Recent Development of the JCM and Contribution to NDC

July 2017

Mr. Kazuhisa KOAKUTSU
Deputy Director
Office of Market Mechanisms
Global Environment Bureau
Ministry of the Environment of Japan

The Joint Crediting Mechanism

- Facilitating diffusion of leading low carbon technologies through contributions from Japan and evaluating realized GHG emission reductions or removals in a quantitative manner to use them for achieving Japan's emission reduction target.
- Japan will address the high initial cost barrier of introducing advanced low-carbon technologies in developing countries through the JCM (GoJ implements several supporting schemes)

Waste heat recovery in Cement Industry, JFE engineering, Indonesia

Eco-driving with Digital Tachographs, NITTSU, Vietnam

Energy saving at convenience stores, Panasonic, Indonesia

High efficiency air-conditioning and process cooling, Ebara refrigeration equipment & systems, Indonesia

High-efficiency Heat only Boilers, Suuri-Keikaku, Mongolia

Upgrading air-saving loom at textile factory, TORAY etc., Indonesia, Thai, Bangladesh

Installing solar PV system, PCKK, Palau Maldives

Amorphous transformers in power distribution, Hitachi Materials, Vietnam

Co-generation system at factory, Toyota, Nippon Steel & Sumikin Engineering, Indonesia, Thai

High efficiency air-conditioning system, Hitachi, Daikin, Vietnam

Solar PV System at Salt Factory, PCKK, Kenya

Waste to Energy Plant, JFE engineering, Myanmar

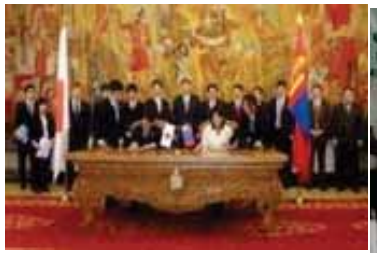
High efficient refrigerator, Mayekawa MFG, Indonesia

Regenerative Burners in industries, Toyotsu Machinery, Indonesia

LED street lighting system with wireless network control, MinebeaMitsumi、Cambodia

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.



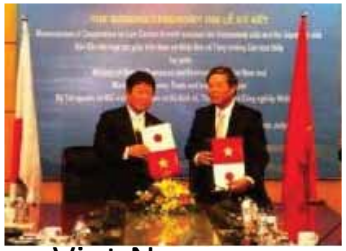
Mongolia
Jan. 8, 2013
（Ulaanbaatar）

Bangladesh
Mar. 19, 2013
(Dhaka)

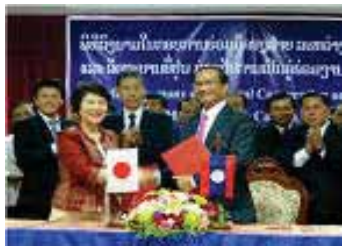
Ethiopia
May 27, 2013
(Addis Ababa)

Kenya
Jun. 12,2013
(Nairobi)

Maldives
Jun. 29, 2013
(Okinawa)

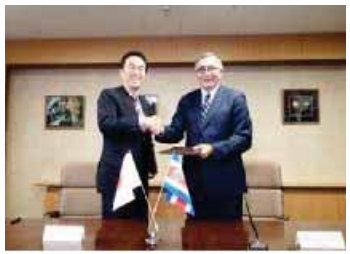


Viet Nam
Jul. 2, 2013
(Hanoi)



Lao PDR
Aug. 7, 2013
(Vientiane)

Indonesia
Aug. 26, 2013
(Jakarta)

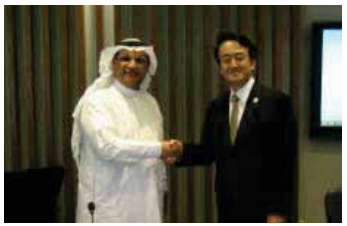


Costa Rica
Dec. 9, 2013
(Tokyo)

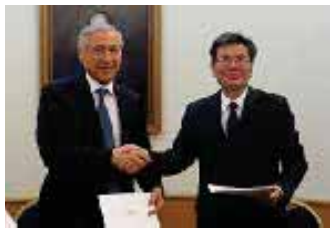
Palau
Jan. 13, 2014
(Ngerulmud)

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)

