

What is the JCM?

Basic Concept of the Joint Crediting Mechanism (JCM)

- Facilitates diffusion of leading low carbon technologies, products, systems, services, and infrastructure as well as implementation of mitigation actions, and contributing to sustainable development of developing countries.
- Appropriately evaluates contributions to GHG emission reductions or removals from Japan in a quantitative manner, and use them to achieve Japan's emission reduction target.
- Contributes to the ultimate objective of the UNFCCC by facilitating global actions for GHG emission reductions or removals.

The JCM related Article in the Paris Agreement

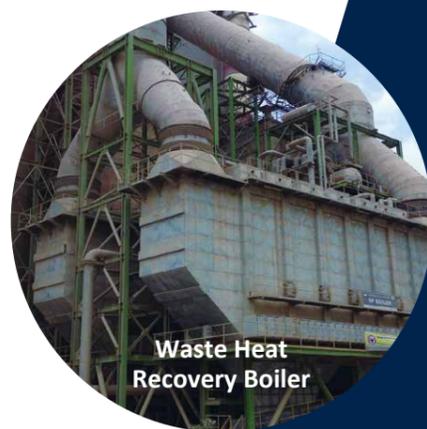
- Use of market mechanisms, including the JCM, is articulated under Article 6 which prescribes for the use of emissions reductions realized overseas (internationally transferred mitigation outcomes: ITMO) towards national emission reduction targets.
- The amount of emission reductions and removals acquired 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 Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA).

Reference information of Japan's Intended Nationally Determined Contribution (INDC) (Excerpt)

