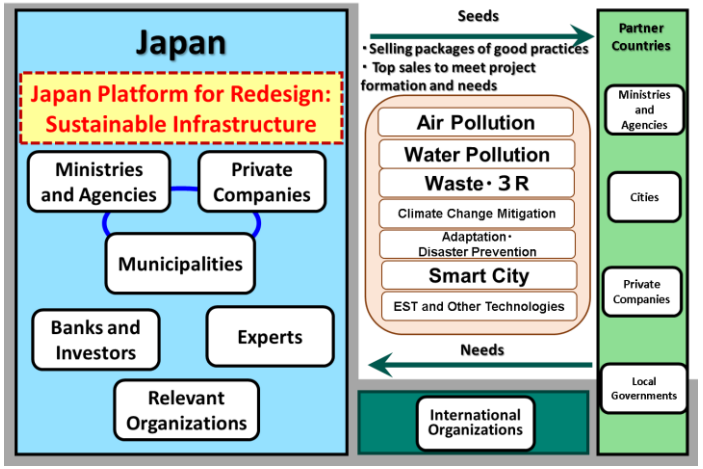
※This project start from FY2021 as a part of JCM model project

Japan Platform for Redesign: Sustainable Infrastructure(JPRSI)

■ JPRSI aims to provide a total solution to overall environmental infrastructures using a PPP (Public-Private-Partnership) platform.

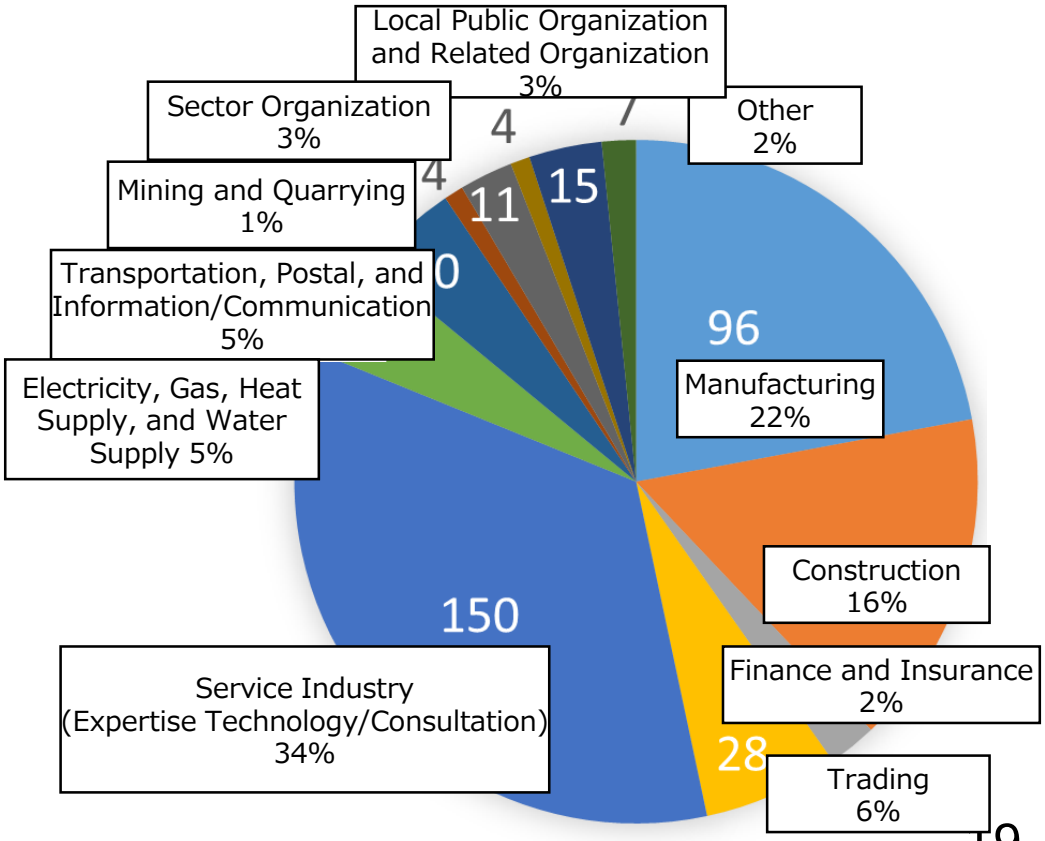
Overview

- Established : September 8, 2020
- Relevant Organizations: JICA, JOIN, JASCA, J-CODE, JAIDA, JBIC, JETRO, and NEXI
- Purpose: Build a network involving joined companies and organizations, and create a self-driven project, which is operated by private companies to meet with cross-sectional needs of a partner country.



