



Ministry of the Environment

Recent Developments of the Joint Crediting Mechanism (JCM)

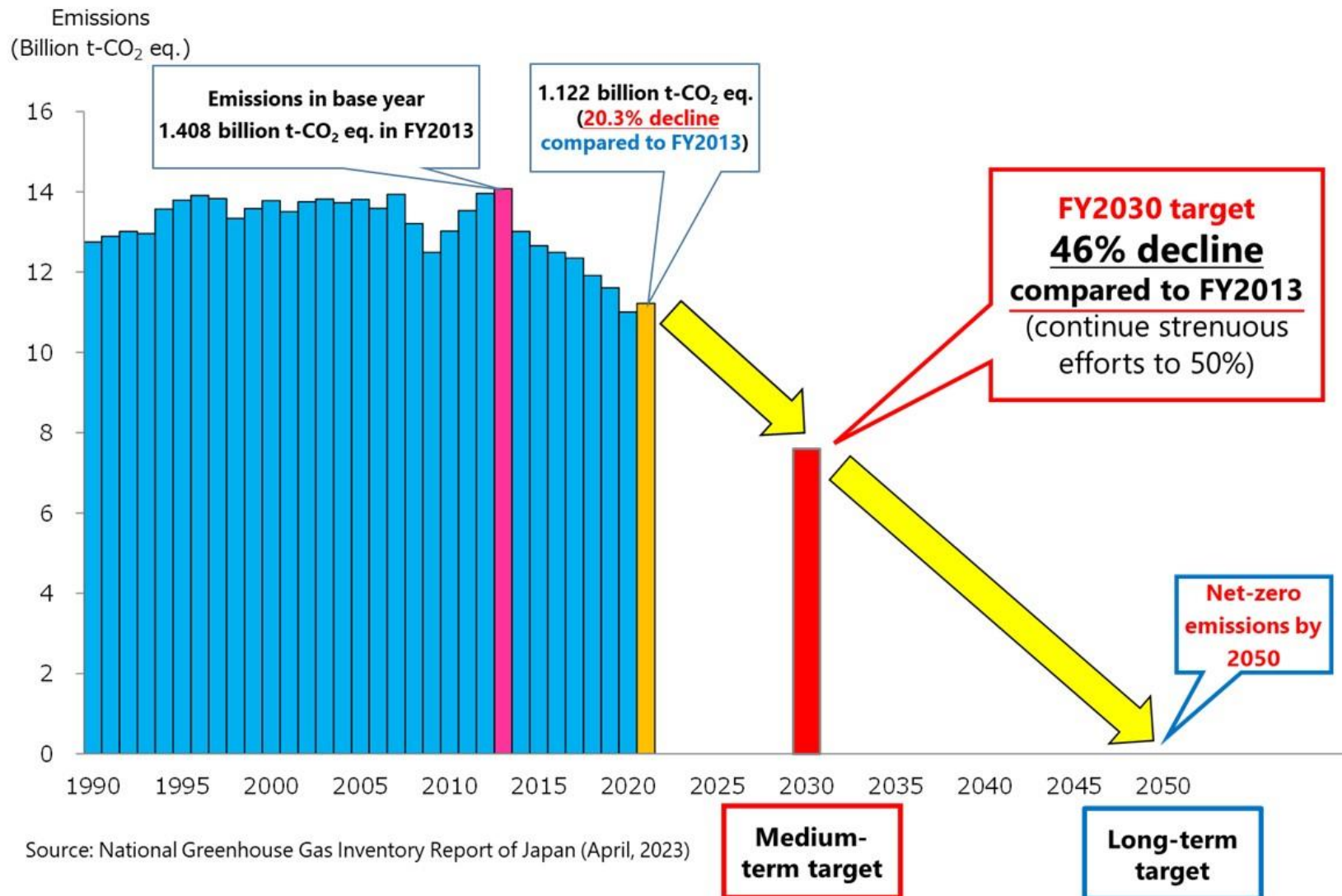
Webinar on the Joint Crediting Mechanism JCM Implementation for Tunisia
- Contribution to GHG Emission Reductions in Tunisia through the JCM -
1 November, 2023

