Commissioned work by Ministry of Economy, Trade and Industry, Japan

Seminar on Exploring Collaboration Opportunities toward Decarbonized and Sustainable Society in India

Introduction of JCM feasibility study scheme by METI and Key points for application

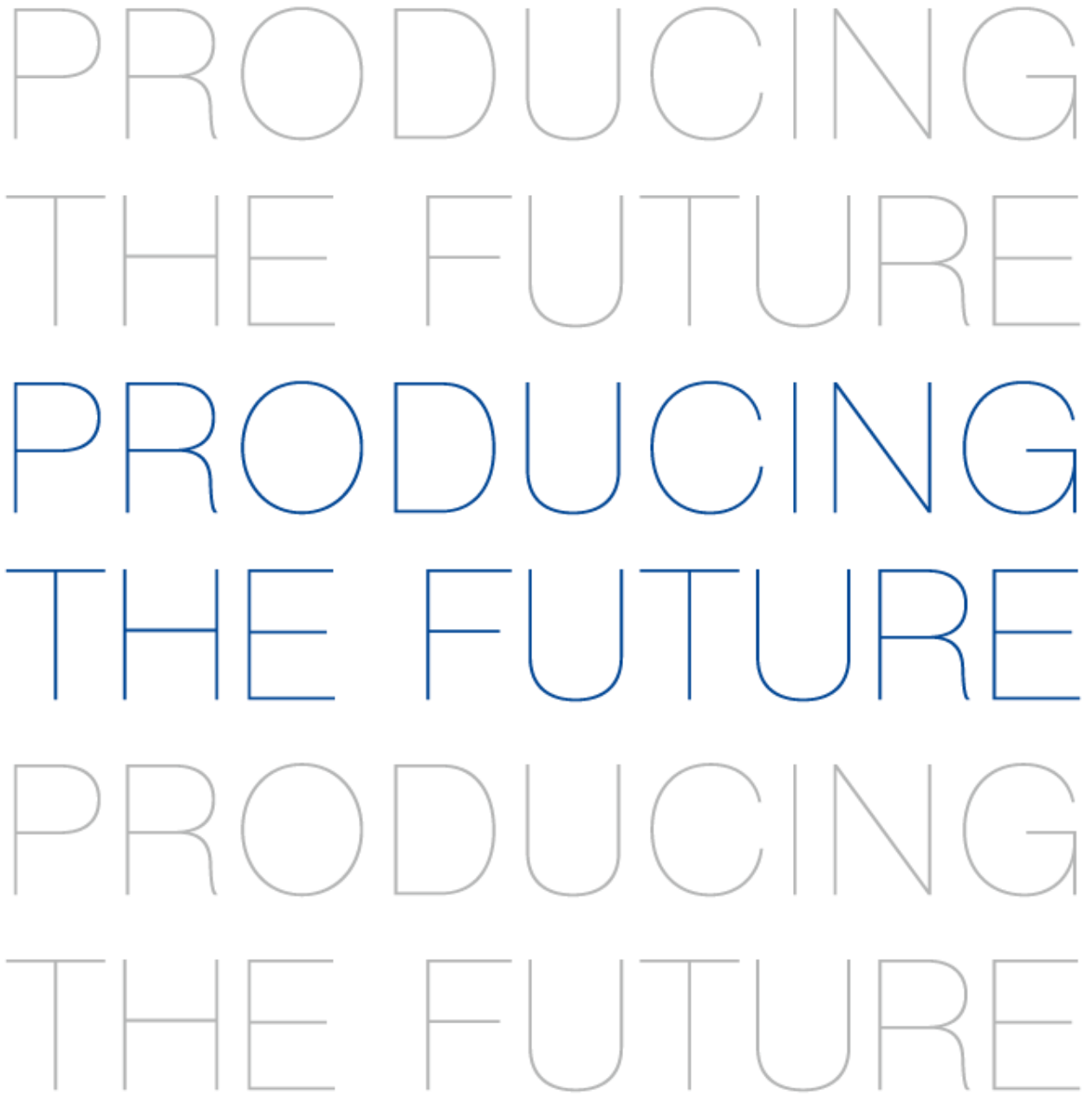
March 4, 2025

JCM FS Secretariat

PACIFIC CONSULTANTS CO., LTD.

