



Progress of The Joint Crediting Mechanism (JCM) In Indonesia

December 2017

Source :

- MOEJ-GEC JCM booklet “The Joint Crediting Mechanism (JCM) : Progress of Financing Programme and Feasibility Studies for JCM Projects by MOEJ” June 2015 edition
- The JCM Project information provided by the participant companies
- JCM Indonesia Website : <http://jcm.ekon.go.id>
- JCM Japan Website : <http://jcm.go.jp>
- New Mechanism Information Platform Website by Ministry of Environment Japan : <http://www.mmechanisms.org/e/index.html>

Table of Contents

What is the JCM?

A. History of the JCM in Indonesia	3
B. Basic Concept of the JCM Cooperation between Japan and Indonesia	4
C. MRV Methodology.....	5
D. Project Cycle of the JCM.....	5

JCM Promotion Scheme

1. Financing Programme for JCM Model Projects by MOEJ.....	7
2. Promotion Scheme for JCM Demonstration Projects by METI/NEDO	8
3. ADB Trust Fund : Japan Fund for Joint Crediting Mechanism (JFJCM)	8
4. JCM REDD+ Model Projects by MOEJ	9
5. JCM Feasibility Study for City to City by MOEJ	9
6. JCM Feasibility Study under NEDO	9

Ongoing JCM Projects

Sectoral Scope.....	11
A. JCM Model Project	12
B. JCM REDD+ Model Project	21
C. JCM Demonstration Project.....	22
D. JCM Registered Project.....	24
E. JCM Credit Issuance	29

MOEJ : Ministry of Environment of Japan

METI : Ministry of Economy, Trade and Industry of Japan

NEDO : New Energy and Industrial Technology Development Organization

ADB : Asian Development Bank





What is the JCM?

The Joint Crediting Mechanism (JCM) encourages cooperation between Japanese and Indonesian institutions to promote implementation of low carbon development activities in Indonesia.

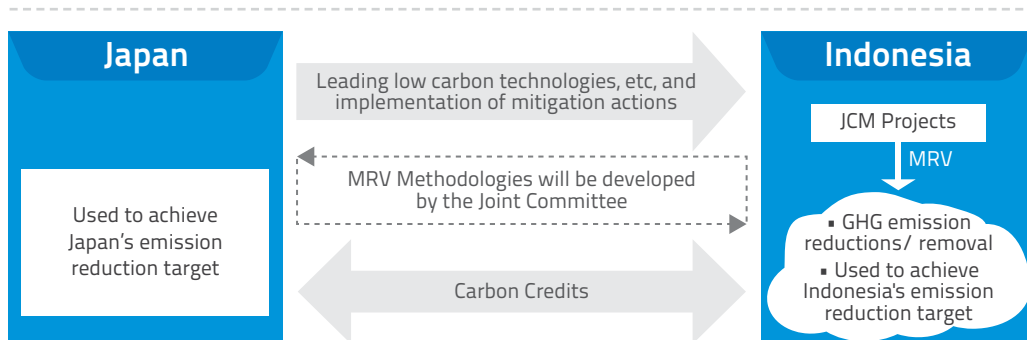
A History of the JCM in Indonesia

- 2010 : Initial discussions between National Council on Climate Change of Indonesia as JCM focal point and Japanese Government Delegation
- 2011 : Formal meeting on the JCM between National Council on Climate Change of Indonesia and related ministries and Japanese Government Delegation
- 2012 : Establishment of Coordination Team for Inter-State Carbon Trade Negotiation (Tim Koordinasi Perundingan Perdagangan Karbon Antarneegara (TKPPKA))
- 2013 : Signing on JCM Cooperation between the Governments of Indonesia and Japan, and establishment of JCM Joint Committee consisting of members from Indonesia and Japan
- 2014 : Establishment of Indonesia JCM Secretariat
- 2016 : First JCM credit issuance in Indonesia and in the world

B

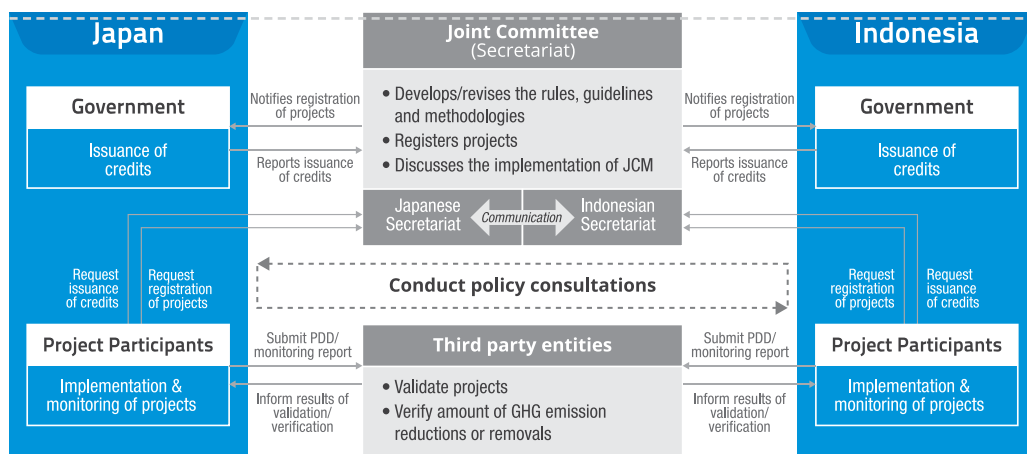
Basic Concept of the JCM Cooperation between Japan and Indonesia

