



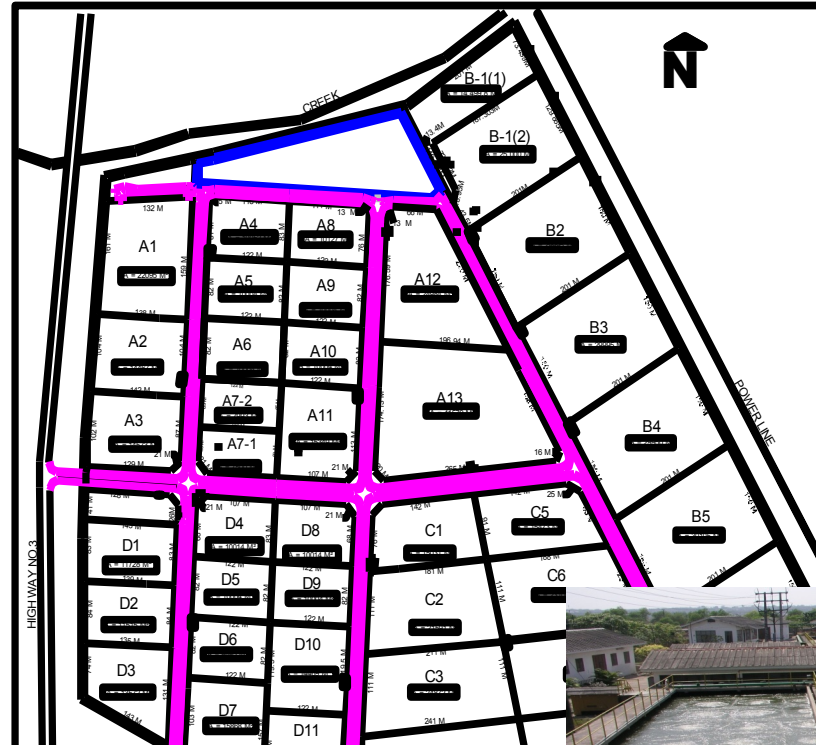
References



Candidate JCM projects in Yangon city (1/2)

Industrial park (IP) has various potential to mitigate energy consumption. In order to solve energy issues in IP, the following renewal /introducing activities are expected as JCM project not only in IP infrastructure but also tenant facilities.

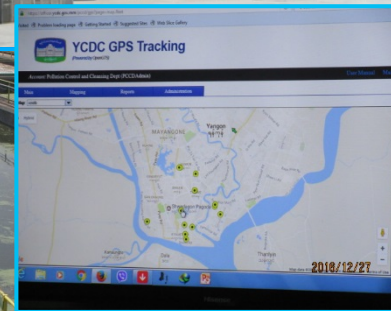
- High efficiency air conditioning system
- High efficiency lighting system
- High efficiency water supply system
- Solid waste energy system
- Back-up power supply system
- Distribution line etc.



Candidate JCM projects in Yangon city (2/2)

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 water supply/waste water system

- High efficiency water pump system
- High efficiency waste water pump system
- Solid waste energy system etc.