PRODUCING THE FUTURE

contents



PACIFIC CONSULTANTS

No.1 General Construction Consulting firm

President/CEO
Osamu Omoto

President/Senior Executive Officer,
Global Company　Kazuhiro Doi

2,200 Employee

Annual Turn Over: **JY54Billion**

Number for projects: **4,000/year**

Pacific Consultants

Producing The Future™

Our business field

Our history 1951-2023

1961 Tokaido Shinkansen

1971 Tanegashima Space Center

2002 The metropolitan area outer underground discharge channel

2006 Kyoto Mechanism Project

1963 Tomei Highway

1988 Honshu-Shikoku bridge express way

2004 Re-expansion of Tokyo international airport

Our history 1951-2023

2009 — Shibuya Redevelopment Project

2011 — Tohoku Reconstruction Project

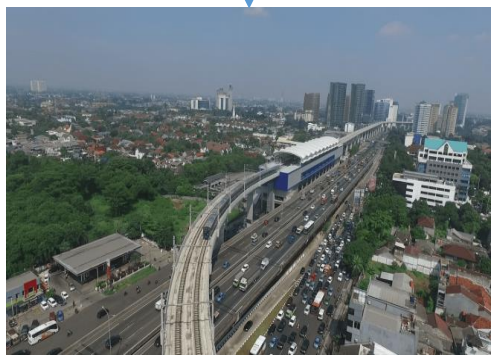
2015 — Design of highway in Yokohama

2017 — Toyama St. TOD Project + LRT Network Project

Projects in Japan

Oversea Projects

2013 — Development of the urban railway in Jakarta



2016 — infrastructures in Myanmar

2021 — Recovery project from cyclone Idai in Mozambique

METI's support for the JCM partner countries

- METI supports the introduction of **advanced decarbonizing technologies though Demonstration Projects** which contribute to the decarbonization of the JCM partner countries.
- The project cost burdened by Japanese side is **100% supported by Japanese government (METI/NEDO).**

Examples of past projects

Optimization in petroleum refining plant, Yokogawa Electric Corp. Indonesia

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

Total: 11 projects in 6 countries (As of July 2023)

JCM Feasibility Study by METI

METI Ministry of Economy, Trade and Industry

Scope:

- Consider basic elements of the demonstration (technology, project site, stakeholders, etc.)
- Establish the basis of JCM methodology for quantification of the GHG emission reduction
- Study the possibility of dissemination of the introduced technology
- Project cost: 15 million JPY (approx.116 thousand USD) per study

Project period: Up to 1 year

Assumed technical areas: Energy efficiency with IoT, EMS, Renewable energy, CCS/CCUS, Hydrogen/Ammonia, etc.

JCM Demonstration Program by NEDO (*)

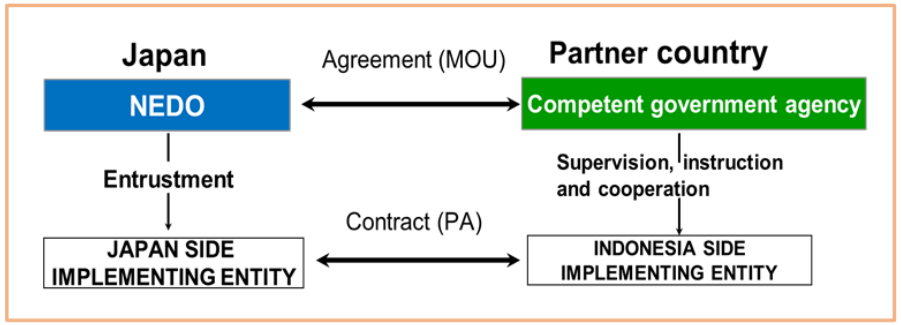
NEDO

Scope:

Demonstrate and verify the effectiveness of advanced decarbonizing technology:

- Introduction of relevant facilities and systems, and conduct demonstration
- Quantification of GHG emission reduction effectiveness
- JCM procedure toward issuance of JCM credits
- Budget for FY 2024: 0.7 billion JPY (approx. 4.7 million USD)

Project period: Pre-demonstration stage: up to 1 year
Demonstration stage: up to 3 year
Follow-Up Project stage: up to 2 year



* NEDO = New Energy and Industrial Technology Development Organization

Source:

Ministry of Economy, Trade and Industry

経済産業省 令和５年度
二国間クレジット取得等のためのインフラ整備調査
（JCM実現可能性調査）
企画提案の公募説明会資料

Ministry of Economy, Trade and Industry, Japan
Call for FY2024 JCM Feasibility Study
Briefing for proposal

公募期間：令和5年4月24日（月）～5月26日（金）正午
Open from 24 April 2024 to 12:00 PM 26 May 2024

***This presentation is based on the JCMFS application guideline for FY2024 (Only in Japanese).**
https://jcmfs.meti.go.jp/

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1. Purpose of the JCM FS

❑ Purpose

Examining the feasibility of a project to **commercialize** decarbonization technology(ies) and product(s) by Japanese and/or other entities, and to realize GHG emission reductions and **JCM credits issuance by utilizing the Joint Crediting Mechanism (JCM).**

As an exit strategy of JCM FS, it is expected to **apply for either the NEDO JCM Demonstration scheme** or **Private JCM scheme** after completion of your proposed JCMFS.