Figure 1. The JCM scheme between Japan and Indonesia



- Facilitating 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 evaluating contributions from Japan to GHG emission reductions or removals in a quantitative manner, by applying measurement, reporting, and verification (MRV) methodologies, and using them to achieve Japan's emission reduction target;
- Contributing to the ultimate objective of the UNFCCC by facilitating global actions for GHG emission reductions or removals.

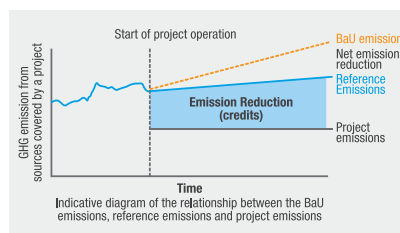
Figure 2. The JCM Cooperation Scheme



C Monitoring, Reporting, and Verification (MRV) Methodology

The reference emissions are calculated to be below or at least on the same level business-as-usual (BaU) emissions, by conservatively estimating/identifying plausible emission or by other methods determined in the methodologies to be approved by the Joint Committee.

Figure 3. Basic Concept for Crediting under the JCM

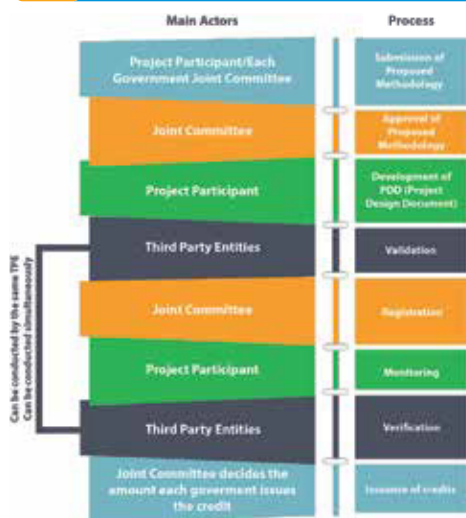


Approved JCM MRV methodologies (as of March 2017):

1. Power generation by waste heat recovery in cement industry
2. Energy saving by introduction of high efficiency centrifugal chiller
3. Installation of energy-efficient refrigerators using natural refrigerant at food industry cold storage and frozen food processing plant
4. Installation of inverter-type air-conditioning system for cooling for grocery store
5. Installation of led lighting for grocery store
6. GHG emission reductions through optimization of refinery plant operation in Indonesia
7. GHG emission reductions through optimization of boiler operation in Indonesia
8. Fridge-freezer showcase by using natural refrigerant for grocery store
9. Replacement of conventional burners with regenerative burners for aluminum holding furnaces
10. Introducing double-bundle modular electric heat pumps to a new building
11. Installation of energy saving air jet loom at textile factory
12. Reduction of Energy Consumption by Introducing an Energy-Efficient Old Corrugated Carton Processing System into a Cardboard Factory
13. Installation of Solar PV System
14. Installation of Tribrid Systems to mobile communication's Base Transceiver Stations

Methodology update and public comments are available on <http://jcm.ekon.go.id>

D Project Cycle of the JCM



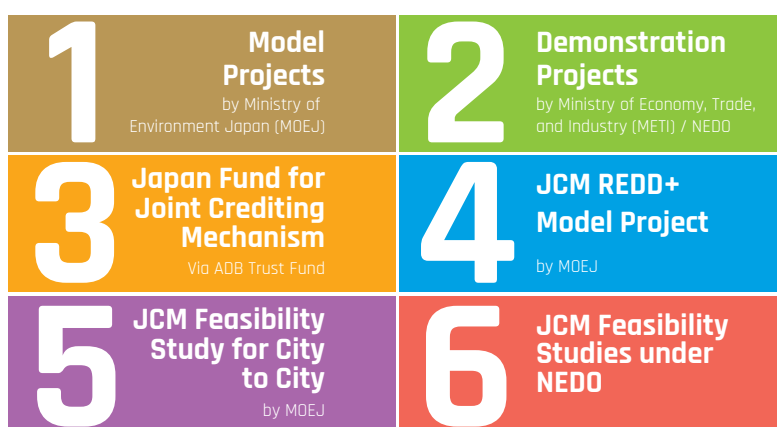
The image describes the steps to follow for project participants, third-party entities (TPEs), the Joint Committee, the secretariat, both Government sides, and other stakeholders, for approval of a methodology, registration of JCM project, issuance of credits and related actions.