Low carbon waste management system

- Integrated vehicle management system
- Waste to energy project

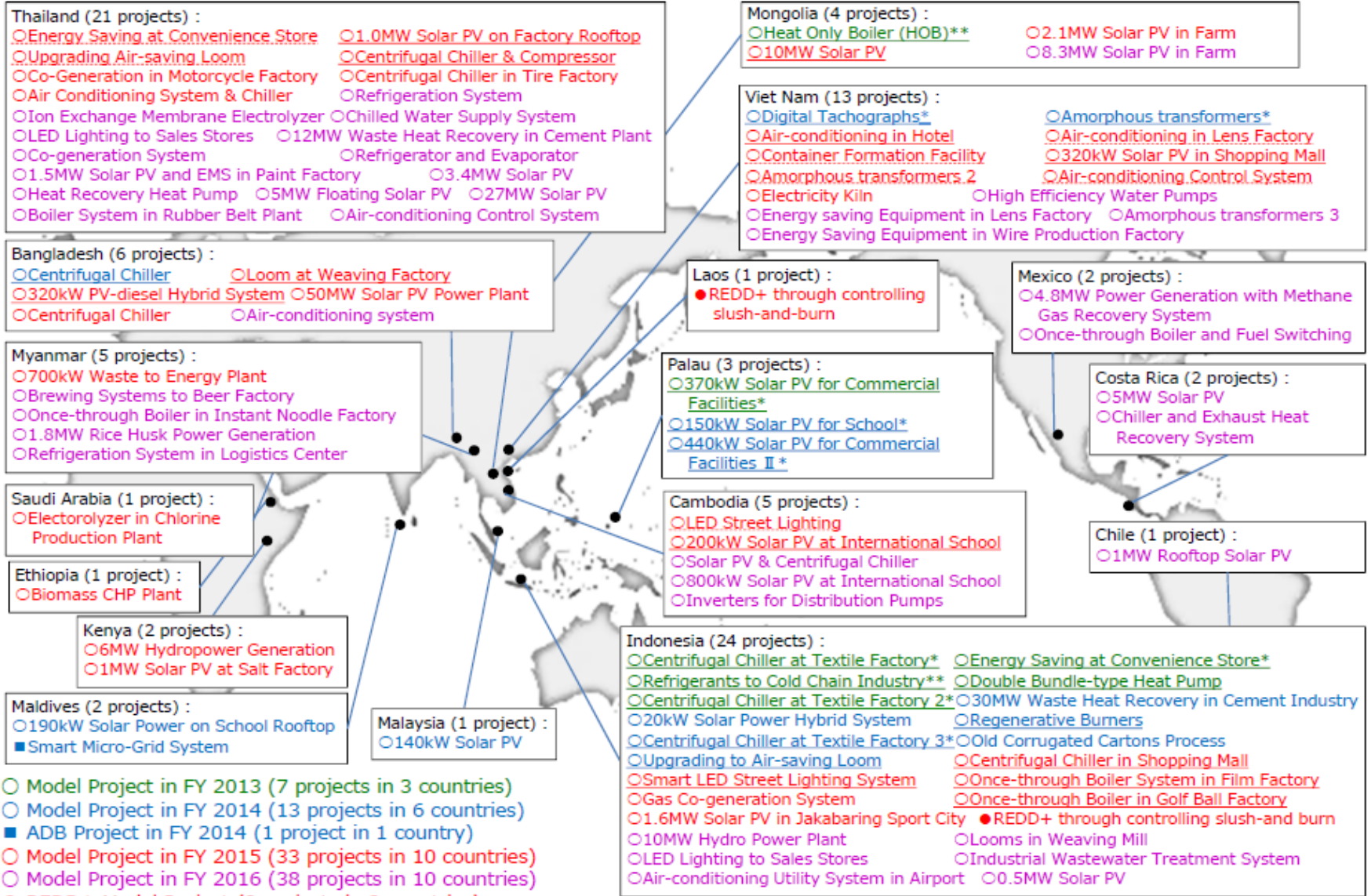


Renewable energy /new energy

- Solar power system
- Biomass power generation system
- Biogas power generation system
- Back-up power supply system
- Application of natural gas etc.



JCM financing programme by MOEJ (FY2013~2016)



Total 93 projects in 16 partner countries

Underlined projects have started operation (34 projects, including 7 partially started projects)
Projects with * have been registered as JCM projects (13 projects)

Examples of JCM projects (1/3)

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**



Batang, Central Java,
Indonesia

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

Examples of JCM projects (2/3)

