

JCM THE JOINT CREDITING MECHANISM

Introduction of the Joint Crediting Mechanism (JCM) & Financing Programme for JCM Model Projects



About the Joint Crediting Mechanism (JCM)

Japan, aiming to facilitate global GHG emission reduction and removal, implements the Joint Crediting Mechanism (JCM) as a scheme for decarbonizing technology diffusion and implementation measures to respond to challenges in partner countries in a flexible and swift manner.

The use of carbon market mechanisms, including the JCM, is articulated under Article 6 of the Paris Agreement. The market mechanism under Article 6, including the JCM, is not only for GHG emission reduction, but also for the sustainable development of the partner countries.

Japan has established partnerships with 24 countries (as of October 25th, 2022) and continues to communicate with other developing countries.

Basic Concept of the JCM

- Facilitating diffusion of advanced decarbonizing technologies, products, systems, services and infrastructure as well as implementing mitigation actions, and contributing to the sustainable development of developing countries
- Appropriately evaluating contributions from Japan to GHG emission reductions and removals in a quantitative manner and using them to achieve Japan and partner country's NDC emission reduction targets
- Contributing to the ultimate objective of the UNFCCC by facilitating global actions for GHG emission reductions and removals

Position of the JCM in the Plan for Global Warming Countermeasures (Cabinet Decision, October 2021)

Japan will establish and implement the Joint Crediting Mechanism (JCM) in order to quantitatively evaluate contributions of Japan to greenhouse gas emission reductions and removals which are achieved through the diffusion of, among others, leading decarbonizing technologies, products, systems, services, and infrastructures as well as through the implementation of measures in developing countries and others, and in order to use such contributions to achieve Japan's NDC. By doing so, through public-private collaborations, Japan aims to secure accumulated emission reductions and removals at the level of approximately 100 million t-CO2 by fiscal year 2030.



JCM Global Partnership

JCM Global Partnership aims to strengthen international partnerships towards decarbonization by facilitating mutual communication among various entities such as JCM partner countries, international organizations, local governments, private companies and financial institutions for decarbonizing project development through the JCM, the Article 6 of the Paris Agreement (market mechanisms), and achievement of SDGs.



http://carbon-markets.env.go.jp/eng/jcmgp/index.html JCM × Decarbonizing Project Promoting utilization of financing schemes and business matchings to formulate JCM projects through collaboration among various stakeholders JCM × Article6 (Market mechanisms) Sharing how the JCM is being implemented as a program under Article 6 of the Paris Agreement with actual cases

JCM×SDGs

Sharing relevant information of JCM's contribution to SDGs

Financing Programme for JCM Model Projects



JCM Model Projects Flow



%PIN: The Project Idea Note is a proposal document shared with a partner country prior to the selection as a JCM Model Project.

** Submission of application should be done within 30 days after the selection of model projects so that the notice of contract of financing can be established within 60 days after the selection.

MRV Process for the JCM (MRV : Measurement, Reporting and Verification)

JCM Project Registration and Credit Issuance Main Actors at each Process Process Submission of **Project Participant / Each** Methodology Development Proposed Government Methodology **Joint Committee Approval of** Proposed **Joint Committee** Methodology Development **Project Participant** of PDD* Registration Project Validation **Third Party Entities Joint Committee** Registration **Project Participant** Monitoring Issuance Credit **Third Party Entities** Verification Joint Committee decides Issuance the amount **Each Government issues** of JCM credits the credit **%PDD:** Project Design Document

MRV Process for the JCM Measurement, Reporting and Verification of amount of GHG emission reductions for JCM Project



Representative Participant of JCM Projects shall conduct measurement, reporting and verification (MRV) of the GHG emission reductions realized after installation and commissioning of the facilities/equipment for the issuance of JCM credits.

Examples of JCM Model Projects by Technology

Boiler (Viet Nam)

Suntory Spirits Ltd.

Acecook Co., Ltd.

Energy Efficiency



Chiller (Thailand) The Kansai Electric Power Company, Incorporated

Energy Efficiency



Raw Water Intake Pumps(Viet Nam) Yokohama Water Co., Ltd.

Renewable Energy



Binary Geothermal Power Generation (Philippines) Mitsubishi Heavy Industries, Ltd.

Renewable Energy



Biogas Power & Fuel Conversion (Philippines) Itochu Corporation



Energy Efficient Distillation System (Mexico)

Mini Hydro Power (Indonesia) Toyo Energy Farm Co., Ltd.