Buah & Sayur



JCM Promotion Scheme

In order to support the JCM activities, Government of Japan has provided several type of financing scheme which can be utilize by the project participant to support the investment cost such as facilities, equipment, and vehicles. The budget amount for every financing scheme is different based on the annual allocation of the budget sources. Source of budget mainly come from Ministry of Environment Japan and Ministry of Economy, Trade, and Industry.



1 Financing Programme for JCM Model Projects by MOEJ

Scope of the financing: facilities, equipment, vehicle, etc. which reduce CO₂ from fossil fuel combustion as well as construction cost for installing those facilities, etc.

Figure 4. Financing Programme for JCM Model Projects



2 Promotion Scheme for JCM Demonstration Project by METI/NEDO

- JCM Demonstration Projects are funded by METI Japan and implemented by NEDO (New Energy and Industrial Technology Development Organization), which supports the project costs necessary to verify the amount of GHG emission reduction in line with JCM rules and guidelines.
- Coverage of project cost: Cost of the JCM Demonstration Projects necessary for MRV: e.g. Cost of design, machines, materials, labor, travel, etc.

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

The Scheme :

The JFJCM seeks to increase the sustainability of ADB-financed and administered projects through the use of advanced low carbon technologies. The use of grants under the JFJCM will demonstrate the effectiveness of the JCM and provide a source of additional funding to eligible ADB developing member countries (DMCs).

Purpose:

The fund aims to provide financial incentives for the adoption of advanced low carbon technologies in ADB-financed and administered sovereign and non-sovereign projects. The JFJCM will provide grants and technical assistance to ADB projects utilizing the Joint Crediting Mechanism (JCM).

Below is the type of financing scheme under JFJCM.

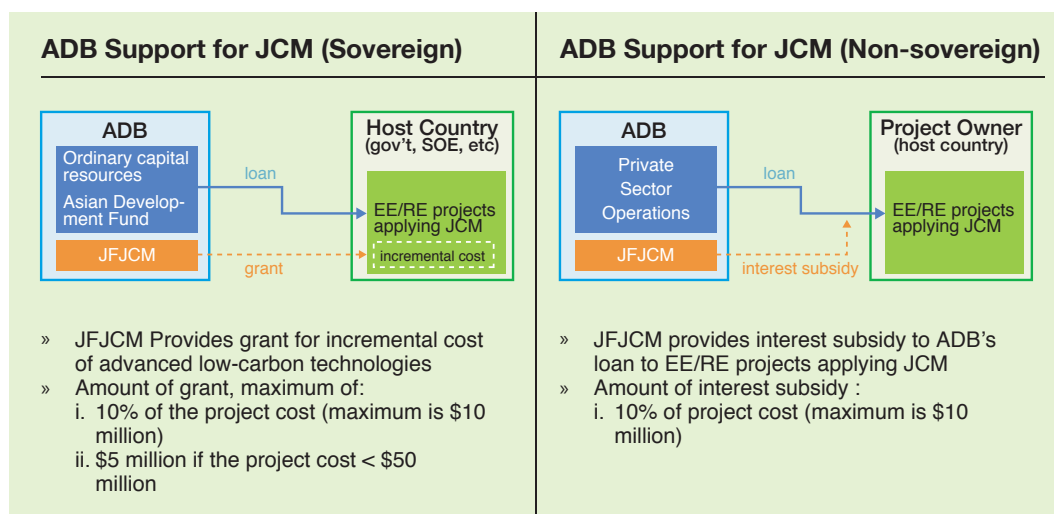


Figure 5.
Japan Fund for Joint Crediting Mechanism

4 JCM REDD+ Model Projects by MOEJ

Background

- Degradation of forests in developing countries

Expected outcome

- Participatory monitoring of illegal logging, disaster prevention and forest restoration.
- Provision of alternative livelihood.

Project Outline



- At least half or ratio of financial support to project cost of JCM credits issued are expected to be delivered to the government of Japan except the amount which is allocated to the partner country based on its legislation
- These projects may be carried out with the cooperation of other organization such as like JICA.

5 JCM Feasibility Study for City to City by MOEJ

This scheme encourages GHG emissions reduction activities on the city and regional scale and realizes a low carbon society by utilizing inter-city corporation between Japanese and Indonesian local government. Japanese local governments, research institutes, private companies and universities are co-operate and adjust the advanced low carbon technologies and systems to fit the local conditions to establish sustainable operation and maintenance systems in Indonesia.

6 JCM Feasibility Study under NEDO

This study aims to promote potential JCM projects, survey their feasibility, check the practicality of the MRV methodology, and elaborating investment plan

Ongoing JCM Projects in Indonesia

Model/Demonstration Projects are promoted to follow the steps described in the JCM project cycle (see page 5). Official MRV (measurement, reporting, and verification) of emissions reduction starts after a project is registered.