Ministry of the Environment, Japan



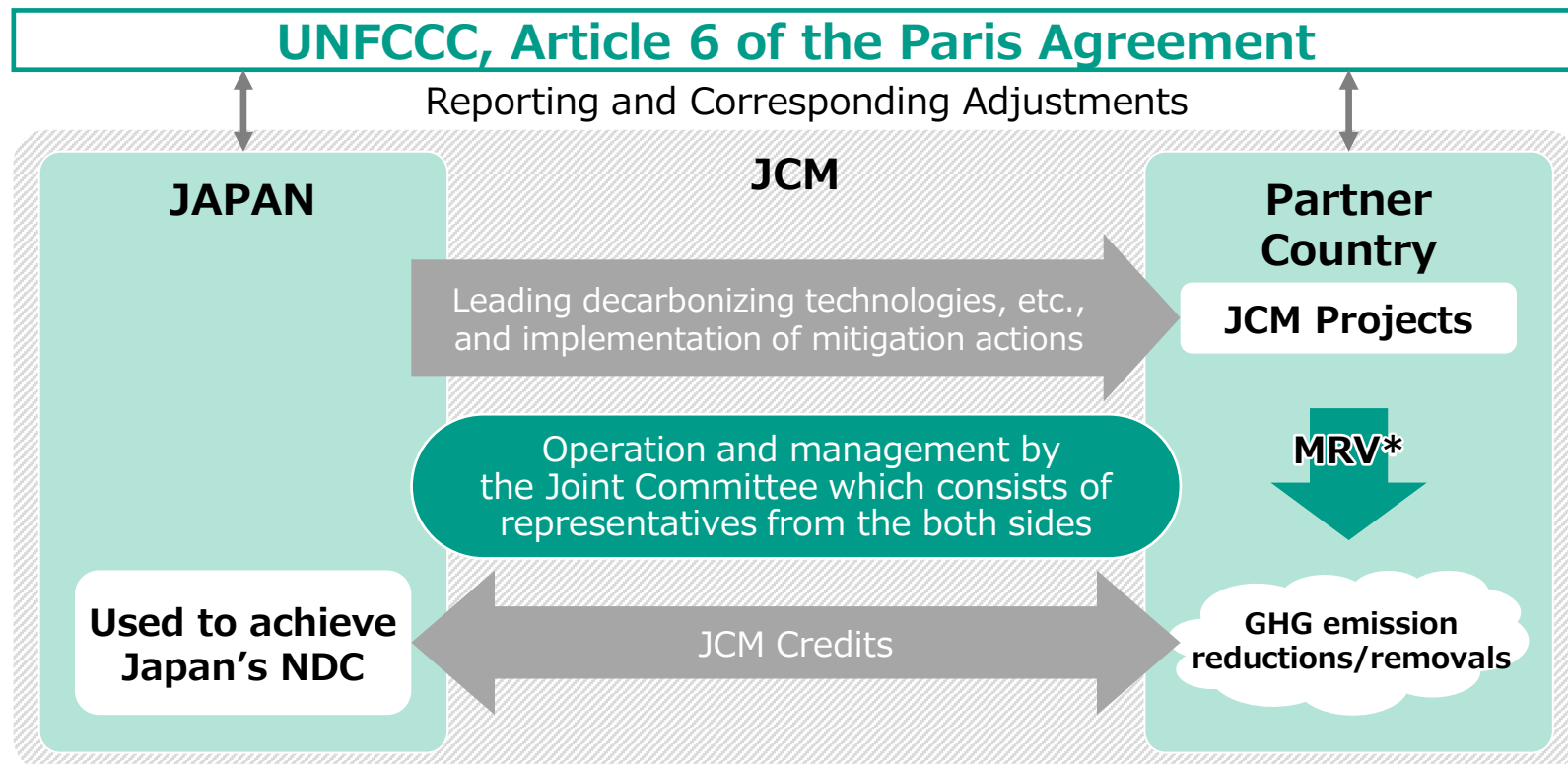
GHG emissions and target in Japan

- ❑ **Long-term goal: Net zero emissions by 2050** compared to 2013
- ❑ **Mid-term target: 46% emission reduction by 2030** compared to 2013
- ❑ GHG emissions in 2021: 1.122 billion ton of CO₂ eq. (20.3% decline compared to FY2013)
- ❑ **JCM target: cumulative GHG emission reduction for 100 mil tons** of CO₂ eq. by 2030



Basic Concept of the JCM

- Facilitate diffusion of leading decarbonizing technologies and infrastructure, etc., through investment by Japanese entities, thereby contributing to GHG emission reductions or removals and sustainable development in partner countries.
- Contribute to the achievement of both countries' NDCs while ensuring the avoidance of double counting through corresponding adjustments.
- Implement the JCM consistent with the guidance on cooperative approaches, referred to in Article 6, paragraph 2 of the Paris Agreement.