Waste Handling and Disposal



Power Generation with Methane Gas Recovery System (Mexico) NTT Data Institute of Management Consulting, Inc.



Amorphous Transformers (Lao PDR) Yuko Keiso Co., Ltd.

Effective Use of Energy



Waste Heat Recovery (Myanmar) Global Engineering Co., Ltd.



LPG Boilers (Mongolia) Saisan Co.,Ltd.



Gas Co-generation System & Chiller (Thailand) Kansai Electric Power Co., Inc.



Solar Power (Palau) Sharp Energy Solutions Corporation

Transportation



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



Farmland Co., Ltd.



Waste to Energy Plant(Myanmar)

JFE Engineering Corporation



Introduction of Gas Co-generation System and **Absorption Chiller to Fiber Factory**

Country Representative

Partner

Thailand

The Kansai Electric Power Co., Inc. Kansai Energy Solutions (Thailand) Co., Ltd.

This project aims to reduce CO2 emissions by introducing gas co-generation system (5 MW class x 2 sets) and absorption chiller (800 USRT class) to fiber factory in Bangpa-in, Ayutthaya. These gas co-generation system and absorption chiller contribute to energy saving and cost reduction and can improve reliability for power supply.





3MW Solar Power Project in Chillan, **Nuble Region**

Country	Chil
Representative	FAR
Partner	Land

e

MLAND Co., Ltd.

d and Sea SpA, Farmdo Energy Chile SpA

This project aims to reduce greenhouse gas emissions by constructing a photovoltaic power generation facility with generating capacity of 3 MW and supplying electricity to the urban area of Chillan, Nuble Region. This project contributes to Chile's policy to achieve a renewable energy ratio target of 70% by 2050.





Introduction of High Efficiency Boiler System to Food Factory

Country Representative

Vietnam

ative Acec

Partner

Acecook Co., Ltd.

Acecook Vietnam Joint Stock Company Sojitz Osaka Gas Eenergy Co., Ltd.

This project replaces existing coal boilers at the Binh Duong plant and Hung Yen plant operated by Acecook Co., Ltd. with high-efficiency once-through boilers that uses CNG and LPG instead of coal for fuel. The boiler system flexibly responds to fuel market trends and reduces greenhouse gas emissions.





Introduction of Amorphous High Efficiency Transformers in Power Grid

Countries
Representative
Partner

Vietnam, Lao PDR

Yuko Keiso Co., Ltd.

Partner

①EVN SPC, EVN HANOI, KHANH HOA PC, DON NAI PC
②Electricite Du Laos

The purpose of this project is to reduce CO2 emissions and non-load losses (standby electricity) through the introduction of amorphous high efficiency transformers instead of transformers with silicon steel core in power grid. 1,307 transformers in total were introduced to Electricite Du Laos. Before Lao PDA, this technology had been widely introduced in Vietnam and further expansion to other JCM partner countries can be expected.





29MW Binary Power Generation Project at Palayan Geothermal Power Plant

Country Representative Partner

Philippines

Mitsubishi Heavy Industries, Ltd. Bac Man Geothermal Inc.

This project introduces a 29 MW binary geothermal power plant with the Organic Rankine Cycle (ORC) system to the existing 120MW flash type geothermal power plant in southern part of the Luzon island. This plant utilizes exhaust hot water of low enthalpy from the existing power plant without producing hazardous gasses.





Introduction of Biomass Boiler to Cooking Oil Factory

Country	Thailand
Representative	Tepia Co
Partner	Thanako

Tepia Corporation Japan Co., Ltd. Thanakorn Vegetable Oil Products Co., Ltd.

A biomass boiler with the steam production capacity of 35 tons per hour is installed in a cooking oil factory in Samut Prakan Province. The steam is used in the oil production process. Palm Kernel Shell (PKS) is used as its biomass fuel, and PKS is produced from multiple suppliers so as to secure the stability of steam production.



Case Examples of JCM Model Project Renewable Energy



10MW Mini Hydro Power Plant Project in North Sumatra

Country Representative Partner

Indonesia

Toyo Energy Farm Co., Ltd. PT. Citra Multi Energi

A mini hydro power plant is constructed in Humbang Hasunduran District of North Sumatra with a capacity of 10MW (5MWx2). 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 experiencing energy shortages, this project is also expected to contribute to improving energy supply in the region.



Energy Efficiency **Case Examples of** JCM Model Project \bigcirc Ŏ The Sector

Introduction of Low-carbon Facilities **Utilizing Lease Scheme**

Country Representative

Indonesia **Tokyo Century Corporation**

Partner

PT. Dynaplast, etc.