Sectoral Scope



energy industries
(renewable/non-renewable sources)



energy distribution



energy demand



manufacture industries



metal production



solvent use



transport



REDD+



agriculture



waste handling
and disposal



construction



chemical industries



fugitive emissions
from production
and consumption of
halocarbons and sulfur



fugitive emissions
from fuel



mining/mineral
production

JCM
Model Project

JCM REDD+
Model Project

JCM
Demonstration
Project

JCM
Registered
Project

JCM's Credit
Issuance

A JCM Model Project

Model Project (JFY 2014)

Power Generation by Waste-heat Recovery in Cement Industry



Energy Industries
(renewable/non-
renewable sources)

Estimated Emission
Reduction

**122,000 tCO₂
/year**



JFE Engineering Corporation



PT. Semen Indonesia Tbk

The proposed project is planned to introduce a waste heat recovery (WHR) boiler steam turbine generator system at an existing cement production plant (PT. Semen Indonesia) located in Tuban, East Java, Indonesia. The WHR system utilizes unused waste heat currently emitted from the cement factory. WHR boilers generate steam using the waste heat exhausted from the cement plant, and the steam is fed to the steam turbine generator to generate electricity.



Model Project (JFY 2014)

500 KW Installation of Solar Power System and Storage Battery to Commercial Facilities



Energy Industries
(renewable/non-
renewable sources)

Estimated Emission
Reduction

**549 tCO₂
/year**

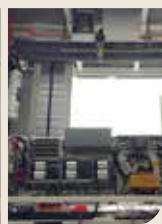


ITOCHU Corporation



AEON MALL INDONESIA

The project is an implementation of 500 kW solar rooftop on AEON mall. It is expected that the implementation of the project will reduce the utilization on a fossil fuel electricity generation and increase the proportion of renewable energy in the Indonesia building sector.



Model Project (JFY 2014)

Energy Saving through Introduction of Regenerative Burners to the Aluminum Holding Furnace of the Automotive Components Manufacturer



Energy Demand

Estimated Emission Reduction

856 tCO₂/year



Toyotsu Machinery Corporation,
Hokuriku Techno Co., Ltd.



PT. Toyota Tsusho Indonesia,
PT. Yamaha Motor Parts Manufacturing
Indonesia (YPMI), PT. Matahari Wasiso
Tama, PT. Hokuriku Techno Indonesia

Replacing a conventional burner with a high-efficiency regenerative burner for an aluminum holding furnace improves energy saving and reduces GHG emissions. YPMI has an aluminum wheel die casting line with 11 crucible type holding furnaces. Local furnace manufacturer PT. Matahari replaces and modifies the furnaces supervised by the branch of Japanese furnace manufacturer Hokuriku Techno. PT. Matahari acquires sophisticated furnace design and manufacturing knowhow of regenerative burner furnaces and their tuning/maintenance techniques.



Model Project (JFY 2014)

Reducing GHG Emission at Textile Factories by Upgrading to Air-saving Loom



Energy Demand

Estimated Emission Reduction

566 tCO₂/year



Toray Industries, Inc.
Toray International, Inc.



PT. Indonesia Synthetic-Textile Mills
(ISTEM), PT. Easterntex,
PT. Century Textile Industry (CENTEX),
PT Toyota Tsusho Indonesia

Indonesia is the highest exporter of textile products in South East Asia, therefore the implementation of energy efficiency in this sector will be crucial.

This "JAT810" has an air-saving technology to reduce air consumption for weft insertion 20% more than the conventional model. The effect is not only reducing CO₂ emission by saving the power consumption of air-compressors but also reducing the running cost.



Model Project (JFY 2014)

Introduction of High Efficient Old Corrugated Cartons Process at Paper Factory



Manufacturing Industries

Estimated Emission Reduction

14,884 tCO₂ /year



Kanematsu Corporation



PT Fajar Surya Wisesa Tbk.

This project aims to achieve electricity usage reduction per ton produced (by about 10 %) by introducing a Japanese high-efficient system for the old corrugated carton (OCC) process for PT. Fajar Surya Wisesa, thereby contributing to CO₂ reduction.



This OCC process is a process to prepare clean raw materials containing dissolved paper fibers by mixing used corrugated board into water for defiberization and removing foreign substances.

Since a large amount of material (water) is used in this process, the electricity is significantly consumed to the power motors.

Model Project (JFY 2015)

Energy Saving for Industrial Park with Smart LED Street Lighting System



Energy Demand

Estimated Emission Reduction

1,016 tCO₂ /year

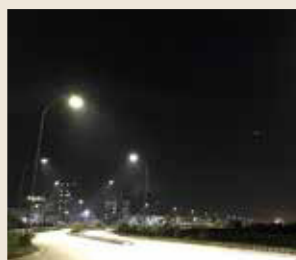


NTT FACILITIES, INC.



PT. Maligi Permata Industrial Estate, PT. Harapan Anang Bakri & Sons, PT Karawang Tatabina Industrial Estate

The replacement of existing high pressure sodium lighting with the highly efficient street lighting system for Industrial Parks is estimated to reduce the electricity usage of 1,106 MWh annually. This project is a collaboration between NTT FACILITIES, INC with PT. Maligi Permata Industrial Estate, PT. Harapan Anang Bakri & Sons and PT. Karawang Tatabina Industrial Estate.