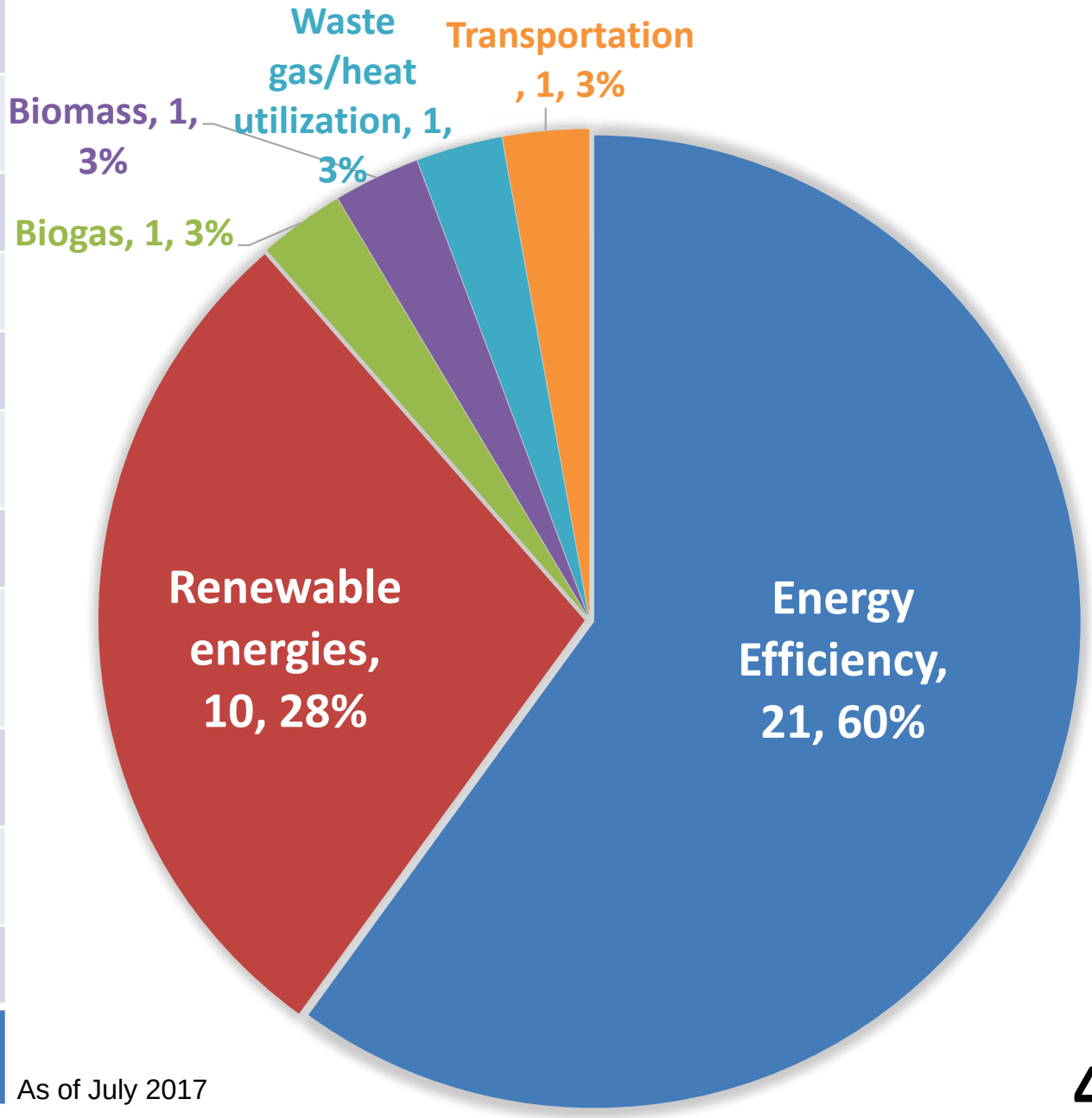
Thailand
Nov. 19, 2015
(Tokyo)

the Philippines
Jan. 12, 2017
(Manila)

Approved JCM methodologies

Partner country	No.
Indonesia	12
Viet Nam	6
Mongolia	3
Kenya	3
Ethiopia	3
Thailand	2
Cambodia	2
Palau	1
Maldives	1
Bangladesh	1
Lao PDR	1
11 countries	35