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-CO₂.**



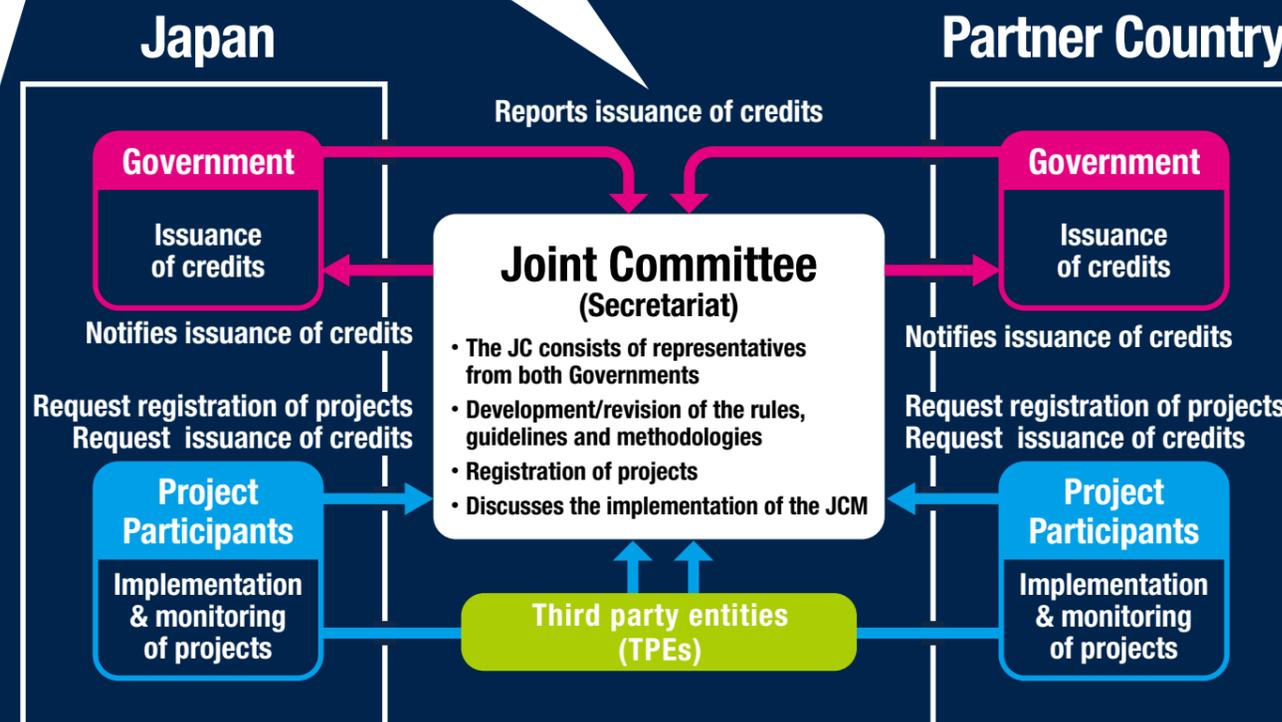
Semen Indonesia



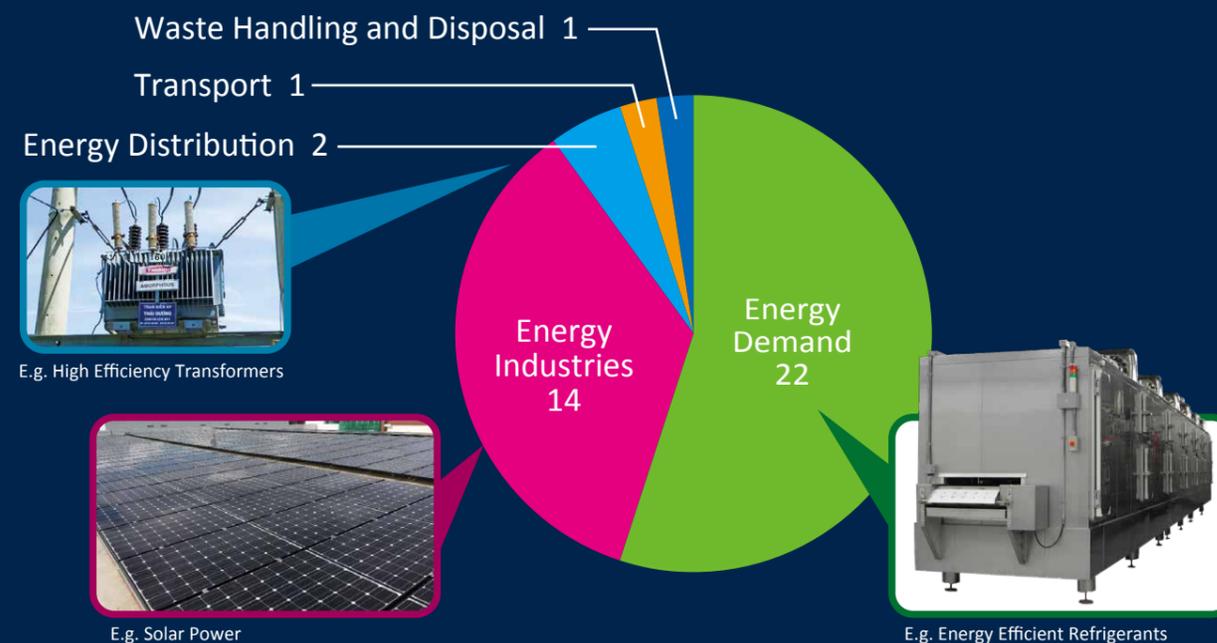
Waste Heat Recovery Boiler

Scheme of the JCM

9,879 t-CO₂ of JCM credits have been issued from 8 JCM projects as of Oct. 2017



Number of Approved Methodologies as of Sep. 2017



JCM Partner Countries

(as of Oct. 2017)



* : [Source] Presidential Communications Operations Office, Republic of the Philippines

Examples of Registered Projects

20 projects have been registered as JCM projects as of Sep. 2017.