*Note:
NEDO JCM Demonstration is financed by NEDO.
Private JCM is “JCM project that is financed by private sector”.

2. Target countries, technologies and products

- Target countries

  Current JCM partner countries

  and prospective partner countries.

Current JCM partner countries

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

- Target technologies/products

Energy-derived CO2 emission reduction is necessary:

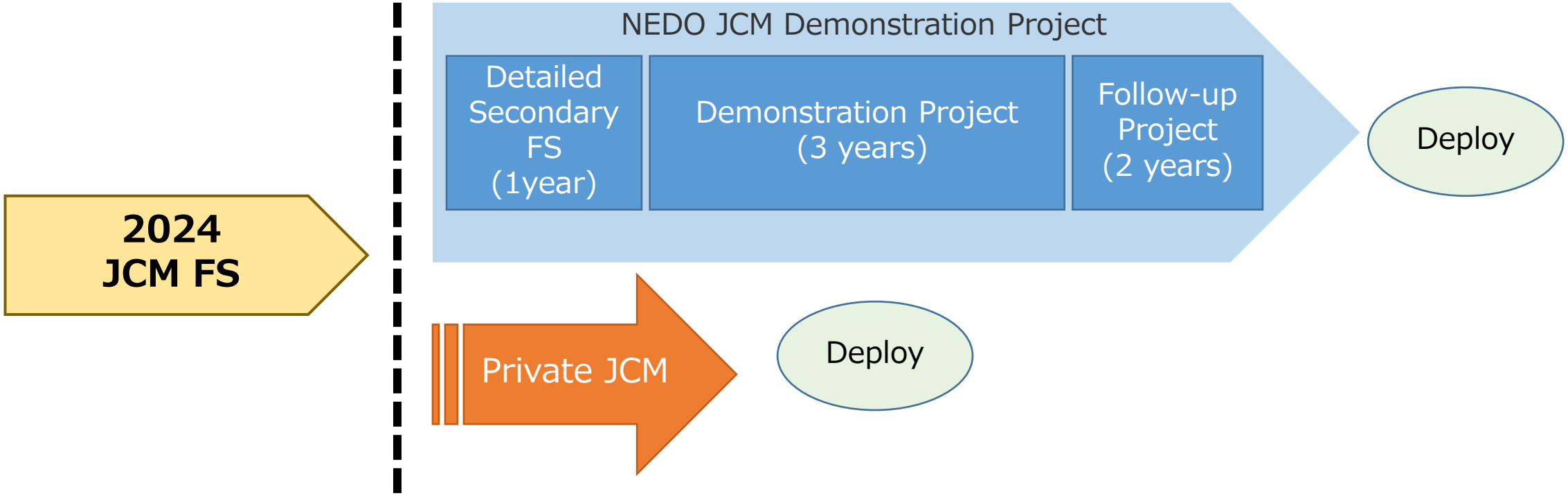
✓ Reduction of energy-derived CO2 emissions through the use of superior decarbonization technologies is necessary, and contribution to issue JCM credits in partner countries that have signed or perspective partner countries.

GHG Emission reduction should be calculated in a quantitative manner:

✓ GHG emission reductions shall be calculated in a quantitative manner. Applicant have to consider existing JCM methodology or propose a new JCM methodology. While no clear threshold for amount of GHG emission reductions will be set, priority may be given to proposals that are expected to achieve larger GHG emission reductions.

3. Expected exit strategies after the JCM FS

- Exit strategy
  - NEDO JCM Demonstration Project, or
  - Private JCM project



3. Expected exit strategies after the JCM FS

Differences in target technologies and assumed GHG emission reductions by each exit strategy.

Exit strategy	NEDO JCM Demonstration Project	Private JCM
Target Technology	① The technology **to be demonstrated must be a Japanese low-carbon technology or system owned by the proposer**, and there **must be technical issues to be overcome** in order to promote the technology or system in the partner country. The demonstration is necessary to overcome such technical issues. ② The demonstration project is expected to have **fossil energy-derived CO2 emission reductions**. ③ The demonstration project is expected to have **quantifiable GHG emission reductions**. ④ The dissemination strategy for proposed technology/system must be concrete and highly feasible. ⑤ The demonstration plan must be appropriately prepared as an effective means of overcoming the technical issues identified in ①.	There are no restrictions on the target technologies if the introduction of superior decarbonization technologies that contribute to GHG emission reductions and absorption by private enterprises in Japan is financed by the private enterprises themselves. *Note that the target of JCM FS is the introduction of technologies that contribute to the reduction of energy-based CO2 emissions.
Assumed GHG emission reductions	JCM credits of **1,000 t-CO2 or more are expected during the monitoring period of the demonstration project**, and emission reductions of **10,000 t-CO2 or more per year during the period of diffusion and deployment** after the demonstration project is completed.	No specific criteria are set.