Project Types



As of July 2017

JCM Credits Issued

Partner country	Project title	Issuance Date	Amount (t-CO2) (Partner Country)	Amount (t-CO2) Japan)
Indonesia	Project of Introducing High Efficiency Refrigerator	2016/5/12	3	8
Indonesia	Project of Introducing High Efficiency Refrigerator	2016/5/12	6	23
Mongolia	Installation of high-efficiency Heat Only Boilers in 118th School of Ulaanbaatar City Project	2016/9/30	10	40
Mongolia	Centralization of heat supply system by installation of high-efficiency Heat Only Boilers in Bornuur soum Project	2016/9/30	22	85
Palau	Small scale solar power plants for commercial facilities in island states	2016/12/22	74	222
			115	378

As of July 2017

JCM Model Projects by MOE

The budget for projects starting from FY 2017 is 6.0 billion JPY (approx. USD 60million) in total by FY2019

(1 USD = 100 JPY)

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

Government of Japan

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

Conduct MRV and expected to deliver at least half of 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 the adoption of the financing and finishing installation within three years.

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

Budget for FY2017

JPY 1 billion (approx. USD 10 million)

(1 USD = 100 JPY)

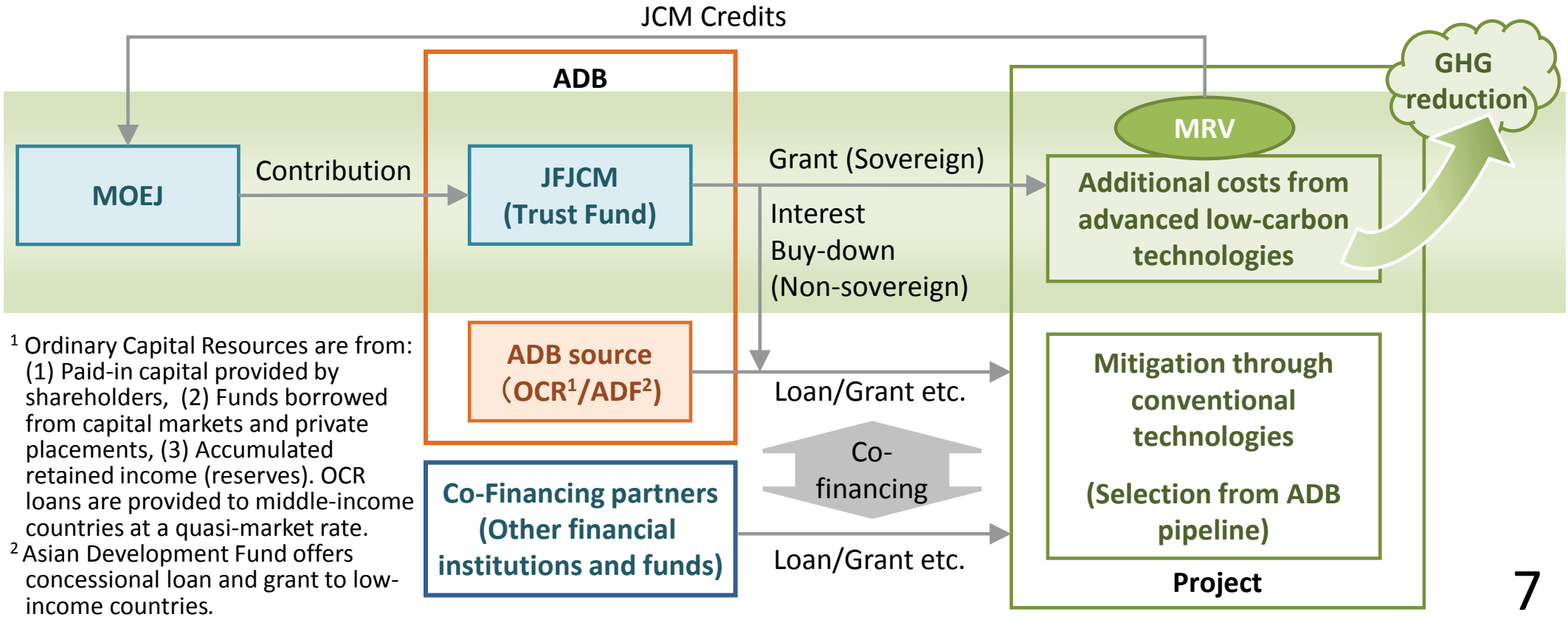
※JPY 1.2 billion in 2016, and 1.8 billion in 2015 and 2014 respectively