FS2014-16

Introduction of Waste to Energy Plant in Yangon City

Myanmar



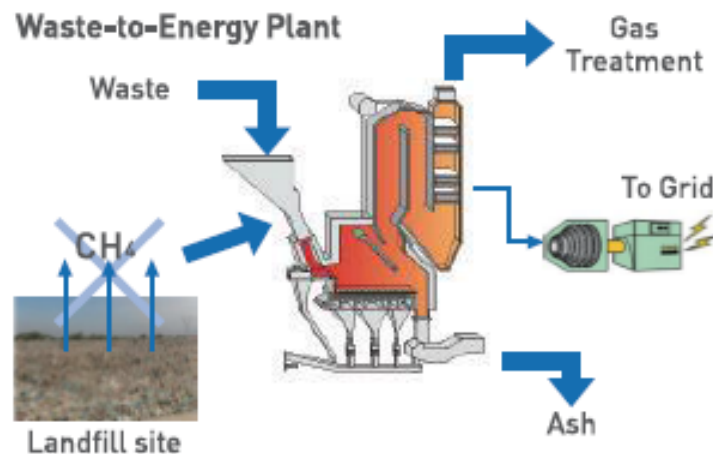
Expected GHG
Emission Reductions
1,500 tCO₂/year



Yangon City,
Myanmar

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.



Examples of JCM projects (3/3)

MP2013-ID03

Energy Savings at Convenience Stores

Indonesia



Expected GHG
Emission Reductions

28.5 tCO₂/store/year



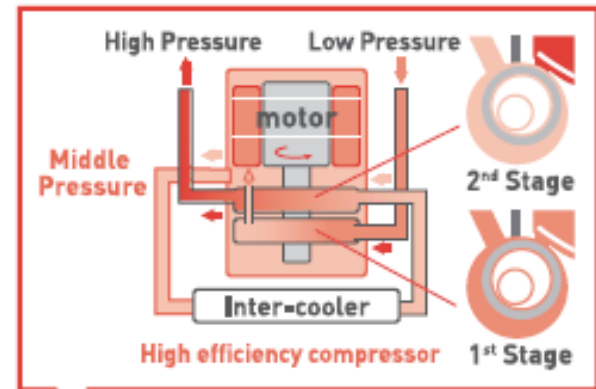
in/around Jakarta,
Indonesia

Project Owner

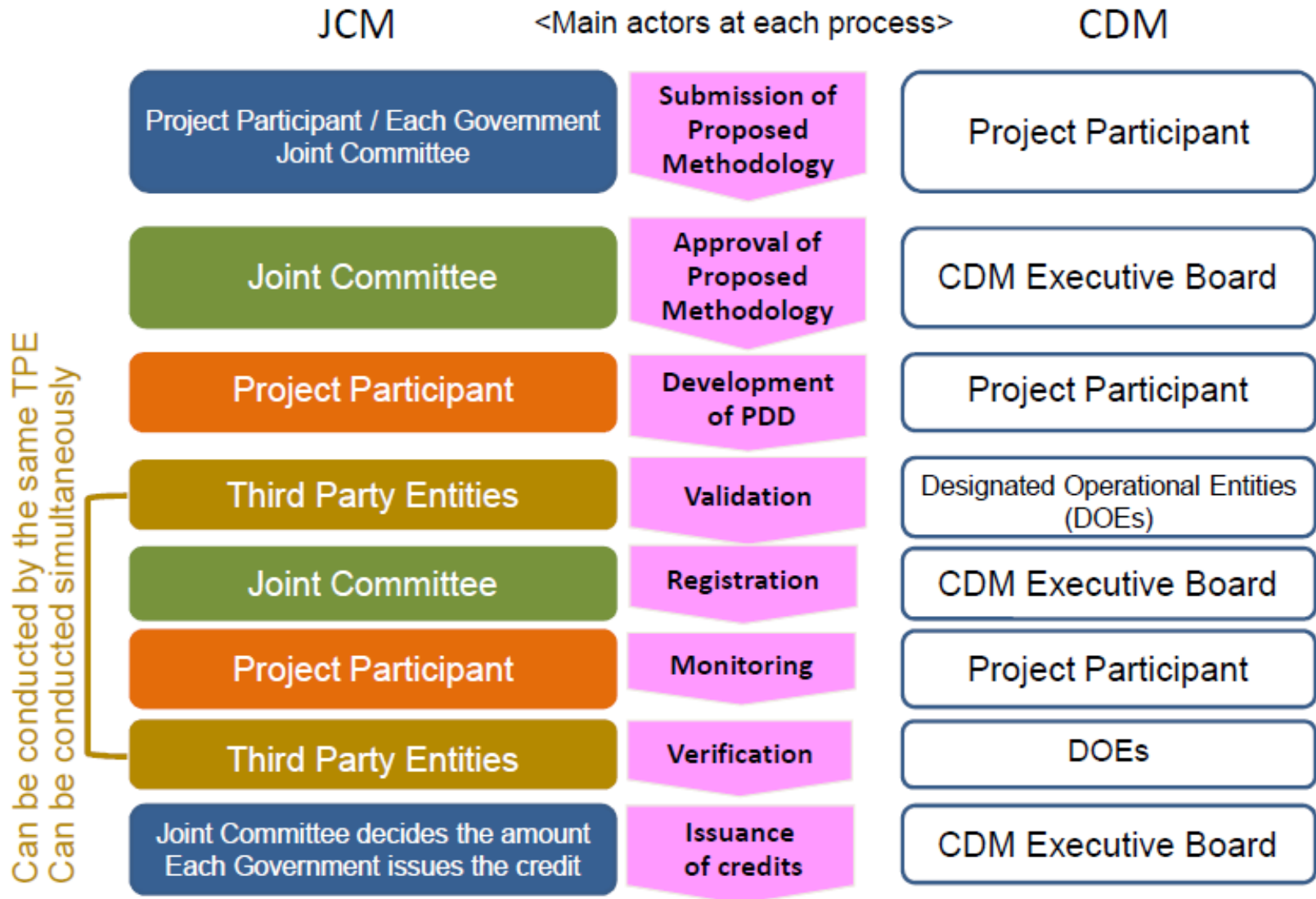
Japan : Lawson, Inc.