※ Both JCM Demonstration Project and Private JCM are only applicable for JCM Partner countries.

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4. Research items on the the JCM FS

	Items	Example of Survey Details
1	**Research related policy and institutional trends in a proposed country**	● Research trends of policies related to FS in a partner country.
2	**Research socio-economic situation and market trends in a proposed country**	● Understand socio-economic situation, market trends and local needs for proposed systems/technologies in a partner country.
3	**Analise issues and countermeasures against JCM project formation**	● Identify and analyze issues against project commercialization utilizing JCM (business risks, bottlenecks for dissemination, etc.) as well as countermeasures to be taken for JCM project formation .
4	**Draft a GHG emission reduction methodology and calculate GHG emission reductions by introducing proposed technology(ies)**	● Draft a GHG emission reduction methodology utilizing JCM methodology format and calculate GHG emission reduction potential for a proposed JCM project idea.
5	**Share a proposed JCM project idea with stakeholders**	● Discuss with government officials and business partners and related stakeholders on a proposed JCM project.
6	**Identify remaining issues and analyze solution for JCM project formation**	● Based on the results of JCM FS, identify remaining issues to be solved for JCM project formation from political, economical, social and technical perspectives, and consider their solutions.
7	**Draft a Project Idea Note (PIN) for JCM project registration**	● Based on the results of JCM FS, draft a PIN.

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4. Research items on the JCM FS

Project Idea Note

を参照する必要がある。)

PIN reference number	(For the secretariat use only)

All the infromation described in this document is at the pre-implementaion stage and may change as the project developes.

1. Basic project information	
1.1. Date of Submission	dd/mm/yyyy
1.2. Partner country (*A host county where the planned project is located*)	
1.3. Title of the planned project (*Should be self-explanatory and clearly indicate the activity leading to GHG emissions reductions / removals*)	

The Joint Committee makes the result publicly available, including the PIN reference number, the name of the planned project, the date of submission in the above, and the reason for objection when the Joint Committee objects to the planned project described in the PIN through the JCM website.

2. Project participants and contact information	
2.1. Representative Japanese participant for the project and its roles in the project *(For identification of the person in charge for the project in terms of communication)*	
Name of the entity (*Company, etc.*):	
Roles of the entity in the project:	
Address of the contact entity:	
Website of the contact entity:	
Name and position of the main contact person in the entity:	**Last name:** **First name:** **Position:**
E-mail of the main contact person:	
Phone number of the main contact person:	
2.2. Japanese participant(s) for the project and their roles in the project except for the entity in 2.1. *(If possible, please indicate the contact person of each entity involved in the project)*	
Name of the entity (*Company, etc.*):	
Roles of the entity in the project:	
Address of the entity:	
Website of the entity:	
Name and position of the contact person in the entity:	**Last name:** **First name:** **Position:**
E-mail of the contact person:	

1

あり最新様式はJCM ホームページの各パートナー国ページを参照する必要がある。)

y for the project and their roles in the project
t person of each entity involved in the project)

Last name: **First name:**
Position:

tal agency of partner country
t person)

Last name: **First name:**
Position:

☐ Yes (*Briefly explain the status below*)

☐ No

2

JCM ホームページの各パートナー国ページを参照する必要がある。)

ct costs:
t currency:
ese Yen:
n (in project currency):

g methodology(ies) (*Please specify below*)

ethodology(ies) needed (*Briefly explain the status below*)

02/year

g project participants.
centage of credit allocation as below, *understanding the t Committee at the time of project registration*:
pport from the Government of Japan, the Government of it allocation.

nts)	%
	%

expected; otherwise, explain in the "Other" section.)

f Japan: Select one of the	Fiscal Year of Japan
ct by Ministry of the	
he United Nations Industrial	
ect by MOEJ	
Asian Development Bank	
and Industrial Technology nomy Trade ad Industry,	
financed and what financial	

3

ナー国と調整中のものであり最新様式はJCM ホームページの各パートナー国ページを参照する必要がある。)

onomic incentive will make the project viable.):

on structure

ge of the implementation structure including financial flows below:

f PIN

Date	Contents revised
nm/yyyy	
nm/yyyy	
nm/yyyy	

ts fill in this section when they submit a revised PIN to the Joint Committee.
ed, as needed

4

Source: https://www.meti.go.jp/press/2022/03/20230328004/20230328004-2.pdf

5. JCM FS budget and eligibilities for application

- **Type : Entrustment from JCMFS secretariat**

- **Schedule : from Contract date to 7 February 2024**

  Schedule of open call for proposal in 2024:

  1st call from 22 April to 24 May 2024 (7 projects approved). Contract date: middle July.