Indonesia

175 t-CO₂/year

Introducing Double-bundle Modular Electric Heat Pumps at a Hotel

PP from Japan: Toyota Tsusho Corporation. /
PP from Indonesia : PT. TTL Residences

- Energy efficient electric heat pumps replacing conventional diesel/oil boilers installed in a new residential hotel, to provide hot water and air conditioning



Registered on 10 Feb 2017

Indonesia

141 t-CO₂/year

Energy Saving at Convenience Stores

PP from Japan: Lawson, Inc./
PP from Indonesia: PT MIDI UTAMA INDONESIA Tbk

- High efficiency refrigeration system for food and beverages using a natural refrigerant, Inverter-type air conditioners and LED lighting developed by Panasonic and installed at convenience stores



Registered on 03 Jun 2016

Thailand

491 t-CO₂/year

Introducing Solar PV Systems on Rooftops of Factory and Office

PP from Japan: Pacific Consultants Co., Ltd. (PCKK) /
PP from Thailand: Siam Steel International Public Company

- Solar PV system grids installed in factory complex rooftops for self-consumption



Registered on 21 Aug 2017

Mongolia

2,171 t-CO₂/year

Solar Power Plant for Power Supply

PP from Japan: Farmdo Co, Ltd. /
PP from Mongolia: Bridge LLC, Everyday Farm LLC

- Solar PV systems installed in agricultural farm grids achieving CO₂ emission reductions and generating revenues from electric power sales



Registered on 26 May 2017

Mongolia

11,221 t-CO₂/year

A mega Solar Power Project in Darkhan City

PP from Japan: Sharp Corporation /
PP from Mongolia: Solar Power International LLC

- 10MW solar power plant grids consisting of 32,000 modules constructed across vast Mongolian plain fields to supply clean energy



Registered on 26 May 2017

First credits issued on 24 Oct 2017

Viet Nam

328 t-CO₂/year

Eco-driving with the Use of Digital Tachographs

PP from Japan: NIPPON EXPRESS /
PP from Viet Nam : NIPPON EXPRESS (Viet Nam)

- Eco-drive promotion system using digital tachographs applied to 124 trucks in use, and contributing with an efficient and clean operation



Registered on 04 Aug 2015

First credits issued on 10 Oct 2017

Viet Nam

610 t-CO₂/year

Introduction of Amorphous High Efficiency Transformers in Power Distribution Systems

PP from Japan: Yuko Keiso Co., Ltd. /
PP from Viet Nam: EVN Southern Power Corporation

- Installation of 1,618 amorphous high efficiency transformers in transmission and distribution networks of southern Viet Nam



Registered on 15 May 2016

First credits issued on 10 Oct 2017

Palau

690 t-CO₂/year

Small-scale Solar Power Plants for Commercial Facilities and Schools

PP from Japan: Pacific Consultants Co., Ltd. (PCKK), InterAct Inc. /
PP from Palau : Western Caroline Trading Company, Surangel and Sons Company, Palau Investment and Development Company, Palau Adventist Schools

- Grid connected solar photovoltaic (PV) systems which endure salt wind from the ocean, installed to produce clean energy at commercial facilities and schools for self consumption



Registered on 21 Apr 2015 (commercial facilities)

12 July 2016 (commercial facilities and schools)

First credits issued on 22 Dec 2016

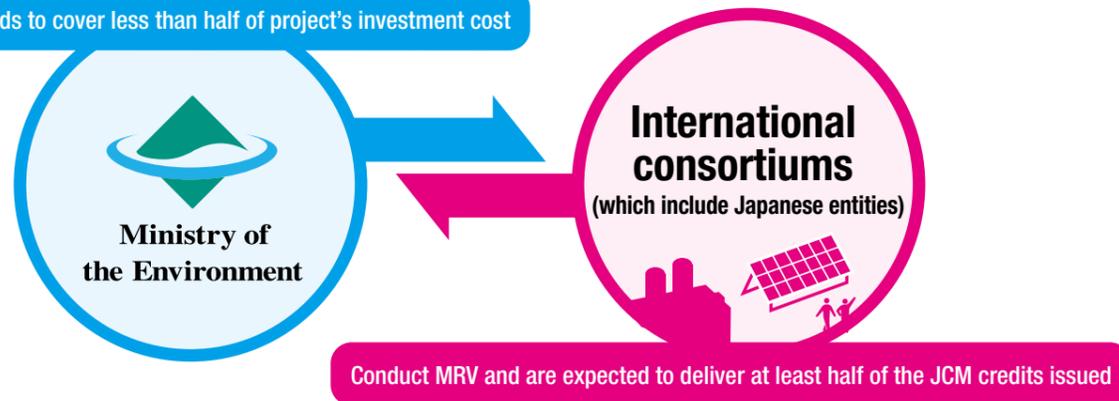
JCM Financing Programmes by the Ministry of the Environment, Japan (MOEJ)

JCM Model Projects

- ➔ Scope of the financing: facilities, equipment, vehicles, etc. which reduce CO₂ 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.
- ➔ Includes collaboration with projects supported by JICA and other governmental-affiliated financial institute.