By introducing highly efficient injection molding machines and refrigerators with a leasing scheme, power consumption and CO2 emissions will be reduced. The leasing scheme offers an alternative long-term financing and is expected to expand advanced low-carbon or decarbonizing technologies.



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Outline of Guidelines for Submitting JCM Model Project Proposal in FY2022 (1)

Purpose

To financially support the implementation of projects which reduce greenhouse gas (GHG) emissions by utilizing leading decarbonizing technologies in developing countries, and in return, to acquire JCM credits to achieve Japan's GHG emission reduction target.

Eligible Projects

Projects that reduce energy-related CO2 emissions with leading decarbonizing technologies in developing countries, with which Japan has signed or has been consulting to sign a bilateral document on JCM, and that are expected to contribute to achieving Japan's NDC through the JCM

Requirements for Representative Participant

A representative participant of the JCM model project shall be a Japanese entity and shall appropriately manage and implement the project as a representative entity of an international consortium which includes JCM partner-country entities. A representative participant also shall conduct measurement, reporting and verification (MRV) of GHG emission reductions.

Implementation Period of Model Projects

Participants of the model project shall start installation after the contract of finance is concluded and shall finish installation and payments of the eligible facilities and equipment within 3 years.

Budget

About JPY 17.1 billion (approx. USD 158 million) from FY 2022 for 3 years

Financial Support per Project

Equal to or less than JPY 2 billion in principle

Maximum Percentage of Financial Support

Shall be determined according to the number of previously selected project(s) using a similar technology in each partner country.

Number of previously selected project(s) using a similar technology in each partner country	None (0)	Up to 3 (1-3)	More than 3 (4 and more)
Percentage of financial support	Up to 50%	Up to 40%	Up to 30%

Costs Covered by Financial Support

This programme covers the following costs that directly contribute to energy-related CO2 emission reductions. The typical costs not covered by this programme are also listed below.

Covered

- Facilities/equipment (including monitoring equipment)
- Main construction work
- Ancillary work
- Machinery and appliances
- Surveying and testing
 Administrative work
- Other necessary costs approved by GEC

NOT covered

- Removal of existing facilities / equipment
- (including miscellaneous expenses related to removal costs)
- Equipment and consumable supplies / materials for maintenance of the facilities / equipment installed by the model project, emergency facilities / equipment, cafety equipment (curch as fire extinguisher scriptler DEE atc.)
- safety equipment (such as fire extinguisher, sprinkler, PPE, etc.) and security equipment.
 Civil engineering work and building
- (excluding structures that directly contribute to energy-related CO2 emission reductions)
- Cost related to a simple restoration of function, such as restoring the function to the state at the time of installation by updating existing facilities/equipment
- Spare parts (excluding those used for testing and commissioning)
- On-site inspections and writing reports that are submitted to GEC as part of the model project
- Forward exchange contract and remittance charge
- Cost related to land acquisition

^{*} Costs eligible for financial support in the JCM Eco Lease Scheme are limited to a leasing fee of the costs of facilities/equipment and relevant lease interests.

Outline of Guidelines for Submitting JCM Model Project Proposal in FY2022 (2)

Period of Measurement, Reporting and Verification (MRV)

Participants of the model project shall conduct measurement, reporting and verification (MRV) of GHG emission reductions until the end of legal durable years of the facilities/equipment as stipulated by the Japanese law. Please note that the legal durable years of the same facility may vary depending on the purpose of business usage as shown in the examples below.

Ministerial Ordinance on the Durable Years, etc. of Depreciable Assets

(Ordinance NO.15 of Ministry of Finance, March 31, 1965)

 Appendix table 2
 Producing "other final products" by using installed facilities

 Appendix table 1
 Other cases than the above ex. the building owner introduces facilities as shared equipment

(Examples)

Category of technology	Purpose of business usage	Legal durable years
Solar power	Electric power sales	17 years
facilities	Internal consumption at car manufacturing factories	9 years
	Internal consumption from rooftop equipment on warehouses	12 years
Boilers	Cooking oil production	10 years
	Rubber products production	9 years
	Hot water supply for hotels	17 years
Absorption	Supply of chilled water in chemical factories	8 years
cinters	Air conditioning in shopping malls	15 years

* For questions regarding how to determine the appropriate legal durable years for your project, please contact Japanese local tax office.