  2nd call from 22 July to 23 August 2024 (7 projects approved). Contract date: late September.

  3rd call from 21 October to 1 November 2024 (1 projects approved).Contract date: middle November

- **Budget : Maximum 15 million JPY (tax excluded)/proposal**

  = approx. 100,000 USD/proposal (1USD=150JPY)

  = approx. 8.5 million INR/proposal (1INR=1.75JPY)

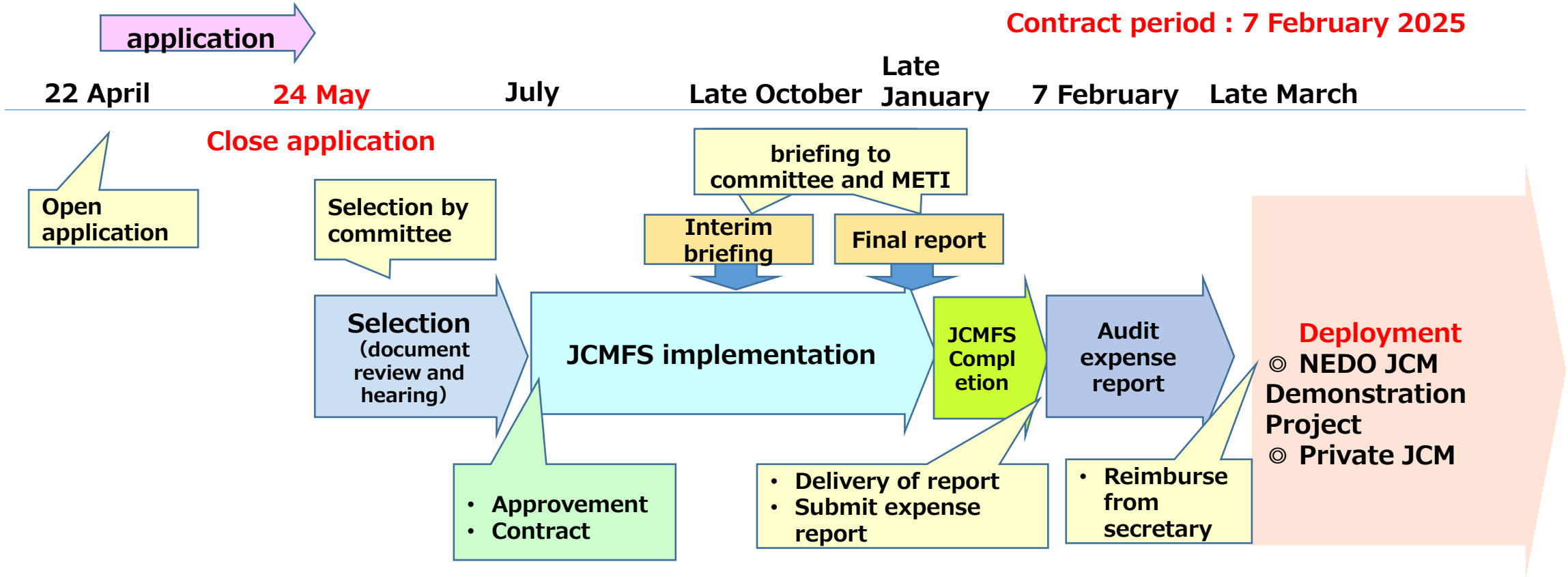
- **One of eligibilities for applicants :**

  ✓ Having a parent company in Japan.