Indonesia : PT. Midi Utama Indonesia Tbk

Total electricity consumption of food retail convenience stores is decreased by the installation of the latest high-efficiency facilities and high-efficiency chillers with natural refrigerant (CO₂ refrigerant), inverter-controlled air-conditioners, and LED lighting. As a result, CO₂ emissions due to electricity consumption are reduced.



Project cycle of the JCM and the CDM



JCM registered project (1/2)

No.	Country	Project Title	General description of project
MN001	Mongolia	Installation of High-Efficiency Heat Only Boilers in 118th School of Ulaanbaatar City Project	Introducing high-efficiency HOBs to fulfill the demand of new heat facilities for the school buildings. Optimizing boiler operation through the implementation of operation management and technical guidance.
MN002	Mongolia	Centralization of Heat Supply System by Installation of High-Efficiency Heat Only Boilers in Bornuur soum Project	Introducing high-efficiency HOBs to fulfill the demand for heat supply system in the public buildings. Optimizing boiler operation through the implementation of operation management and technical guidance.
VN001	Viet Nam	Eco-Driving by Utilizing Digital Tachograph System	Improving transportation fuel efficiency by installing digital tachographs, in which the quantity of fuel consumption and running distance are continuously analyzed and provide feedbacks and advices to the drivers based on the analyzed data.
VN002	Viet Nam	Promotion of green hospitals by improving efficiency / environment in national hospitals in Vietnam	Installing inverter room air conditioners (RACs) and Energy Management System (EMS) to optimize operation of multiple inverter RACs in national hospitals
VN003	Viet Nam	Low carbon hotel project in Vietnam: Improving the energy efficiency of commercial buildings by utilization of high efficiency equipment	Installing high-efficiency equipment of hot water supply, air conditioning management system and LED lighting for improving the energy efficiency of hotels
VN004	Viet Nam	Introduction of amorphous high efficiency transformers in power distribution systems in the southern part of Viet Nam	Introducing 1,618 amorphous high efficiency transformers which reduce transmission and distribution loss in the power distribution system of southern Vietnam.
ID001	Indonesia	Energy Saving for Air-Conditioning and Process Cooling by Introducing High-efficiency Centrifugal Chiller	Improving energy saving for air-conditioning and process cooling by introducing high-efficiency centrifugal chiller equipped with high-performance economizer cycle, and super-cooling refrigerant cycle in a textile factory.