Cost-effectiveness of Emission Reductions of GHGs

The cost of reducing 1 ton of GHG emissions shall be JPY4,000/tCO2eq or lower in principle. However, if the number of similar technological projects in a partner country is 5 or more, its cost-effectiveness is expected to be JPY3,000/tCO2eq or lower. If it is 10 or more, JPY2,500/tCo2eq or lower. If it is 20 or more, JPY2,000/tCo2eq or lower

Cost-effectiveness of emission reductions of GHG (JPY/tCO2eq)

- = Amount of financial support (JPY)
- + Total emission reductions of GHG (tCO2eq)*
- *Total emission reductions of GHG
- = Emission reductions of GHG per year $(tCO2eq/y) \times legal durable years (y)$

*Amount of financial support (JPY)

= Costs eligible (JPY) × Percentage of financial support (%)

In principle, If the number of similar technology in a partner country is less than 5, JPY4,000/tCO2eq or lower

If the number of similar technology in a partner country is 5 or more, JPY3,000/tCO2eq or lower

If the number of similar technology in a partner country is 10 or more, JPY2,500/tCO2eq or lower

If the number of similar technology in a partner country is 20 or more, JPY2,000/tCO2eq or lower

Solar power project (except Thailand in which the number of similar technology is 20 or more)
JPY2,500/tCO2eq or lower

Hydropower project JPY500/tCO2eq or lower

Regarding the number of similar technology in the partner countries, please refer to Annex 2 "Categorization by applied technology type, Number of JCM model project by each country" of Guidelines for Submitting Proposals.

Outline of Guidelines for Submitting JCM Model Project Proposal in FY2022 (3)

Main Evaluation Criteria for Selecting JCM Model Projects in FY2022 including New Points

Measures to respect human rights

Project participant should take the best possible measures to respect human rights under its own responsibility in accordance with the Action Plan on Busine ss and Human Rights (2020-2025) (the Inter-Ministerial Committee for Japan's National Action Plan on Business and Human Rights, October 2020)

Countries of priority

The model project shall prioritize the partner countries that have already established the JCM. Also, project proposals in the Indo-Pacific region (specifically Asia and Island regions) and African region will be received on the premise that selection is considered in parallel with bilateral negotiations for new partner countries, based on the Implementation of Article 6 following COP26 (MOEJ, November 2021).

Additional point for JCM focus areas of the Infrastructure Initiative for Decarbonization (MOEJ, June 2021)

Projects that introduce following leading decarbonizing technol ogies that are among the focus areas for JCM according to the Infrastructure Initiative for Decarbonization (MOEJ, June 2021) (*Excluding countries that have already introduced or are introducing these technologies as JCM model projects):

1) Renewable energies (solar power, wind power, hydro power, geothermal energy, biomass energy, green hydrogen, and so forth)

2) Crush la sistis in shudin s sald shain (nan fluan sald sh

2) Green logistics including cold chain (non-fluorocarbon cooling system,

- modal shift, airports, ports and harbors, and so forth)
- 3) Waste management infrastructure (waste to energy, and so forth)

Criteria for solar power plants

The conversion rate from optical to electric energy of photovoltaic modules must be 20% or higher.

Criteria for solar power plants with batteries

- Photovoltaic module:
- The efficiency of photovoltaic modules must be 20% or higher.
- Battery:

If the battery meets the requirements stipulated in Guidelines for Submitting Proposals, the battery will also be covered by this programme.

JCM Eco Lease Scheme

From the fiscal year 2020, "JCM Eco Lease Scheme" is implemented to cover leasing charges and interests. This scheme has an advantage in reducing the reporting burden of representative participants with shorter monitoring period and simpler proposal document.

Representative Participant	Japanese leasing company
Amount of Financial Support	Up to JPY500 million for 3 years in principle
Percentage of Financial Support	Uniformly 10% of total leasing charges including leasing interests
Period of MRV	Equal to leasing period
Leasing Period	At least 5 years
Costs Eligible for Financing	Leasing charges of the costs of facilities/equipment and relevant lease interests
Eligible Type of Technologies	In principle, technologies with JCM methodology (ies) that have been either approved or proposed
Financial Statement for Application	Only financial statements of Representative Participant need to be submitted.

Submission of Proposals

How to Submit Proposals:

Proposals must be submitted electronically.

Period:

From Wednesday, 6 April 2022 to Wednesday, 30 November 2022 (12:00 JST) *It may be closed before the deadline based on the availability of remaining budget.