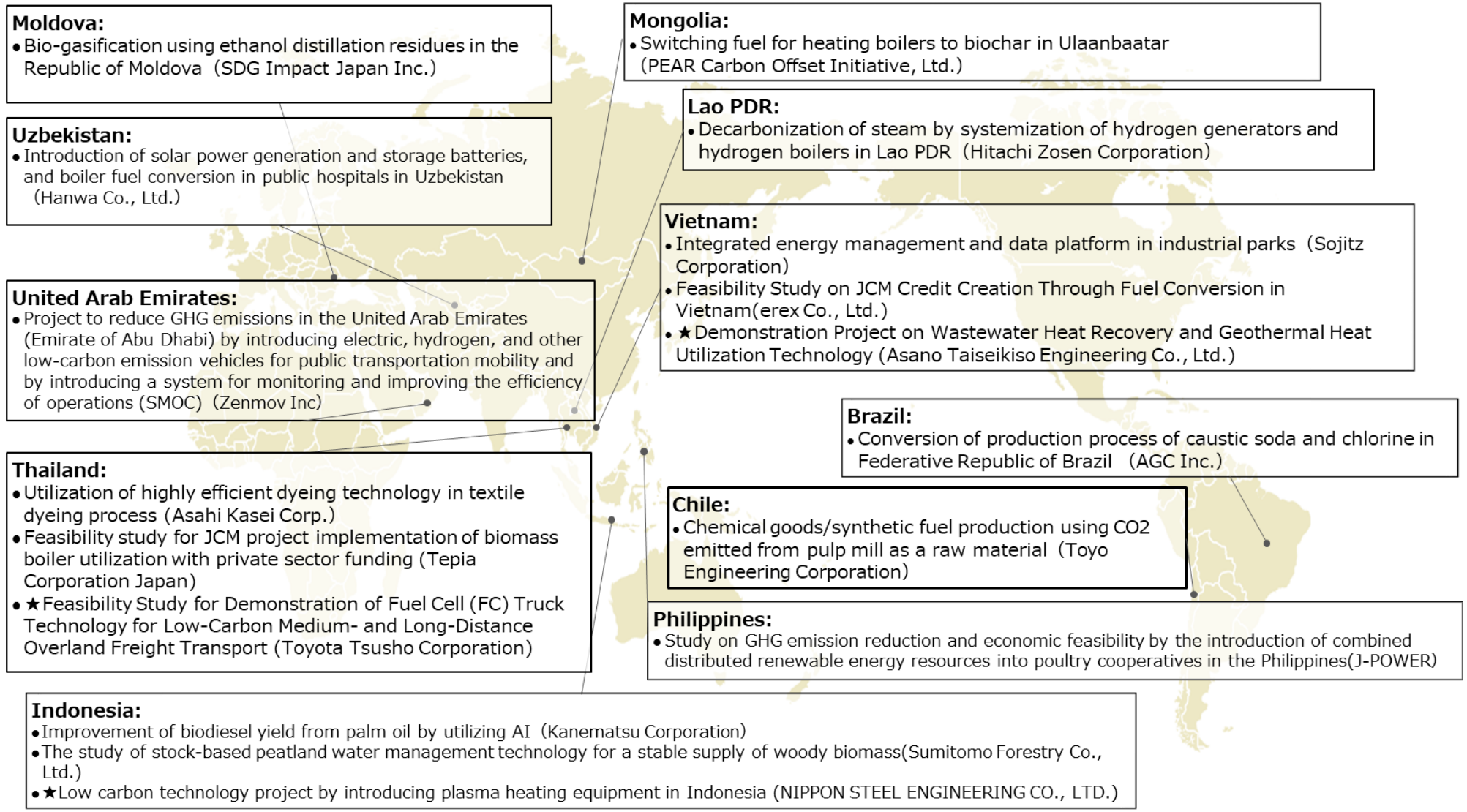
  ✓ Japanese parent company's overseas subsidiary is also able to apply.

  *Note: All documents for application must be in Japanese.

6. Schedule (in case of 1st call application in FY2024)



Feasibility Studies and Detailed/Secondary Feasibility Study: (FY 2023)



Moldova:
- Bio-gasification using ethanol distillation residues in the Republic of Moldova (SDG Impact Japan Inc.)

Uzbekistan:
- Introduction of solar power generation and storage batteries, and boiler fuel conversion in public hospitals in Uzbekistan (Hanwa Co., Ltd.)

United Arab Emirates:
- Project to reduce GHG emissions in the United Arab Emirates (Emirate of Abu Dhabi) by introducing electric, hydrogen, and other low-carbon emission vehicles for public transportation mobility and by introducing a system for monitoring and improving the efficiency of operations (SMOC) (Zenmov Inc)

Thailand:
- Utilization of highly efficient dyeing technology in textile dyeing process (Asahi Kasei Corp.)
- Feasibility study for JCM project implementation of biomass boiler utilization with private sector funding (Tepia Corporation Japan)
- ★Feasibility Study for Demonstration of Fuel Cell (FC) Truck Technology for Low-Carbon Medium- and Long-Distance Overland Freight Transport (Toyota Tsusho Corporation)

Indonesia:
- Improvement of biodiesel yield from palm oil by utilizing AI (Kanematsu Corporation)
- The study of stock-based peatland water management technology for a stable supply of woody biomass(Sumitomo Forestry Co., Ltd.)
- ★Low carbon technology project by introducing plasma heating equipment in Indonesia (NIPPON STEEL ENGINEERING CO., LTD.)

Mongolia:
- Switching fuel for heating boilers to biochar in Ulaanbaatar (PEAR Carbon Offset Initiative, Ltd.)

Lao PDR:
- Decarbonization of steam by systemization of hydrogen generators and hydrogen boilers in Lao PDR (Hitachi Zosen Corporation)

Vietnam:
- Integrated energy management and data platform in industrial parks (Sojitz Corporation)
- Feasibility Study on JCM Credit Creation Through Fuel Conversion in Vietnam(erex Co., Ltd.)
- ★Demonstration Project on Wastewater Heat Recovery and Geothermal Heat Utilization Technology (Asano Taiseikiso Engineering Co., Ltd.)