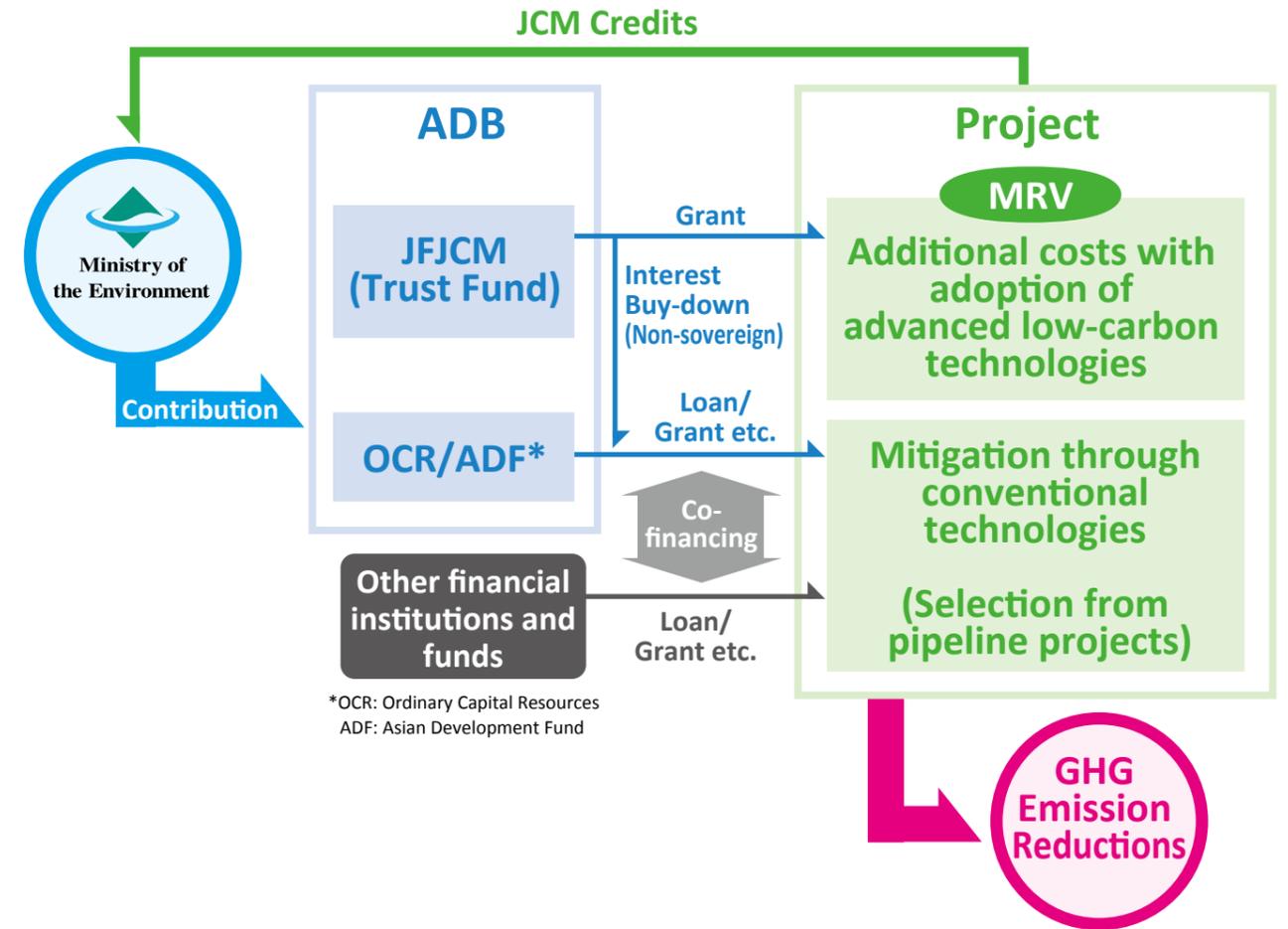
Budget from FY 2017 to FY 2019 | JPY 6 billion (approx. USD 60 million*) in total by FY 2019
 *USD 1 = JPY 100