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

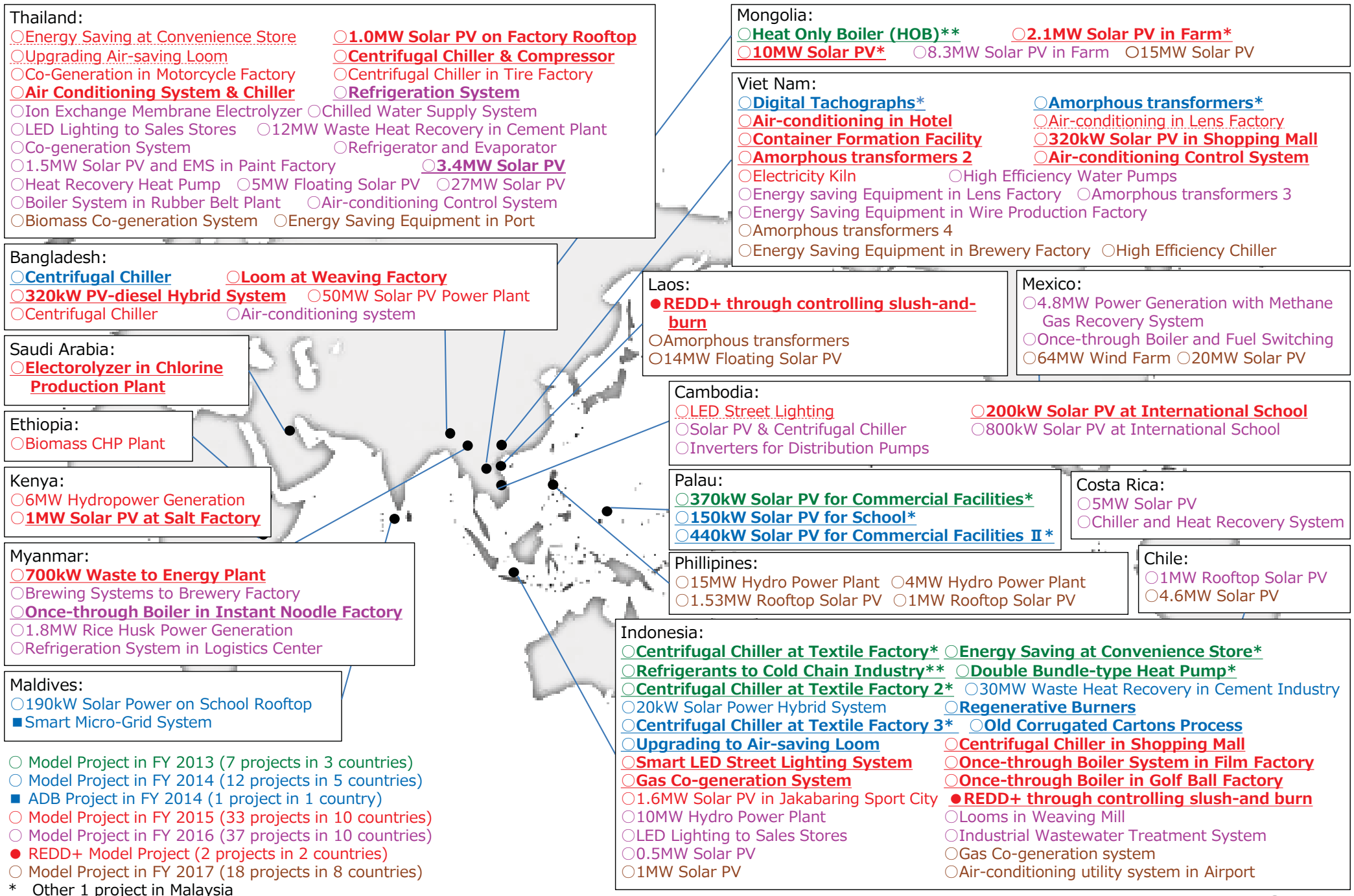
To develop ADB projects with sustainable and low-carbon transition perspective by introducing advanced low-carbon technologies as well as to acquire JCM credits



[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.