Model Project (JFY 2015)

Introduction of High-efficiency Once-through Boiler System in Film Factory



Energy Demand

Estimated Emission Reduction

428 tCO₂/year



Mitsubishi Plastics Inc.



PT. MC Pet Film Indonesia

The objective of the project is to save energy by installing once through boiler in PT MC PET Film Indonesia, Merak factory, to replace the existing water tube boiler. The implementation of this project is estimated to increase the efficiency from 87% conventional smoke tube boiler to 96% by once-through boiler thus reducing GHG emission by 428.5 tCO₂ per year. This project is a cooperation between Mitsubishi Plastic, Inc and PT. MC PET Film Indonesia.



Model Project (JFY 2015)

Installation of Gas Co-generation System for Automobile Manufacturing Plant



Energy Demand

Estimated Emission Reduction

20,310 tCO₂/year



Toyota Tsusho Corporation



Toyota Motor Manufacturing Indonesia

The purpose of this project is to reduce energy consumption and CO₂ emission by installing a gas co-generation system. This system adopts a high efficiency gas-engine and heat recovery system to generate steam and hot water.

This project contributes to the reduction of energy consumption at coal fired power generation prevailed in Indonesia, and to the reduction of GHG and air pollutant emissions.



Model Project (JFY 2015)

Introduction of High Efficiency Once-through Boiler and RO Pure Water System in Golf Ball Factory



Energy Demand

Estimated Emission Reduction

329 tCO₂/year

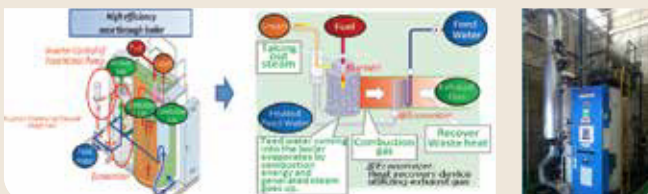


Sumitomo Rubber Industries, Ltd



PT. Sumi Rubber Indonesia

A high efficiency once through boiler is installed at a Golf Ball factory in Cikampek. The boiler reduces fuel consumption by incorporating gas single fuel type. Furthermore, electricity consumption is also reduced by inverter function of feedwater pump and forced draft fan.



Model Project (JFY 2015)

1.6MW Solar PV Power Plant Project in Jakabaring Sport City



Energy Industries (renewable/non-renewable sources)

Estimated Emission Reduction

1,303 tCO₂/year



SHARP Corporation



Perusahaan Daerah Pertambangan dan Energi (PDPDE) Sumatera Selatan)

This project aims to reduce CO₂ emissions by introducing a 1.6MW solar power plant in the Jakabaring Sport City complex of South Sumatra Province. The solar power plant enables to supply electricity to the sport city, and surplus power is provided to the grid as renewable energy. The power plant uses polycrystalline PV modules, 315W, module efficiency 15.5%. About 5,300 of these modules and peripheral systems will be installed on an expansive area of about 2.5 ha.



Model Project (JFY 2016)

Introduction of high-efficiency looms in weaving mill



Energy Demand

Estimated Emission Reduction

823 tCO₂ /year



Nisshinbo Textile Inc



PT. Nikawa Textile Industries

The proposed project aims to reduce electricity consumption and GHG emission by upgrading to air-saving looms at textile factory in Indonesia. This Air Jet Loom JAT810 made by Toyota Industries Corporation has original air saving technology to reduce air consumption for weft insertion more 20% than the conventional model. In addition, we will introduce E-shed which is the ultimate shedding device. Fabrics that had been highly challenging to weave can now be woven at high speed.



Model Project (JFY 2016)

Energy Saving for Industrial Wastewater Treatment System for Rubber Industry



Energy Demand

Estimated Emission Reduction

387 tCO₂ /year



EMATEC, Suzuki Sangyo Co. Ltd.,
Mitsubishi UFJ Research and Consulting Co., Ltd,



PT. Aneka Bumi Pratama

This project aims to reduce electricity consumption in blower at industrial wastewater treatment facility in PT. ABP (Aneka Bumi Pratama), crumb rubber producer in Palembang city, by replacing existing diffuser to aerator.

Both Diffuser and aerator is an aeration device for wastewater treatment but principle is different. Aerator can reduce BOD more efficiently than diffuser and needs less air pressure from blower. Less air pressure contributes to reduce electricity consumption as well as CO₂ emissions from electricity.



Model Project (JFY 2016)

10 MW Mini Hydro Power Plant Project in North Sumatera



Energy Industries
(renewable/non-renewable sources)

Estimated Emission
Reduction

**42,700 tCO₂
/year**

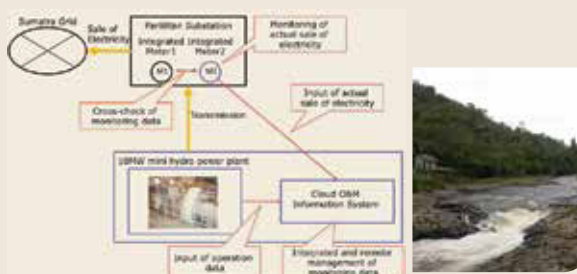


Toyo Energy Farm Co., Ltd



PT. Citra Multi Energi

A mini hydro power plant is to be constructed in Humbang Hasunduran District of North Sumatra with a capacity of 10MW (5MW * 2). The electricity generated by the plant is to be supplied to a power company, resulting in GHG emission reductions by replacing grid electricity. As North Sumatra has been suffering from energy shortages, this project is also expected to contribute to improving energy supply in the region.