JCM registered project (2/2)

No.	Country	Project Title	General description of project
ID002	Indonesia	Project of Introducing High Efficiency Refrigerator to a Food Industry Cold Storage in Indonesia	Introducing advanced energy efficient cooling system using natural refrigerant in the food industry cold storage.
ID003	Indonesia	Project of Introducing High Efficiency Refrigerator to a Frozen Food Processing Plant in Indonesia	Introducing advanced energy efficient cooling system using natural refrigerant in the frozen food processing plant.
ID004	Indonesia	Energy Saving for Air-Conditioning at Textile Factory by Introducing High-efficiency Centrifugal Chiller in Karawang, West Java	Improving energy saving for air-conditioning and process cooling by introducing high-efficiency centrifugal chiller equipped with high-performance economizer cycle, and super-cooling refrigerant cycle in a textile factory.
ID005	Indonesia	Energy Saving for Air-Conditioning at Textile Factory by Introducing High-efficiency Centrifugal Chiller in Batang, Central Java (Phase 2)	Improving energy saving for air-conditioning and process cooling by introducing high-efficiency centrifugal chiller equipped with high-performance economizer cycle, and super-cooling refrigerant cycle in a textile factory.
ID006	Indonesia	Installation of Inverter-type Air Conditioning System, LED Lighting and Separate Type Fridge Freezer Showcase to Grocery Stores in Republic of Indonesia	Introducing high-efficiency facilities to the grocery stores for saving energy as below; <ul style="list-style-type: none"> - Inverter-type air conditioner - LED lighting - Fridge freezer showcase with natural refrigerant
PW001	Palau	Small Scale Solar Power Plants for Commercial Facilities in Island States	Installing high quality solar cell modules with high conversion efficiency with a monitoring system which realizes appropriate operation and management.
PW002	Palau	Small Scale Solar Power Plants for Schools in Island States	Installing high quality solar cell modules with high conversion efficiency with a monitoring system which realizes appropriate operation and management.
PW003	Palau	Small Scale Solar Power Plants for Commercial Facilities in Island States II	Installing high quality solar cell modules with high conversion efficiency with a monitoring system which realizes appropriate operation and management.

JCM approved methodologies (1/3)

No.	Country	Sectoral Scope	Methodology Title	GHG Emission Reduction Measures
MN_AM001	Mongolia	Energy distribution	Installation of energy-saving transmission lines in the Mongolian Grid	Reduction of transmission loss by introduction of LL-ACSR/SA (Low Electrical Power Loss Aluminum Conductors, Aluminum-Clad Steel Reinforced).
MN_AM002	Mongolia	Energy industries	Replacement and Installation of High Efficiency Heat Only Boiler (HOB) for Hot Water Supply Systems	Installation of new HOB for hot water supply system and the replacement of existing coal-fired HOB. The boiler efficiency of the reference HOB is typically lower than that of the project HOB. Therefore, the project activity leads to the reduction of coal consumption, resulting in lower emission of GHGs as well as air pollutants.
BD_AM001	Bangladesh	Energy demand	Energy Saving by Introduction of High Efficiency Centrifugal Chiller	Saving energy by introducing high efficiency centrifugal chiller for the target factory, commerce facilities etc.
ET_AM001	Ethiopia	Energy industries	Electrification of communities using Micro hydropower generation	Displacement of electricity using diesel fuel and/or lighting using kerosene by installation and operation of the micro hydropower generation unit.
KE_AM001	Kenya	Energy industries	Electrification of communities using Micro hydropower generation	Displacement of electricity using diesel fuel and/or lighting using kerosene by installation and operation of the micro hydropower generation unit.
MV_AM001	Maldives	Energy industries	Displacement of Grid and Captive Genset Electricity by Solar PV System	Displacement of grid electricity and/or captive electricity using diesel fuel as a power source by installation and operation of the solar PV system(s)
VN_AM001	Viet Nam	Transport	Transportation energy efficiency activities by installing digital tachograph systems	Improvement of driving efficiency by installation of digital tachograph system to freight vehicle fleets providing to the drivers a real-time feedback against inefficient driving.
VN_AM002	Viet Nam	Energy demand	Introduction of Room Air Conditioners Equipped with Inverters	Energy saving achieved by introduction of RACs equipped with inverters.