Brazil:
- Conversion of production process of caustic soda and chlorine in Federative Republic of Brazil (AGC Inc.)

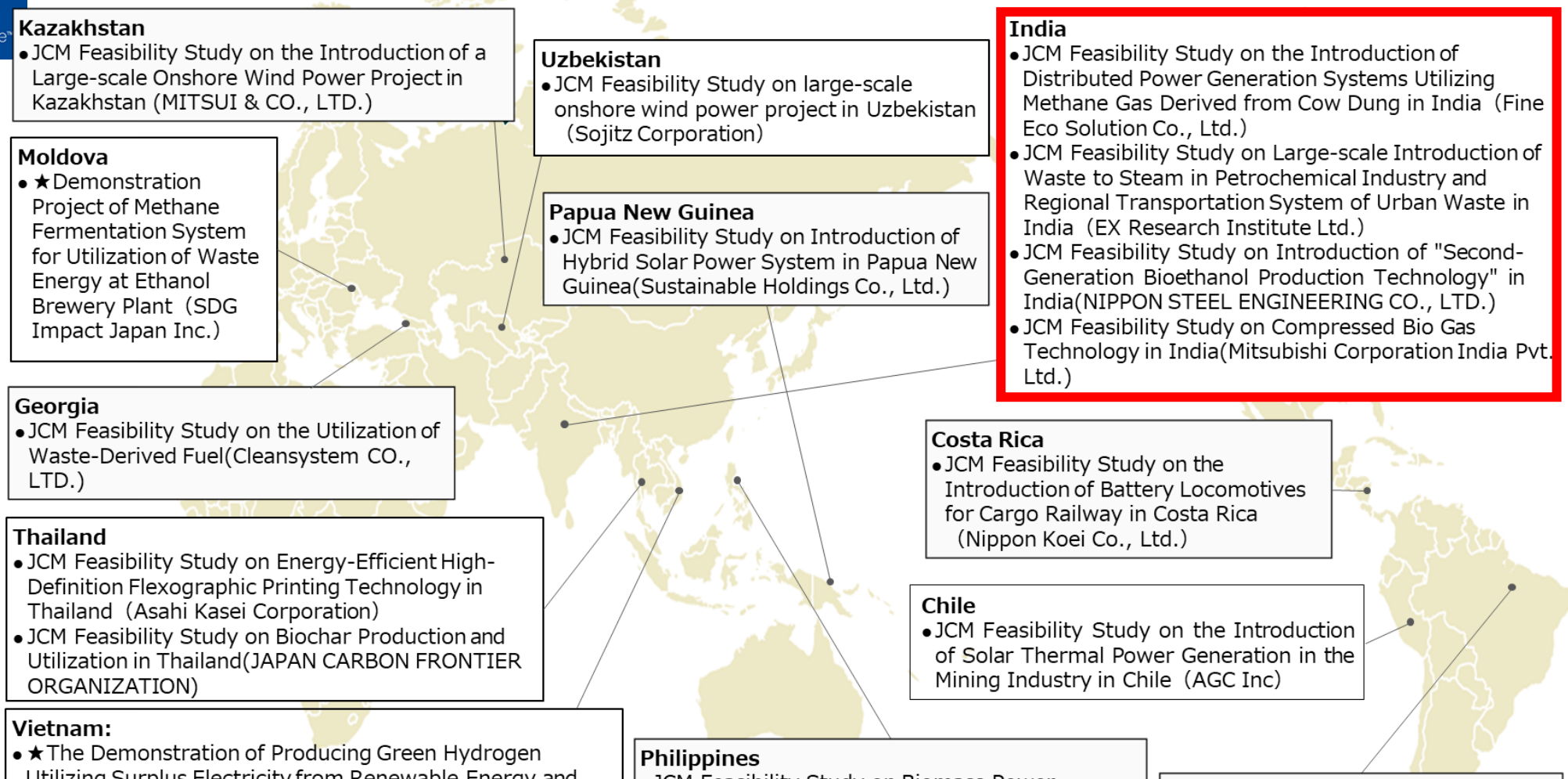
Chile:
- Chemical goods/synthetic fuel production using CO2 emitted from pulp mill as a raw material (Toyo Engineering Corporation)

Philippines:
- Study on GHG emission reduction and economic feasibility by the introduction of combined distributed renewable energy resources into poultry cooperatives in the Philippines(J-POWER)

Total as of 2023: **17 projects** (11 countries)
Projects with "●" are Feasibility Studies by METI
Projects with "●★" are Detailed/Secondary Feasibility Study by NEDO

Source: Ministry of Economy, Trade and Industry

Feasibility Studies and Detailed/Secondary Feasibility Study: (FY 2024)



Kazakhstan
- JCM Feasibility Study on the Introduction of a Large-scale Onshore Wind Power Project in Kazakhstan (MITSUI & CO., LTD.)