Model Project (JFY 2016)

Introduction of LED Lighting to Sales Stores



Energy Demand

Estimated Emission
Reduction

**2,143 tCO₂
/year**



Fast Retailing Co., Ltd.



PT. Fast Retailing Indonesia

Lighting equipment is major energy consumption sources at sales store. This project contributes to the reduction of GHG emission at sales stores in Indonesia by installation of high efficiency LED lighting. Those equipment are installed stores centering around Jakarta.



Model Project (JFY 2016)

Roof Top Self Consumption Solar Power Generation Project for Food Ingredients and Aroma Ingredients Factory, Indonesia



Energy Industries
(renewable/non-renewable sources)

Estimated Emission
Reduction

**469 tCO₂
/year**



Next Energy Resources Co.



PT. Indesso Aroma

The Project aims to contribute to Indonesia's sustainable development through use of renewable energy and GHG emission reduction by introduction of roof-top 577kW solar photovoltaic facility to PT. Indesso Aroma's new facility which located in Bogor. The electricity produced by the facility will be fully utilized for its own consumption within the project site. Equipment to be introduced in this project are Solar Module & Power Conditioner.



Model Project (JFY2017)

Introduction of Gas Cogeneration System by absorption type refrigerating system and PV System in Large Shopping Mall in Indonesia



Energy Demand

Estimated Emission
Reduction

**7,339 tCO₂
/year**



AEON Mall Co.,Ltd.






PT. AMSL DELTA MAS

PT. AMSL DELTA MAS will open "AEON MALL DELTA MAS" in late 2019 and planned to utilize gas cogeneration system with capacity around 3.8 MW by absorption type refrigerating system in the mall. The 670RT absorption type refrigerating system use the waste from gas engine generator in order to generate cool water for air conditioning in the mall.

Model Project (JFY 2017)




Co-generation System and Absorption Chiller to Motor Parts Factory

 <p>Energy Demand</p>	<p>Estimated Emission Reduction</p> <hr/> <p>5,049 tCO₂/year</p>	<div data-bbox="682 401 753 449"></div> <p>DENSO COOPERATION</p> <hr/> <div data-bbox="682 515 753 563"></div> <p>PT DENSO INDONESIA (DNIA)</p>
--	--	---

The project will install the gas engine type of cogeneration system which further will reduce energy consumption by 35% to the previous operation system. This project is installed in PT DENSO INDONESIA factory in Karawang.

Model Project (JFY 2017)

Introduction of Absorption Chiller to Chemical Factory

 <p>Energy Demand</p>	<p>Estimated Emission Reduction</p> <hr/> <p>1,084 tCO₂/year</p>	<div data-bbox="682 986 753 1033"></div> <p>Tokyo Century Cooperation</p> <hr/> <div data-bbox="682 1100 753 1148"></div> <p>PT Timuraya Tunggal</p>
--	--	---

The project installed is able to reduce energy consumption which eventually will reduce the greenhouse-gases emission by replacing turbo chiller to steam driven absorption chiller in PT. Timuraya Tunggal factory. The utilization of the project is expected to be able to reduce 82.4% of energy consumption in comparison to the previous chiller.

B

JCM REDD+ Model Project

REDD+ Model Project (JFY 2015 & 2016)

REDD+ Project in Boalemo District



REDD+

Estimated Emission Reductions

86,520 tCO₂ /year



Kanematsu Corporation



Gobel group DKM (PT. Dharma Karyatama Mulia, Boalemo District)

The REDD+ model project in Boalemo District is the first REDD+ project under JCM scheme. The collaboration project between Kanematsu Corporation and PT. Dharma Karyatama Mulia aims to reduce the slash-and-burn deforestation by improving agricultural production practices especially cacao in Boalemo District, Gorontalo Provinces.



Demonstration Project (JFY 2013)

Energy Saving by Optimum Operation at Oil Refinery



Energy Demand

Estimated Emission
Reduction

**3,400 tCO₂
/year**



Yokogawa Electric Corporation



PT. Pertamina (Refinery Unit V)

At oil refinery (a large CO₂ emitter), effective & sustainable CO₂ emission reduction technologies will be verified, then standardized for JCM roll out.

Introduce Advanced Process Control (APC) system proved at Japan and global oil majors, customize to meet local environment, then verify effective and sustainable CO₂ emission reduction by fossil fuel reduction.