*measurement, reporting and verification

JCM progress

28 JCM Partner countries (Up to 30 partner countries by 2025)

More than **240** Projects Formulation

101 Approved Methodologies

Approx. **20** million-tCO₂ cumulative emission reductions by 2030

Alignment with **Article 6.2** guidance (Authorization, Corresponding Adjustment and Sustainable Development etc)

JCM Partner Countries (28 countries)



Mongolia
Jan. 8, 201 (Ulaanbaatar)



Bangladesh
Mar. 19, 2013 (Dhaka)



Ethiopia
May. 27, 2013 (Addis Ababa)



Kenya
Jun. 12, 2013 (Nairobi)



Maldives
Jun. 29, 2013 (Okinawa)



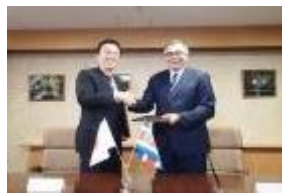
Viet Nam
Jul. 2, 2013 (Hanoi)



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)



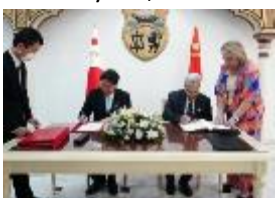
Thailand
Nov. 19, 2015 (Tokyo)



Philippines
Jan. 12, 2017 (Manila)



Senegal
Aug. 25, 2022 (Dakar)



Tunisia
Aug. 26, 2022 (Tunis)



Azerbaijan
Sept. 5, 2022 (Baku)



Moldova
Sept. 6, 2022 (Chisinau)



Georgia
Sept. 13, 2022 (Tbilisi)



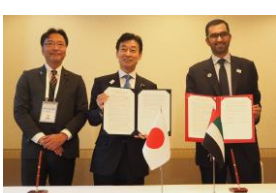
Sri Lanka
Oct. 10, 2022 (Colombo)



Uzbekistan
Oct. 25, 2022 (Tashkent)



Papua New Guinea
Nov. 18, 2022 (Sharm-el-Sheikh)



United Arab Emirates
Apr. 16, 2023 (Sapporo)



Kyrgyz Republic
July. 6, 2023 (Bishkek)



Republic of Kazakhstan*
October 30, 2023 (Astana)

Projects supported by the JCM financing programmes

Renewable Energy



Solar power, FARMLAND Co., Ltd., Chile



Floating Solar PV, TSB Co., Ltd., Thailand



Hydro Power Plant, Toyo Energy Farm Co., Ltd., Indonesia



Biomass Co-Generation System, Fuji-Foods Corporation, Thailand



Binary Power Generation Project at Geothermal Power Plant, MHI, Ltd., Philippines

Energy efficiency [Consumer sector]



High-efficiency refrigerator, Mayekawa MFG, Indonesia



Energy saving at convenience stores, Panasonic, Indonesia



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

Energy efficiency [Industrial sector]



Optimization in petroleum refining plant, Yokogawa Electric Corp. Indonesia



Energy-saving of mobile communications base transceiver stations, KDDI Corp. Indonesia

Energy efficiency [Urban sector]



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



Amorphous transformers in power distribution, Hitachi Materials, Vietnam

Waste



Power Generation with Methane Gas Recovery System, NTTDATA, Mexico



Waste to Energy Plant, JFE engineering, Myanmar

Transport



CNG-Diesel Hybrid Public Bus, Hokusan Co., Ltd., Indonesia

Activities related to the JCM by Government of Japan



Capacity building

- Article 6 Implementation partnership
- Secretariat work for the JCM
- Partnership for Market Implementation Facility [World Bank]
- City-to-city cooperation
- Training for TPEs