Uzbekistan
- JCM Feasibility Study on large-scale onshore wind power project in Uzbekistan (Sojitz Corporation)

Moldova
- ★Demonstration Project of Methane Fermentation System for Utilization of Waste Energy at Ethanol Brewery Plant (SDG Impact Japan Inc.)

Papua New Guinea
- JCM Feasibility Study on Introduction of Hybrid Solar Power System in Papua New Guinea(Sustainable Holdings Co., Ltd.)

India
- JCM Feasibility Study on the Introduction of Distributed Power Generation Systems Utilizing Methane Gas Derived from Cow Dung in India (Fine Eco Solution Co., Ltd.)
- JCM Feasibility Study on Large-scale Introduction of Waste to Steam in Petrochemical Industry and Regional Transportation System of Urban Waste in India (EX Research Institute Ltd.)
- JCM Feasibility Study on Introduction of "Second-Generation Bioethanol Production Technology" in India(NIPPON STEEL ENGINEERING CO., LTD.)
- JCM Feasibility Study on Compressed Bio Gas Technology in India(Mitsubishi Corporation India Pvt. Ltd.)

Distributed Biogas

Waste to Steam

2nd-G Bioethanol

CBG

Georgia
- JCM Feasibility Study on the Utilization of Waste-Derived Fuel(Cleansystem CO., LTD.)

Costa Rica
- JCM Feasibility Study on the Introduction of Battery Locomotives for Cargo Railway in Costa Rica (Nippon Koei Co., Ltd.)

Thailand
- JCM Feasibility Study on Energy-Efficient High-Definition Flexographic Printing Technology in Thailand (Asahi Kasei Corporation)
- JCM Feasibility Study on Biochar Production and Utilization in Thailand(JAPAN CARBON FRONTIER ORGANIZATION)

Chile
- JCM Feasibility Study on the Introduction of Solar Thermal Power Generation in the Mining Industry in Chile (AGC Inc)

Vietnam:
- ★The Demonstration of Producing Green Hydrogen Utilizing Surplus Electricity from Renewable Energy and Providing System Solutions (OBAYASHI CORPORATION)

Philippines
- JCM Feasibility Study on Biomass Power Generation Utilizing Agricultural Residues in the Philippines (Kubota Corporation)
- JCM Feasibility Study on the Installation of Solar Panels and Batteries and Optimal Power Control Technology for Wireless Base Stations in the Philippines (¥NTT DOCOMO, INC)

Brazil
- JCM Feasibility Study on Biomass Power Generation Project in Brazil Led by Private Sector(NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc.)

17 projects (12 countries)
Projects with "●" are Feasibility Studies by METI
Projects with "●★" are Detailed/Secondary Feasibility Study by NEDO

Source: Ministry of Economy, Trade and Industry

Feasibility Studies in India: (FY 2024)

- JCM Feasibility Study on the Introduction of Distributed Power Generation Systems Utilizing Methane Gas Derived from Cow Dung in India（Fine Eco Solution Co., Ltd.）
- JCM Feasibility Study on Large-scale Introduction of Waste to Steam in Petrochemical Industry and Regional Transportation System of Urban Waste in India（EX Research Institute Ltd.）
- JCM Feasibility Study on Introduction of "Second-Generation Bioethanol Production Technology" in India (NIPPON STEEL ENGINEERING CO., LTD.)
- JCM Feasibility Study on Compressed Bio Gas Technology in India (Mitsubishi Corporation India Pvt. Ltd.)

If you have any JCM FS project idea, please contact to the secretariat!

■If you have a project idea that may be applicable to JCM FS, Please download the information sheet and send it to us → jcmfs-sec@tk.pacific.co.jp

- Information sheet
  - https://pckk.box.com/s/qz97pm7688496v3v7pt2ylp5pqag7ylp
    File : 【記入用】将来的なJCMFSに繋がる可能性のある案件候補情報, or
    [Please fill in] Project information sheet for JCMFS

Useful Links

■JCM Official Website (incl. Rules and Guidelines, Methodologies for each partner country)
- https://www.jcm.go.jp/

■About JCM
- http://carbon-markets.env.go.jp/index.html
- http://carbon-markets.env.go.jp/eng/

■Guidance for the Development of Private-Sector JCM Projects
- (Japanese) https://www.meti.go.jp/policy/energy_environment/global_warming/jcm/pdf/private_secor_JCM_guidance_all_202403.pdf
- (English) https://www.meti.go.jp/english/press/2023/0328_002.html

■2024 JCM-FS website for application（No English website)
- https://jcmfs.meti.go.jp/

Thank you so much for
allowing us to make a presentation.

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