Demonstration Project (JFY 2013)

Utility Facility Operation Optimization Technology



Energy Demand

Estimated Emission
Reduction

**58,000 tCO₂
/year**



Azbil Corporation



Azbil Berca Indonesia,
PT. Pertamina

This technology can be applied to the existing utility system of factories of various industries and is high return-on-investment (ROI) technology, since it works on simple computer systems, without high-performance hardware or other expensive equipment. It has a great amount CO₂ reduction potential for various industries in Indonesia, such as refineries, chemical plants, district heating and cooling systems, and so on.



Utility Facility Operation Optimization Technology is a "RENKEI" control, which is Japan's leading-edge technology. By using optimization technology, the system determines the optimum selection and optimum load allocation for utility equipment such as boilers, steam turbines, and chillers used in utility facilities, in order to minimize CO₂ emissions. Without any change of utility facility hardware this technology will realize a great amount of CO₂ reduction facilities, in order to minimize CO₂ emissions.

Demonstration Project (JFY 2015)

The low carbonization of mobile communication’s
BTS (Base Transceiver Station) by the Introduction
of “TRIBRID system” in Indonesia



Energy Demand

Estimated Emission
Reduction

163 tCO₂
/year



KDDI Corporation,
Ernst & Young Sustainability Co., Ltd.,



PT. Packet Systems Indonesia
PT. Huawei Services

KDDI’s unique energy management system for BTS “TRIBRID system” will be installed at 22 locations in Off-grid and Poor-grid area. KDDI’s TRIBRID system enables to replace electricity from diesel generator and grid with solar power by controlling the balance of electricity from diesel, grid and solar, and optimize the usage of solar power. Therefore, it enables BTS to achieve the energy saving and GHG emission reductions.

D JCM Registered Project

JCM Registered Project is a Project which has been approved by the Joint Committee to be acknowledged under the JCM scheme after going through validation process.

Registered Project (JFY 2014)

Energy Saving for Air-Conditioning and Process Cooling by Introducing High-efficiency Centrifugal Chiller



Energy Demand

Estimated Emission
Reductions

**114 tCO₂
/year**



Ebara Refrigeration Equipment &
Systems Co. Ltd.
Nippon Koei Co. Ltd.



PT. Primatexco Indonesia

Reference No.
ID001



Batang, Central Java Province

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 (230 USRt and 250 USRt) 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)

This Project is the first registered project under JCM scheme in the World.



Registered Project (JFY 2014)

Energy Saving for Air-Conditioning at Textile Factory by Introducing High-efficiency Centrifugal Chiller in Karawang West Java



Energy Demand

Estimated Emission Reduction

176 tCO₂ /year



Ebara Refrigeration Equipment & System Co., Ltd.



PT. Nikawa Textile Industry,
PT. Ebara Indonesia

Reference No.
ID004



Karawang, West Java Province

The textile industry is a major industry in Indonesia. To produce high quality products, air-conditioning is of key importance. For reducing GHG for the textile industry, a high-efficiency chiller is one of the best options to choose. The existing 500USRT chiller is replaced by a high-efficiency centrifugal chiller, which consists of a two-stage high efficiency compressor, economizer and sub-cooler system. By applying a purge unit with Activated Carbon, nearly 100% of HFC-245fa refrigerant with 0 ODP is recovered for excellence in GHG reductions.



Registered Project (JFY 2013)

Energy Saving for Air-Conditioning at Textile Factory by Introducing High-efficiency Centrifugal Chiller in Batang, Central Java (Phase 2)



Energy Demand

Estimated Emission Reduction

145 tCO₂ /year



Ebara Refrigeration Equipment & Systems,
Nippon Koei Co., Ltd.



PT. Primatexco,
PT. Ebara Indonesia

Reference No.
ID005



Batang, Central Java Province

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 (230 USRt and 250 USRt) with high-efficiency chillers (500USRt), in order to save energy and to reduce CO₂ emissions. High-efficiency chillers adopt a high-performance economizer cycle and a super-cooling refrigerant cycle in order to save energy. In addition, the chillers use low-pressure refrigerant (HFC-245fa) with zero ODP (Ozone Depletion Potential)



Registered Project (JFY 2013)

Installation of Inverter-type Air Conditioning System, LED Lighting and Separate Type Fridge Freezer Showcase to Grocery Stores in Republic of Indonesia



Energy Demand

Estimated Emission Reduction

28 tCO₂ /store/year



Lawson, INC.



PT. Midi Utama Indonesia Tbk

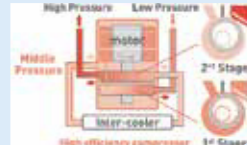
Reference No.
ID006



Jakarta, Bekasi, Tangerang, Depok

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.

This project involves 12 convenience store of Alfa Midi located in Jakarta, Tangerang, and Depok.