Number of Entities Joined

■ 435 entities have joined the platform (as of December 2021).



African Clean Cities Platform (ACCP)

■ The ACCP was established in April 2017, by the Ministry of the Environment of Japan (MOEJ), JICA and other partners, aiming to contribute to **sound waste management** in Africa, which leads to the achievement of the SDGs and the increase in investment.

Member (As of October 2021)

- African 42 countries
- African 89 cities
- Ministry of the Environment of Japan
- JICA
- City of Yokohama
- UN-Habitat
- UNEP

AFRICAN CLEAN CITIES PLATFORM
PLATE-FORME AFRICAINE DES VILLES PROPRES

MORE INFORMATION
African Clean Cities Platform
http://africancleancities.org/

Main activities

Capacity building

- Training in Japan (2 times by year)
- Study tour (Addis Ababa, Ethiopia)

Data Collection and Publications

Field survey and pilot project in Africa

- ACCP Model Project in Mozambique

  Fukuoka Method - Semi-aerobic Landfill -

Sharing knowledge and experiences

- April 2017: Platform Preparation Meeting (Maputo, Mozambique)
- June 2018: 1st General Meeting (Rabat, Morocco)
- August 2019: 2nd General Meeting (Yokohama, Japan)

Model Project for Improvement of Water Environment in Asia

■ To **support the improvement of water environment** in Asia-Pacific **by disseminating appropriate water treatment and related technologies** by Japanese private sectors. (Total 0.8 million $)

Public inviting of project proposals

MOEJ decides approved projects and gives financial support.

First year

Feasibility Study

Second year

Pilot Project

Third year

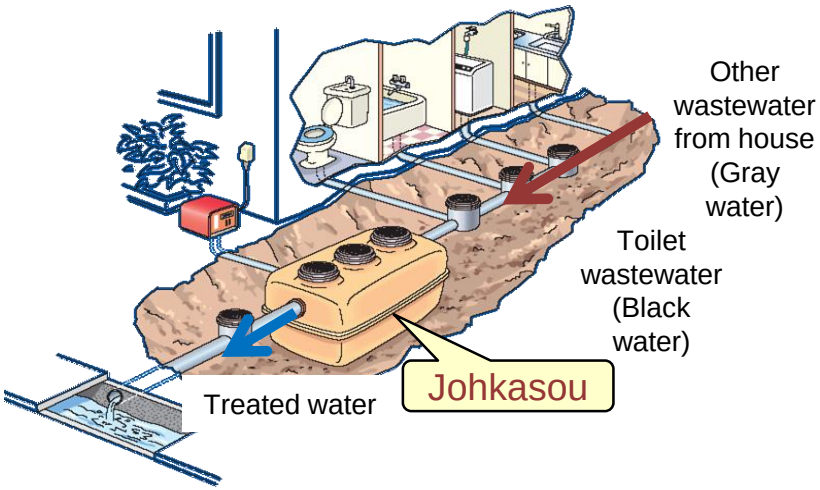
Developing Business Models

- So far, a total of 31 projects have been approved, and **11 projects have been approved in Vietnam.**
- Approved projects are in the fields of; domestic wastewater treatment, Industrial wastewater treatment, Phosphorus resource recovery system, control of Non-point source pollution.

Application of “Johkasou” in overseas

- MOEJ hosts International Workshop on Decentralized Wastewater Treatment in Asia to share Japanese legal systems, regulations and experiences.
- MOEJ also hosts Johkasou Seminars to promote Johkasou in detail for governmental stakeholders mainly in South East Asian countries.

Typical figure



Installation in Overseas (Total)