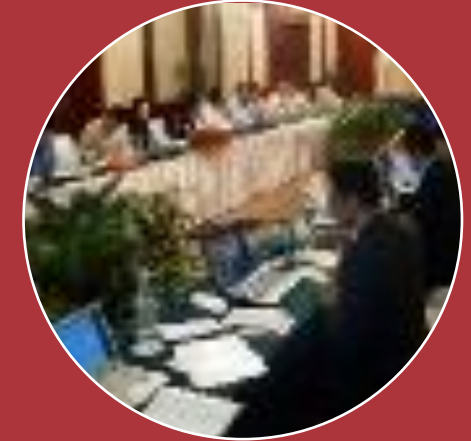
Project development

- Seminars/workshops
- JCM Global Match (biz matching website)
- Consultation with project developers/consultants
- City-to-city cooperation
- JCM Feasibility Study



Project implementation

- JCM Model Projects
- Japan Fund for the JCM [ADB]
- F-gas Recovery and Destruction Model Project
- Financial support for projects [UNIDO]
- JCM Demonstration Projects



Monitoring/evaluation

- Support for MRV (development of methodology and project design document, validation and verification by TPEs)
- Secretariat of the Joint Committee
- Support for establishment of a registry

Outreach activities through [Carbon Markets Express](#) (website)

Overview of Japan's support for the JCM partner countries

Ministry	Programme	Type of support
Ministry of the Environment	Finance Programme for JCM Model Projects*	Subsidy
	Finance Programme for F-gas Recovery and Destruction Model Projects*	Subsidy
	Japan Fund for the JCM (JF JCM) - managed by ADB	Grant
	JCM support programme by UNIDO*	Grant for projects, technical cooperation
	Project development/capacity building/MRV support	Technical cooperation
Ministry of Economy, Trade and Industry	JCM Feasibility Study	Technical cooperation
	JCM Demonstration Programme	Government-commissioned project
Forestry Agency	Field studies for JCM REDD+	Government-commissioned project

* These programmes can support projects implemented by government-owned companies but not those implemented by the government itself.

Finance programme for JCM Model Projects by MOEJ

Budget for projects starting from FY 2023 is approx. **15 billion JPY** (approx. **USD 109 million**) in total by FY2025 (1 USD = 137 JPY)

Government of Japan

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

Finance part of an investment cost (up to 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 CO₂ 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.

Finance programme JCM F-gas Recovery and Destruction Model Project by MOEJ

【Budget for FY2023】
61 million JPY (approx. 0.45million USD)
(1 USD = 137 JPY)

**Government
of Japan**

Finance part of the cost in flat-rate
(up to 40 million JPY/year)

Conduct MRV to estimate GHG emission reductions.
At least half or ratio of financial support to project cost
(larger ratio will be applied) of JCM credits issued are
expected to be delivered to the government of Japan

International consortiums (which include Japanese entities)

Manufacturers of
equipment which
uses F-gas

Users of
equipment which
uses F-gas

Entities for recovery and
transportation of used F-gas
(recycling or scrap entities)

Entities for destruction of used
F-gas (may use existing
facility for destruction)

Purpose

To recover and destroy F-gas (GHG except for energy-related CO₂, etc) from used equipment instead of releasing to air, and reduce emissions

Scope of Financing

- Establish scheme for recovery and destruction
- Install facilities/equipment for recovery/destruction
- Implementation of recovery, transportation, destruction and monitoring