Registered Project (JFY 2013)

Introducing double-bundle modular electric heat pumps at AXIA SOUTH CIKARANG Tower 2



Energy Demand

Estimated Emission Reduction

166 tCO₂ /year



Toyota Tsusho Corporation



PT. TTL Residences
PT Toyota Tsusho Indonesia

In order to reduce natural gas consumption, a double bundle-type heat pump, generating both heating and cooling energy, is installed into the thermal supply system in serviced apartments. The reduction of natural gas consumption and coal-fired electricity consumption through the utilization of the heat pump contributes to GHG emission reductions. The heat pump is capable of high temperature heating (more than 60 degrees C), and its efficiency combining heating and cooling is expected to be 450 – 500 %



Registered Project (JFY 2015)

Energy Saving for Air-Conditioning at Shopping Mall with High Efficiency Centrifugal Chiller



Energy Demand

Estimated Emission Reduction

996 tCO₂ /year



NTT FACILITIES, INC.



PT PAKUWON JATI, Tbk.

NTT FACILITIES, INC and PT. Pakuwon Jati Tbk have agreed to collaborate in energy saving project by installing high efficiency centrifugal chiller at Tunjungan Plaza in Surabaya. This project is expected to save 1,136 MWh of electricity and 996 tCO₂ of carbon emission annually.



Credit Issuance (JFY 2014)

Project of Introducing High Efficiency Refrigerator to a Food Industry Cold Storage in Indonesia



Energy Demand

Estimated Emission Reductions (average)

120 tCO₂/year



Mayekawa Manufacturing Co.,Ltd.



PT. Adib Global Food Supplies,
PT. Mayekawa Indonesia

Reference No.
ID002

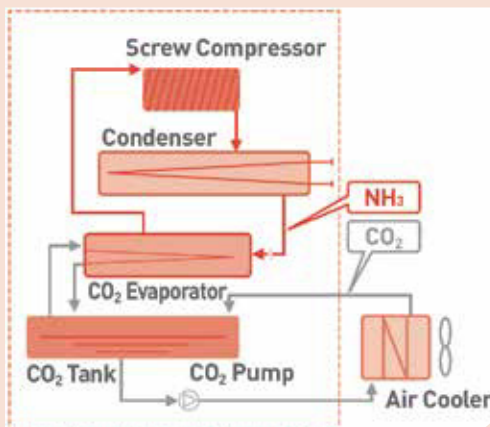


Kel./Kec. Bantargebang, Bekasi, West Java Province

This project is located at PT. Adib Global Food Supplies new site factory at Bekasi, West Java Province.

The advanced energy efficient cooling system using natural refrigerant (NH₃ and CO₂) is introduced into the food industry and logistics industry in Indonesia, where energy consumption is very high, demonstrating its high energy saving impact as well as a large amount of GHG emission reductions.

A screw compressor and an IPM (interior permanent magnet synchronous) motor are adopted and operated integrally, to achieve highly efficient operation of the cooling facility. This technology is utilized by PT. Adib not only to reduce the emission reduction but also to improves the efficiency of the refrigerator which used as cold storage for the food industry.



Credit Issuance (JFY 2014)

Project of Introducing High Efficiency Refrigerator to a Frozen Food Processing Plant in Indonesia



Energy Demand

Estimated Emission Reductions (average)

21 tCO₂/year



Mayekawa Manufacturing Co.,Ltd.



PT. Adib Global Food Supplies,
PT. Mayekawa Indonesia

Reference No.
ID003

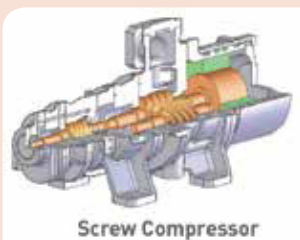


Kec. Cilebar, Kab. Karawang, West Java Province

This project is located at PT. Adib Global Food Supplies existing frozen food factory at Karawang, West Java Province.

The advanced energy efficient cooling system using natural refrigerant (NH₃ and CO₂) is introduced into the food industry and logistics industry in Indonesia, where energy consumption is very high, demonstrating its high energy saving impact as well as a large amount of GHG emission reductions.

A screw compressor and an IPM (interior permanent magnet synchronous) motor are adopted and operated integrally, to achieve highly efficient operation of the cooling facility. This technology is utilized by PT. Adib not only to reduce the emission reduction but also to improve the efficiency of frozen food processing.



Screw Compressor



Condensing Unit



Issuance of Credits

Below is the information about issuance of credits which have been issued by Joint Committee Members of Indonesia and Japan

Project No	Project Title	Monitoring period	Indonesia Participant	Japanese Participant	Indonesian Government	Japanese Government	Total Credit Issued
ID002	Project of Introducing High Efficiency Refrigerator to a Food Industry Cold Storage in Indonesia	2015	3	3	3	20	29
ID003	Project of Introducing High Efficiency Refrigerator to a Frozen Food Processing Plant in Indonesia	2015	1	1	2	7	11

Notes : credit is issued in the respective country's registry system

Notes



Coordinating Ministry for Economic Affairs
Republic of Indonesia

in cooperation with:



For Further Information

Indonesia JCM Secretariat

Coordinating Ministry for Economic Affairs Building 4th Floor
Jl. Medan Merdeka Barat no. 7, Jakarta - 10110 Indonesia
Phone : +62 (21) 3483-2653

<http://jcm.ekon.go.id>

info@jcmindonesia.com/idjcmsecretariat@gmail.com