Provides funds to cover less than half of project's investment cost



Asian Development Bank (ADB) Trust Fund: Japan Fund for the JCM (JFJCM)

- ▶ **Budget for FY 2017** JPY 1 billion (approx. USD 10 million)
- ▶ **Scheme** To acquire credits of the JCM, provides financial incentives for the adoption of advanced low-carbon technologies which excel in GHG emissions reduction but expensive in terms of general ADB-financed projects.



Introduction of Solar Panels for Power Generation at an International School
 (PP from Japan: Asia Gateway Corporation / PP from Cambodia: International School of Phnom Penh)



Introduction of Waste to Energy Plant in Yangon City
 (PP from Japan: JFE Engineering Corporation / PP from Myanmar: Yangon City Development Committee)



JCM Financing Programmes

by MOEJ

Selected projects in FY 2013/2014/2015/2016/2017

List of selected projects under the JCM support programme is available at <https://www.carbon-markets.go.jp/en/jcm/about/support/adoption.html>

◆ Energy Industries ◆ Energy Distribution ◆ Energy Demand ◆ Transport ◆ Waste Handling and Disposal ◆ REDD+
Italic projects in bold have started operations!

Viet Nam:

- ◆ **Eco-driving with the Use of Digital Tachographs**
- ◆ **Introduction of Amorphous High Efficiency Transformer in Northern, Central and Southern Power Grids (4 projects)**
- ◆ **Introduction of High Efficiency Air-conditioning in Hotel**
- ◆ **Energy Saving in Lens Factory with Energy Efficient Air-conditioners**
- ◆ **Energy Saving in Acid Lead Battery Factory with Container Formation Facility**
- ◆ **Introduction of Solar PV System at Shopping Mall in Ho Chi Minh City**
- ◆ **Energy Saving in Factories with Air-conditioning Control System**
- ◆ Installation of High Efficiency Kiln in Sanitary Ware Manufacturing Factory
- ◆ Introduction of High Efficiency Water Pumps in Da Nang City
- ◆ Installation of Energy Saving Equipment in Lens Factory
- ◆ Introduction of Energy Saving Equipment to Automotive Wire Production Factory
- ◆ Introduction of High Efficiency Centrifugal Chiller to Rubber Products Factory
- ◆ Introduction of Energy Saving Equipment to Brewery

Saudi Arabia:

- ◆ **Introduction of High Efficiency Electrolyzer in Chlorine Production Plant**

Ethiopia:

- ◆ **Introduction of Biomass CHP Plant in Flooring Factory**

Kenya:

- ◆ **6MW Small Hydropower Generation Project in Rupingazi**
- ◆ **Introduction of Solar PV System at Salt Factory**

Maldives:

- ◆ **Solar Power on Rooftop of School Building Project**
- ◆ **Smart Micro-grid system for POISED Project in Addu Atoll (ADB project)**

Bangladesh:

- ◆ **Energy Saving for Air Conditioning & Facility Cooling by High Efficiency Centrifugal Chiller (Suburbs of Dhaka)**
- ◆ **Installation of High Efficiency Loom at Weaving Factory**
- ◆ **Introduction of PV-diesel Hybrid System at Fastening Manufacturing Plant**
- ◆ **50MW Solar PV Power Plant Project**
- ◆ **Installation of High Efficiency Centrifugal Chiller for Air Conditioning System in Clothing Tag Factory**
- ◆ **Energy Saving of Air-conditioning System by Recovering Waste Heat from Engine in Textile Factory**

Myanmar:

- ◆ **Introduction of Waste to Energy Plant in Yangon City**
- ◆ **Introduction of Energy Saving Brewing Systems to Beer Factory**
- ◆ **Introduction of High-efficiency Once-through Boiler in Instant Noodle Factory**
- ◆ **1.8MW Rice Husk Power Generation**
- ◆ **Introduction of Energy Efficient Refrigeration System in Logistics Center**

Mongolia:

- ◆ **Upgrading and Installation of Centralized Control System of High-efficiency Heat Only Boiler (HOB)**
- ◆ **Installation of 2.1MW Solar Power Plant for Power Supply in Ulaanbaatar Suburb**
- ◆ **10MW Solar Power Project in Darkhan City**
- ◆ **Installation of 8.3MW Solar Power Plant in Ulaanbaatar suburb Farm**
- ◆ **Introduction of 15MW Solar Power System near New Airport**

Thailand:

- ◆ **Energy Saving at Convenience Stores with High Efficiency Air-conditioning and Refrigerated Showcase**
- ◆ **Introduction of Solar PV System on Factory Rooftop**
- ◆ **Reducing GHG Emission at Textile Factory by Upgrading to Air-saving Loom (Samutprakarn)**
- ◆ **Energy Saving for Semiconductor Factory with High Efficiency Centrifugal Chiller and Compressor**
- ◆ **Installation of Co-generation Plant for On-site Energy Supply in Motorcycle Factory**
- ◆ **Energy Saving for Air-conditioning in Tire Manufacturing Factory with High Efficiency Centrifugal Chiller**
- ◆ **Installation of High Efficiency Air Conditioning System and Chillers in Semiconductor Factory**
- ◆ **Introduction of High Efficiency Ion Exchange Membrane Electrolyzer in Caustic Soda Production Plant**
- ◆ **Introduction of LED Lighting to Sales Stores**
- ◆ **Introduction of High Efficiency Chilled Water Supply System in Milk Factory**
- ◆ **Introduction of 12MW Power Generation System by Waste Heat Recovery for Cement Plant**
- ◆ **Introduction of Co-generation System to Motor Parts Factory**
- ◆ **Introduction of Energy Saving Refrigerator and Evaporator with Mechanical Vapor Recompression in Amino Acid Producing Plant**
- ◆ **Introduction of 3.4MW Rooftop Solar Power System to Air-conditioning Parts Factories**
- ◆ **Introduction of 1.5MW Rooftop Solar Power System and Advanced EMS for Power Supply in Paint Factory**
- ◆ **Introduction of Energy Efficient Refrigeration System in Industrial Cold Storage**
- ◆ **Introduction of Heat Recovery Heat Pumps to Food Processing Factory**
- ◆ **Introduction of 5MW Floating Solar Power System on Industrial Water Reservoir**
- ◆ **Introduction of 27MW Rooftop Solar Power System to Large Supermarkets**
- ◆ **Introduction of High-efficiency Boiler System to Rubber Belt Plant**
- ◆ **Energy Saving by Air-conditioning Control System in Precision Parts Factories**
- ◆ **Introduction of Biomass Co-generation System to Food Factory**
- ◆ **Introduction of Energy Efficient Equipment to Bangkok Port**

Palau:

- ◆ **Small-scale Solar Power Plant for Commercial Facilities in Island States Project**
- ◆ **Small-scale Solar Power Plants for Commercial Facilities Project II**
- ◆ **Solar PV System for Schools Project**

Indonesia:

- ◆ **Energy Saving for Air-Conditioning and Process Cooling at Textile Factory (2 projects)**
- ◆ **Energy Savings at Convenience Stores**
- ◆ **Energy Efficient Refrigerants to Cold Chain Industry**
- ◆ **Energy Saving by Installation of Double Bundle-Type Heat Pump**
- ◆ **Power Generation by Waste Heat Recovery in Cement Industry**
- ◆ **Installation of Solar Power System and Storage Battery to Commercial Facility**
- ◆ **Energy Saving through Introduction of Regenerative Burners to the Aluminum Holding Furnace of the Automotive Components Manufacturer**
- ◆ **Energy Saving for Textile Factory Facility Cooling by High Efficiency Centrifugal Chiller**
- ◆ **Introduction of High Efficient Old Corrugated Cartons Process at Paper Factory**
- ◆ **Reducing GHG Emission at Textile Factories by Upgrading to Air-Saving Loom**
- ◆ **Energy Saving for Air-conditioning at Shopping Mall with High Efficiency Centrifugal Chiller**
- ◆ **Energy Saving for Industrial Park with Smart LED Street Lighting System**
- ◆ **Introduction of High Efficiency Once-through Boiler System in Film Factory**
- ◆ **REDD+ project in Boalemo District**
- ◆ **Installation of Gas Co-generation System for Automobile Manufacturing Plant**
- ◆ **Introduction of High Efficiency Once-through Boiler in Golf Ball Factory**
- ◆ **1.6MW Solar PV Power Plant Project in Jakabaring Sport City**
- ◆ **10MW Mini Hydro Power Plant Project in North Sumatra**
- ◆ **Introduction of LED Lighting to Sales Stores**
- ◆ **Introduction of High Efficiency Looms in Weaving Mill**
- ◆ **Energy Saving in Industrial Wastewater Treatment System for Rubber Industry**
- ◆ **Introduction of 0.5MW Solar Power System to Aroma and Food Ingredients Factory**
- ◆ **Introduction of Gas Co-generation System and Absorption Chiller to Large Shopping Mall**
- ◆ **Introduction of 1MW Solar Power System in North Sulawesi**
- ◆ **Energy Saving for Air-Conditioning Utility System in Airport Terminal by High-efficiency Control Equipment**

the Philippines:

- ◆ **15MW Mini Hydro Power Plant Project in Siguil River in Mindanao**
- ◆ **4MW Mini Hydro Power Plant Project in Taguibo River in Mindanao**
- ◆ **Introduction of 1.53MW Rooftop Solar Power System in Auto Parts Factories**
- ◆ **Introduction of 1MW Rooftop Solar Power System in Vehicle Assembly Factory**

Cambodia:

- ◆ **Introduction of High Efficiency LED Lighting Utilizing Wireless Network**
- ◆ **Introduction of Ultra-lightweight Solar Panels for Power Generation at International School**
- ◆ **Introduction of 1MW Solar Power System and High Efficiency Centrifugal Chiller in Large Shopping Mall**
- ◆ **Introduction of 0.8MW Solar Power Generation in International School**
- ◆ **Energy Saving by Inverters for Distribution Pumps in Water Treatment Plant**

Lao PDR:

- ◆ **REDD+ Project in Luang Prabang Province through Controlling Slush-and-burn**
- ◆ **Introduction of 14MW Floating Solar Power System in Vientiane**
- ◆ **Introduction of Amorphous High Efficiency Transformers in Power Grid**

Mexico:

- ◆ **Introduction of 4.8MW Power Generation with Methane Gas Recovery System**
- ◆ **Introduction of Once-through Boiler and Fuel Switching to Tequila Plant**
- ◆ **Los Altos II Wind Farm Project**
- ◆ **Introduction of 20MW Solar Power System in San Luis Potosi**

Costa Rica:

- ◆ **5MW Solar Power Project in Belen**
- ◆ **Introduction of the High Efficiency Chiller and the Exhaust Heat Recovery System**

Chile:

- ◆ **Introduction of 1MW Rooftop Solar Power System to University**
- ◆ **Introduction of 4.6MW Solar Power System near Santiago Metropolitan Region**

◆ Other 1 project in Malaysia

The following websites provide the latest information on the JCM

- JCM website: <https://www.jcm.go.jp>
- New Mechanisms Information Platform: <http://www.mmechanisms.org/e/>



Ministry of the Environment

Office of Market Mechanisms
Global Environmental Bureau
Ministry of the Environment, Japan
URL: <http://www.env.go.jp/en/>



Carbon Markets Express
Overseas Environmental Cooperation Center, Japan (OECC)
E-mail: info@carbon-markets.go.jp
URL: <https://www.carbon-markets.go.jp/eng/>