Project Period

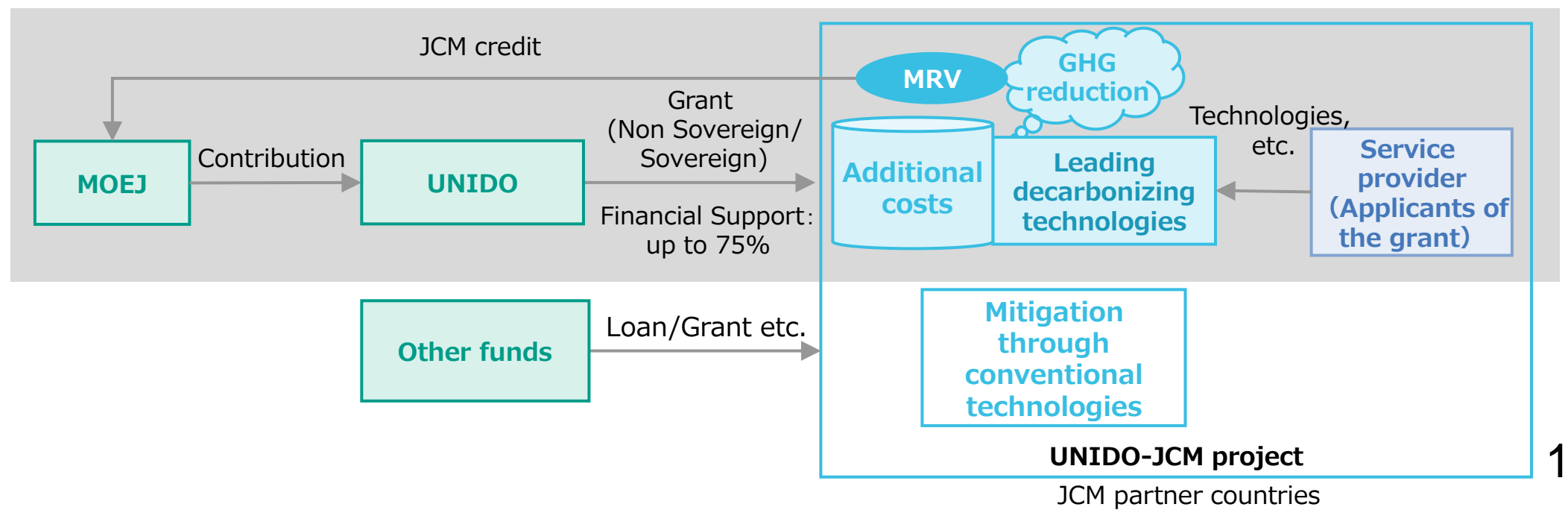
Three years in maximum
(Ex. 1st year for scheme, 2nd year for facilities, 3rd year for recovery/destruction)

Eligible Projects

- After financing is awarded, start implementation of recovery/destruction within three years
- Aim for the registration as JCM project and issuance credits

JCM support programme by UNIDO

Budget	Cumulative contribution from 2021: JPY 400 million (approx. USD 2.92 million) ※Budget for 2023: JPY 100 million (approx. USD 0.73 million)
Overview	<ul style="list-style-type: none"> Japanese service providers support the implementation of projects that utilize leading decarbonizing technologies/methane emission reduction technologies in JCM partner countries. Reduce the additional costs of the introduction of leading decarbonizing technologies/methane emission reduction technologies through financial support from UNIDO
Purpose	Targeting JCM partner countries, mainly in the African region, promote the transition to a decarbonization of society by developing a leading decarbonizing technologies, through the JCM scheme and aim to acquire JCM credits from realized GHG emissions reductions
Feature (Non-Sovereign)	<ul style="list-style-type: none"> Application: Japanese company as a service provider/ an international consortium Maximum Percentage of Financial Support : up to 75% Monitoring period : an annual basis for at least 5 years etc.



JCM Financing Programme by MOEJ (FY2013~2023) as of Nov 2023

Total 235 projects (28 partner countries)

(● Model Project: 222 projects (including Eco Lease: 7 projects), ■ ADB: 6 projects, ■ UNIDO: 1 project, ◆ REDD+: 2 projects, ▲ F-gas: 4 projects)

157 underlined projects have been started operation.

72 projects with * have been registered as JCM projects.

Cambodia: 5 projects

- LED Street Lighting*
- 200kW Solar PV at International School*
- 1MW Solar PV & Centrifugal Chiller
- Inverters for Distribution Pumps*
- 0.9MW Solar PV

Myanmar: 8 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
- 4.3MW Solar PV
- 8.8MW Waste Heat Recovery in Cement Plant
- Brewing Systems and Biogas Boiler to Brewery Factory

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: 3 projects

- Electrolyzer in Chlorine Production Plant*
- 400MW Solar PV
- 100MW Solar PV

Ethiopia: 1 project

- 120MW Solar PV

Kenya: 5 projects

- 1MW Solar PV at Salt Factory*
- 3.1MW Solar PV
- 2.3MW Solar PV
- 230kW Solar PV and Storage Battery
- 1.5MW Solar PV

Laos: 6 projects

- ◆ REDD+ through controlling slush-and-burn
- Amorphous transformers 1*
- 11MW Solar PV*
- Amorphous transformers 2
- 14MW Floating Solar PV*
- 15MW Solar PV