JCM approved methodologies (2/3)

No.	Country	Sectoral Scope	Methodology Title	GHG Emission Reduction Measures
VN_AM003	Viet Nam	Energy demand	Improving the energy efficiency of commercial buildings by utilization of high efficiency equipment	Reduction of electricity and fossil fuel consumed by existing facilities is achieved by replacing or substituting these facilities with high efficiency equipment.
VN_AM004	Viet Nam	Waste handling and disposal	Anaerobic digestion of organic waste for biogas utilization within wholesale markets	Avoid the emissions of methane to the atmosphere from organic waste that have been left to decay anaerobically at a solid waste disposal site and to introduce renewable energy technologies that supply biogas that displaces fossil fuel use.
VN_AM005	Viet Nam	Energy distribution	Installation of energy efficient transformers in a power distribution grid	Installation of energy efficient transformers (transformers with amorphous metal core) in a power distribution grid to reduce no-load losses by transformers, which leads to reduction of losses for grid electricity
ID_AM001	Indonesia	Energy industries	Power Generation by Waste Heat Recovery in Cement Industry	Waste heat recovery (WHR) system generates electricity through waste heat recovered from cement production facility. Electricity generated from the WHR system replaces grid electricity resulting in GHG emission reductions of the connected grid system.
ID_AM002	Indonesia	Energy demand	Energy Saving by Introduction of High Efficiency Centrifugal Chiller	Saving energy by introducing high efficiency centrifugal chiller for the target factory, commerce facilities etc.
ID_AM003	Indonesia	Energy demand	Installation of Energy-efficient Refrigerators Using Natural Refrigerant at Food Industry Cold Storage and Frozen Food Processing Plant	Saving energy by introducing high efficiency refrigerators to the food industry cold storage and frozen food processing plants.
ID_AM004	Indonesia	Energy demand	Installation of Inverter-Type Air Conditioning System for Cooling for Grocery Store	Saving energy by introducing inverter-type air conditioning system for cooling for grocery store.

JCM approved methodologies (3/3)

No.	Country	Sectoral Scope	Methodology Title	GHG Emission Reduction Measures
ID_AM005	Indonesia	Energy demand	Installation of LED Lighting for Grocery Store	Saving energy by introducing LED (Light Emitting Diode) lighting for grocery store.
ID_AM006	Indonesia	Energy demand	GHG emission reductions through optimization of refinery plant operation in Indonesia	Introduction of plant optimization control systems (APC) that reduce energy consumption in the hydrogen production unit (HPU) and hydro cracking unit (HCU) at a refinery plant.
ID_AM007	Indonesia	Energy demand	GHG emission reductions through optimization of boiler operation in Indonesia	The project achieves energy conservation in boilers, through operation optimization by applying Utility Facility Operation Optimization Technology.
ID_AM008	Indonesia	Energy demand	Installation of a separate type fridge-freezer showcase by using natural refrigerant for grocery store to reduce air conditioning load inside the store	Saving total energy of in-store showcase and air conditioning system by introducing a separate type natural refrigerant fridge-freezer showcase for grocery store, which leads to GHG emission reductions, through the reduction of air conditioning electricity load demand by not releasing waste heat inside the store.
ID_AM009	Indonesia	Energy demand	Replacement of conventional burners with regenerative burners for aluminum holding furnaces	By replacing conventional burners with regenerative burners for aluminum holding furnaces, consumption of natural gas is reduced, which leads to the reduction of GHG emissions.
ID_AM010	Indonesia	Energy demand	Introducing double-bundle modular electric heat pumps to a new building	The project contributes to GHG emission reductions at a new building, by reducing electricity and oil consumption with efficient double-bundle modular electric heat pumps where heating/cooling energy is simultaneously generated.
PW_AM001	Palau	Energy industries	Displacement of Grid and Captive Genset Electricity by a Small-scale Solar PV System	Displacement of grid electricity and/or electricity using diesel fuel as a power source by installation and operation of the solar PV system(s).
KH_AM001	Cambodia	Energy demand	Installation of LED street lighting system with wireless network control	The street lighting system that introduces LED lamps and lighting control devices with utilization of wireless network is installed on streets to save electricity consumption.