JCM Financing programme by MOEJ (FY2013～2017) as of June 26, 2017



Thailand:
- ○Energy Saving at Convenience Store
- ○**1.0MW Solar PV on Factory Rooftop**
- ○Upgrading Air-saving Loom
- ○**Centrifugal Chiller & Compressor**
- ○Co-Generation in Motorcycle Factory
- ○Centrifugal Chiller in Tire Factory
- ○**Air Conditioning System & Chiller**
- ○**Refrigeration System**
- ○Ion Exchange Membrane Electrolyzer ○Chilled Water Supply System
- ○LED Lighting to Sales Stores ○12MW Waste Heat Recovery in Cement Plant
- ○Co-generation System ○Refrigerator and Evaporator
- ○1.5MW Solar PV and EMS in Paint Factory ○**3.4MW Solar PV**
- ○Heat Recovery Heat Pump ○5MW Floating Solar PV ○27MW Solar PV
- ○Boiler System in Rubber Belt Plant ○Air-conditioning Control System
- ○Biomass Co-generation System ○Energy Saving Equipment in Port

Bangladesh:
- ○**Centrifugal Chiller**
- ○**Loom at Weaving Factory**
- ○**320kW PV-diesel Hybrid System**
- ○50MW Solar PV Power Plant
- ○Centrifugal Chiller
- ○Air-conditioning system

Saudi Arabia:
- ○**Electorolyzer in Chlorine Production Plant**

Ethiopia:
- ○Biomass CHP Plant

Kenya:
- ○6MW Hydropower Generation
- ○**1MW Solar PV at Salt Factory**

Myanmar:
- ○**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

Maldives:
- ○190kW Solar Power on School Rooftop
- ■Smart Micro-Grid System

Mongolia:
- ○**Heat Only Boiler (HOB)****
- ○**2.1MW Solar PV in Farm***
- ○**10MW Solar PV***
- ○8.3MW Solar PV in Farm
- ○15MW Solar PV

Viet Nam:
- ○**Digital Tachographs***
- ○**Amorphous transformers***
- ○**Air-conditioning in Hotel**
- ○Air-conditioning in Lens Factory
- ○**Container Formation Facility**
- ○**320kW Solar PV in Shopping Mall**
- ○**Amorphous transformers 2**
- ○**Air-conditioning Control System**
- ○Electricity Kiln ○High Efficiency Water Pumps
- ○Energy saving Equipment in Lens Factory ○Amorphous transformers 3
- ○Energy Saving Equipment in Wire Production Factory
- ○Amorphous transformers 4
- ○Energy Saving Equipment in Brewery Factory ○High Efficiency Chiller

Laos:
- ●**REDD+ through controlling slush-and-burn**
- ○Amorphous transformers
- ○14MW Floating Solar PV

Mexico:
- ○4.8MW Power Generation with Methane Gas Recovery System
- ○Once-through Boiler and Fuel Switching
- ○64MW Wind Farm ○20MW Solar PV

Cambodia:
- ○LED Street Lighting
- ○**200kW Solar PV at International School**
- ○Solar PV & Centrifugal Chiller
- ○800kW Solar PV at International School
- ○Inverters for Distribution Pumps

Palau:
- ○**370kW Solar PV for Commercial Facilities***
- ○**150kW Solar PV for School***
- ○**440kW Solar PV for Commercial Facilities Ⅱ***

Costa Rica:
- ○5MW Solar PV
- ○Chiller and Heat Recovery System

Phillipines:
- ○15MW Hydro Power Plant ○4MW Hydro Power Plant
- ○1.53MW Rooftop Solar PV ○1MW Rooftop Solar PV

Chile:
- ○1MW Rooftop Solar PV
- ○4.6MW Solar PV

Indonesia:
- ○**Centrifugal Chiller at Textile Factory*** ○**Energy Saving at Convenience Store***
- ○**Refrigerants to Cold Chain Industry**** ○**Double Bundle-type Heat Pump***
- ○**Centrifugal Chiller at Textile Factory 2*** ○30MW Waste Heat Recovery in Cement Industry
- ○20kW Solar Power Hybrid System ○**Regenerative Burners**
- ○**Centrifugal Chiller at Textile Factory 3*** ○**Old Corrugated Cartons Process**
- ○**Upgrading to Air-saving Loom** ○**Centrifugal Chiller in Shopping Mall**
- ○**Smart LED Street Lighting System** ○**Once-through Boiler System in Film Factory**
- ○**Gas Co-generation System** ○**Once-through Boiler in Golf Ball Factory**
- ○1.6MW Solar PV in Jakabaring Sport City ●**REDD+ through controlling slush-and burn**
- ○10MW Hydro Power Plant ○Looms in Weaving Mill
- ○LED Lighting to Sales Stores ○Industrial Wastewater Treatment System
- ○0.5MW Solar PV ○Gas Co-generation system
- ○1MW Solar PV ○Air-conditioning utility system in Airport