Thailand: 51 projects

- Energy Saving at Convenience Store
- Centrifugal Chiller & Compressor*
- Air Conditioning System & Chiller*
- Chilled Water Supply System
- 12MW Waste Heat Recovery in Cement Plant*
- Refrigerator and Evaporator
- 5MW Floating Solar PV*
- Biomass Co-generation System
- 17.8MW Solar PV in Industrial Park
- ▲ F-gas Recovery and Destruction Scheme
- Heat Exchanger in Fiber Factory
- 5MW Solar PV
- 32MW Solar PV and Floating Solar PV
- 35MW Solar PV and Storage Battery
- 1.3MW Solar PV (Eco Lease)
- ORC Waste Heat Recovery
- Methane Avoidance and Biomass Boiler in Fruit Processing Factory
- 1MW Solar PV on Factory Rooftop*
- Centrifugal Chiller in Tire Factory
- Refrigeration System*
- LED Lighting to Sales Stores
- Co-generation System PV
- Heat Recovery Heat Pump*
- Boiler System in Rubber Belt Plant
- Co-generation in Fiber Factory
- 3.4MW Solar PV
- 0.8MW Solar PV and Centrifugal Chiller
- 37MW Solar PV and Melting Furnace
- Centrifugal Chiller to Machinery Factory
- 2.7MW Solar PV with Blockchain Technology
- Once-through Boiler in Garment Factory
- 2MW Solar PV 3
- Gas Co-generation System & 22MWSolar PV
- 2.9MW Solar PV
- 0.9MW Solar PV
- 1.6MW Solar PV (Eco Lease)
- Upgrading Air-saving Loom*
- Co-generation in Motorcycle Factory*
- Ion Exchange Membrane Electrolyzer
- 2MW Solar PV 1
- 3.4MW Solar PV*
- 30MW Solar PV*
- Air-conditioning Control System
- Biomass Boiler
- 0.8MW Solar PV and Centrifugal Chiller
- 37MW Solar PV and Melting Furnace
- Centrifugal Chiller to Machinery Factory
- 2.7MW Solar PV with Blockchain Technology
- Once-through Boiler in Garment Factory
- 2MW Solar PV 3
- Gas Co-generation System & 22MWSolar PV
- 2.9MW Solar PV
- 0.9MW Solar PV
- 1.6MW Solar PV (Eco Lease)

Mongolia: 9 projects

- Heat Only Boiler (HOB)**
- 15MW Solar PV1*
- Improving Access to Health Services
- 2.1MW Solar PV in Farm*
- Upscaling Renewable Energy Sector
- 10MW Solar PV*
- Fuel Conversion by Introduction of LPG Boilers
- 8.3MW Solar PV in Farm*
- 15MW Solar PV 2

Viet Nam: 44 projects

- Digital Tachographs*
- Container Formation Facility*
- Air-conditioning Control System
- Energy saving Equipment in Lens Factory*
- Amorphous transformers 4
- Modal Shift with Reefer Container
- ▲ F-gas Recovery and Dedicated Destruction Scheme
- 49MW solar PV
- 12MW Solar PV
- ▲ F-gas Recovery and Mixed Combustion Scheme
- 7.9MW Solar PV
- 1.8MW Solar PV
- Amorphous transformers 1*
- 320kW Solar PV in Shopping Mall*
- Electricity Kiln
- Amorphous transformers 3*
- Energy Saving Equipment in Brewery Factory
- Inverters for Raw Water Intake Pumps
- Biomass Boiler to Chemical Factory
- Air Cooled Chillers
- Biomass Boiler
- LED Lighting to Office Building
- 2.5MW Solar PV
- 20MW Biomass Power Plant
- 5.7MW Solar PV
- 1.9MW Solar PV
- Air-conditioning in Hotel 1*
- Air-conditioning in Lens Factory*
- Amorphous transformers 2*
- High Efficiency Water Pumps*
- Energy Saving Equipment in Wire Production Factory*
- High Efficiency Chiller
- 9MW Solar PV
- Chiller and LED
- 16MW Mini Hydro Power Plant
- 48MW Offshore Wind Power
- Air-conditioning in Hotel 2
- 2MW Solar PV
- Waste to Energy
- 9.8MW Solar PV
- 5.8MW Solar PV
- 2.5MW Solar PV
- 2.0MW Solar PV (Eco Lease)
- 1.9MW Solar PV