Japan Platform for Redesign: Sustainable Infrastructure (JPRSI)

What is JPRSI?

JPRSI is a public-private partnership platform established by the Ministry of the Environment of Japan in September 2020 to comprehensively support partner countries' governments and corporations, etc. to improve environment by introducing Japanese environmental infrastructure.

Environmental Infrastructure

① Infrastructure for Environmental Conservation

Waste to energy (WtE), waste water treatment plant, decentralized domestic wastewater treatment system ("Johkasou"), renewable power generation, renewable hydrogen etc.

② Infrastructure that Contributes to Decarbonization and Reduction of Environmental Impacts

- Introduction of renewable energy and energy-saving equipment to infrastructures and cities,
- \cdot Highly-efficient energy utilization and management in infrastructure,
- Introduction of equipment for emissions reduction of pollutants (wastewater, exhaust gas, dust, etc.),
- Introduction of disaster prevention systems that contribute to climate change adaptation, etc.

Major Activities and Achievements

① Dissemination of technical information provided by Japanese companies

A list of environmental technologies of JPRSI members is compiled and disseminated (179 technologies, available in English)

② Matching local needs with Japanese corporations' solutions

The JPRSI platform receives inquiries from local governments and/or private sectors of commerce with interest in Japanese environmental technologies and the possibility to collaborate in projects, and introduces the inquiries to JPRSI members for matching.

JPRSI Members (as of September 30, 2022)

461 Japanese corporations etc.





JPRSI HP: JPRSI Secretariat (FY2022) Overseas Environment Cooperation Center (OECC) Mail: info-jprsi@oecc.or.jp

Application Support by GEC for JCM Model Project

GEC Website

GEC introduces project examples selected so far in the JCM Model Project on the GEC website. You can search by sector such as renewable energy for project study. For additional information, please refer to "Guidelines for Submitting Proposals" and Q&A on the website.

Suitable for Obtaining information on the programme including past projects and how to apply, etc.

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https://gec.jp/jcm/

"JCM Global Match" JCM Business Matching Platform – Free of charge -

The JCM Global Match is a free-of-charge online business matching platform designed to help you find your business partners for an International Consortium of your JCM Model Project. Among the registrants in the platform, you will be able to find Japanese and international companies with excellent decarbonization technologies, JCM partner country companies to use such technologies, consultants familiar with the JCM Programme and helpful in deal making, and Japanese and multinational financial institutions. About 40 % of the registrants are Japanese entities and the rest are from more than 40 countries. You can appeal your company's specialties and projects to all the registrants in various ways, like adding your information in the profile and specialty sections, posting a chat about your company or project in the "Open Discussion" room, etc. And you can find your potential business partner from the search window or the lists of the companies by categories. If you find a registrant of a company you are interested in, send a "Matching Request" to him/her. Once the receiver accepts your request, you can get his/her whereabouts to contact directly with him/her. In addition, you will get useful information about JCM and events on the platform. Register now. It's easy. (Contact for JCM Global Match: jcm-gm@gec.jp)

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This business matching platform is dedicated to help set up an international consortium for a <u>dCM model topies</u>, a scheme to provide financial supports from the government of Japan accelerate diffusion of advanced deschemotizing inchnologies. You can SEAACH for, CCMMUNICATE with other users and ADVERTISE your business freely in this site.



Suitable for Finding JCM project partners including Japanese companies expanding business overseas and overseas companies wishing to introduce technologies using JCM funding.

https://gec.force.com/JCMGlobalMatch/s/?language=en_US

Consultation by GEC

GEC provides application consultation in order to assist project formation for entities interested in JCM Model Project. Please feel free to contact us. Please send an e-mail to jcm-info@gec.jp. Subject of e-mail should be "Consultation on application for JCM Model Project (Your company name)".

Suitable for Asking questions to or consulting with GEC staff directly at various phases of proposal preparation from early planning to application.

Cover Pictures

Top from the left; Amorphous Transformers (Lao PDR) Yuko Keiso Co., Ltd. / Boiler (Viet Nam) Acecook Co., Ltd. / Chiller (Thailand) The Kansai Electric Power Co., Inc. / Boiler (Indonesia) Japan Pulp and Paper Company Limited Bottom from the left; Solar Power (Cambodia) Asian Gateway Corporation / Waste Heat Recovery (Myanmar) Global Engineering Co., Ltd. / Gas Co-generation System and Chiller (Thailand) The Kansai Electric Power Co., Inc. / Solar Power (Mexico) Sharp Energy Solutions Corporation



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