○ Model Project in FY 2013 (7 projects in 3 countries)
○ Model Project in FY 2014 (12 projects in 5 countries)
■ ADB Project in FY 2014 (1 project in 1 country)
○ Model Project in FY 2015 (33 projects in 10 countries)
○ Model Project in FY 2016 (37 projects in 10 countries)
● REDD+ Model Project (2 projects in 2 countries)
○ Model Project in FY 2017 (18 projects in 8 countries)
* Other 1 project in Malaysia

Total 110 projects in 17 partner countries

Underlined projects have started operation (48 projects, including 4 partially started projects)
Projects with * have been registered as JCM projects (16 projects)

JCM Financing Programme by MOEJ (FY2013-2017)

Total of 110 projects in 17 partner countries

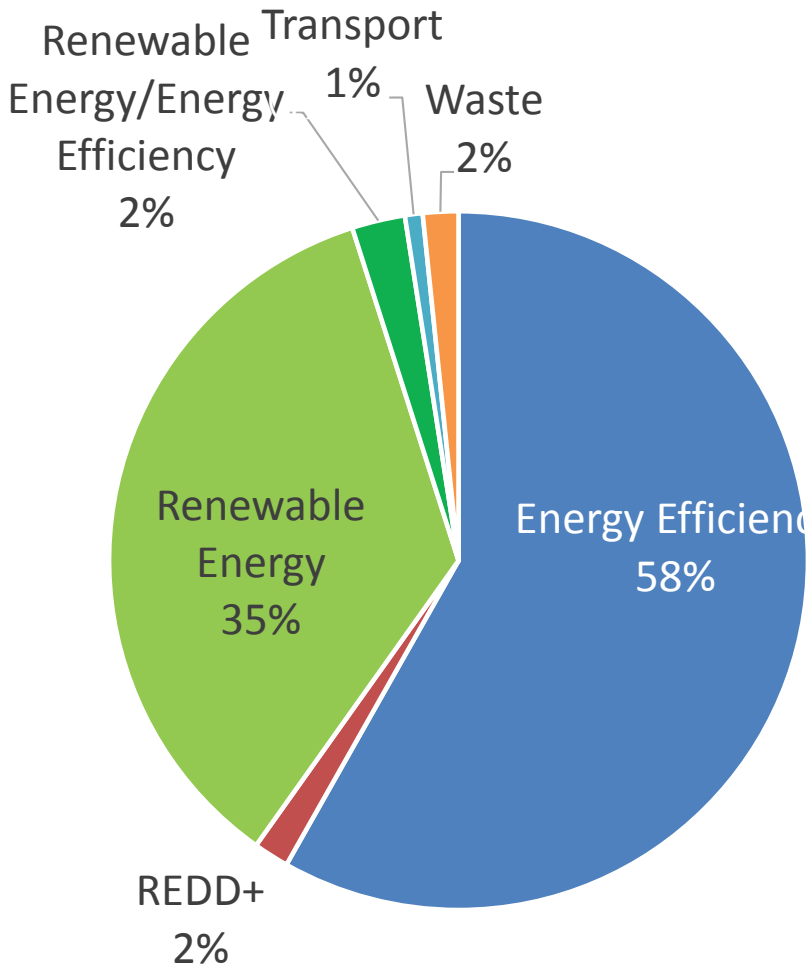
Renewable Energy
Solar
Micro hydro
Biomass

Renewable Energy/Energy Efficiency
Co-generation System
PV and Refrigerating
PV and Production line

Transport
Digital Tachographs

Waste
Waste to Energy

REDD+
Controlling Slush and burn



Energy efficiency
Looms
Equipment
Steam boiler
Burner
Electrolysis tank
LED
Production line
Optimization
Pump
Water heater
Air-conditioning
Refrigerating
Transmission/Transformer
LED Streetlights
Boiler (heating)
Smart Grid

As of July 2017

The JCM related Articles in the Paris Agreement

Article 6 of the Agreement

2. Parties shall, where engaging on a voluntary basis in cooperative approaches that involve the use of internationally transferred mitigation outcomes towards nationally determined contributions, promote sustainable development and ensure environmental integrity and transparency, including in governance, and shall apply robust accounting to ensure, inter alia, the avoidance of double counting, consistent with guidance adopted by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement.