Philippines: 17 projects

- 1.53MW Rooftop Solar PV *
- 4MW Solar PV *
- 29MW Binary Geothermal Power Generation
- 20MW Flash Geothermal Power Plant
- 28MW Binary Geothermal Power Generation
- 14.5MW Mini Hydro Power Plant
- 0.8MW Solar PV (Eco Lease)
- 6MW Waste Heat Recovery in Cement Plant
- 1.2MW Solar PV (Eco Lease)
- 1MW Rooftop Solar PV
- 1.2MW Rooftop Solar PV *
- Biogas Power Generation and Fuel Conversion
- ▲ F-gas Recovery and Destruction Scheme
- 9MW Solar PV
- 5.6MW Binary Geothermal Power Generation
- 27MW Solar PV

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

Indonesia: 52 projects

- Centrifugal Chiller at Textile Factory 1*
- Refrigerants to Cold Chain Industry**
- Centrifugal Chiller at Textile Factory 2*
- 500kW Solar PV and Storage Battery*
- Centrifugal Chiller at Textile Factory*
- 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 Plant 1
- Industrial Wastewater Treatment System
- Absorption Chiller*
- Rehabilitation of Hydro Power Plant
- Boiler to Carton Box Factory
- 6MW Hydro Power Plant 2
- 8MW Mini Hydro Power Plant
- 6MW Hydro Power Plant 3
- Once-through Boiler in Chemical Factory
- 2.1MW Solar PV
- 55MW Geothermal Power Generation
- Improvement of Flat Glass Production Melting Furnace
- 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
- LED Lighting to Sales Stores
- Gas Co-generation system
- CNG-Diesel Hybrid Public Bus
- 2MW Mini Hydro Power Plant
- 6MW Hydro Power Plant 1
- 4.2MW Solar PV
- 3.3MW Rooftop Solar PV
- High Efficiency Autoclave 2
- 3.1MW Solar PV
- Energy Saving and Solar PV
- 3MW Solar PV
- 9MW Solar PV 1
- 3MW Solar PV 2
- 9MW Solar PV 3
- 9MW Solar PV 3
- 47MW Solar PV
- 26.3MW Solar PV and 48MWh Storage Battery
- 3MW Solar PV 1
- 3MW Solar PV 2
- 25.8MW Solar PV
- 9MW Solar PV 2
- 6MW Solar PV
- 9MW Solar PV 4
- 2.0MW Solar PV
- Looms in Weaving Mill*
- LED Lighting to Sales Stores
- Gas Co-generation system
- CNG-Diesel Hybrid Public Bus
- 2MW Mini Hydro Power Plant
- 6MW Hydro Power Plant 1
- 4.2MW Solar PV
- 3.3MW Rooftop Solar PV
- High Efficiency Autoclave 2
- 3.1MW Solar PV
- Energy Saving and Solar PV
- 3MW Solar PV
- 0.5MW Solar PV (Eco Lease)
- 9MW Solar PV
- 30MW Solar PV 1
- Energy Efficient Distillation System
- 0.5MW Solar PV (Eco Lease)
- 1.2MW Power Generation with Methane Gas Recovery System
- Once-through Boiler and Fuel Switching
- 30MW Solar PV 1
- Energy Efficient Distillation System
- 0.5MW Solar PV (Eco Lease)
- 1.2MW Rooftop Solar PV *
- 3.4MW Rice Husk Power Generation
- 3MW Solar PV 1*
- 25.8MW Solar PV
- 9MW Solar PV 2
- 6MW Solar PV
- 9MW Solar PV 4
- 2.0MW Solar PV
- 3MW Solar PV 2
- 9MW Solar PV 1
- 3MW Solar PV 3
- 9MW Solar PV 3
- 47MW Solar PV
- 26.3MW Solar PV and 48MWh Storage Battery

Mexico: 5 projects

- 1.2MW Power Generation with Methane Gas Recovery System
- Once-through Boiler and Fuel Switching
- 30MW Solar PV 1
- Energy Efficient Distillation System
- 0.5MW Solar PV (Eco Lease)

Costa Rica: 2 projects

- 5MW Solar PV*
- Chiller and Heat Recovery System

Thank you for your kind attention



Ministry of the Environment