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

- Use of market mechanisms, including the JCM, is articulated under Article 6 which prescribes for the use of emission reductions realized oversees towards national emission reduction targets.
- The amount of emission reductions and removals acquired by Japan under the JCM will be appropriately counted as Japan's reduction in accordance with the Paris Agreement.
- Japan is going to contribute to the development of the guidance for robust accounting including for avoidance of double counting to be adopted by the CMA*.

*the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement

Japan's INDC (Excerpt)

Japan's INDC

○ Japan's INDC towards post-2020 GHG emission reductions is at the level of a reduction of 26.0% by fiscal year (FY) 2030 compared to FY 2013 (25.4% reduction compared to FY 2005) (approximately 1.042 billion t-CO_2eq. as 2030 emissions), ensuring consistency with its energy mix, set as a feasible reduction target by bottom-up calculation with concrete policies, measures and individual technologies taking into adequate consideration, *inter alia*, technological and cost constraints, and set based on the amount of domestic emission reductions and removals assumed to be obtained. .

Information to facilitate clarity, transparency and understanding

○ The JCM is not included as a basis of the bottom-up calculation of Japan's emission reduction target, but the amount of emission reductions and removals acquired by Japan under the JCM will be appropriately counted as Japan's reduction.

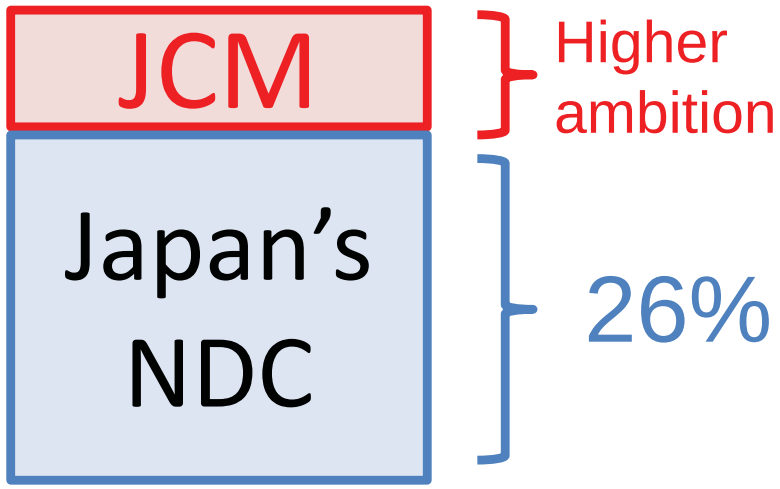
Reference information
GHG emissions and removals
JCM and other international contributions

○ Japan establishes and implements the JCM in order both to appropriately evaluate contributions from Japan to GHG emission reductions or removals in a quantitative manner achieved through the diffusion of low carbon technologies, products, systems, services, and infrastructure as well as implementation of mitigation actions in developing countries, and to use them to achieve Japan's emission reduction target.

○ Apart from contributions achieved through private-sector based projects, accumulated emission reductions or removals by FY 2030 through governmental JCM programs to be undertaken within the government's annual budget are estimated to be ranging from 50 to 100 million t-CO_2.

Japan's INDC and JCM

- As stated in Japan's INDC, the 26% reduction target is set based on the amount of domestic emission reductions and removals assumed to be obtained. It is therefore anticipated that Japan will achieve the target through domestic emission reductions and removals without using international reductions and removals (credits).
- The amount of emission reductions and removals acquired by Japan under the JCM will be appropriately counted as Japan's reduction.



JCM's Contribution to NDC

- JCM's conservative emission reduction calculation (reference emissions below BaU emissions) will ensure a net decrease and/or avoidance of GHG emissions.
- This part of emission reductions will automatically contribute to the achievement of NDC to both country.