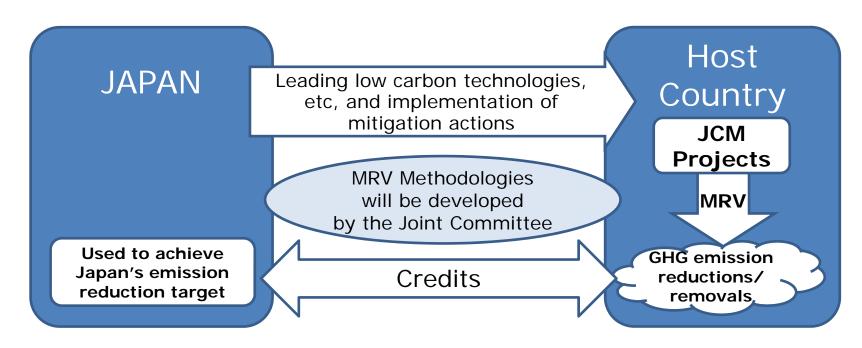
Recent Development of The Joint Crediting Mechanism (JCM)

January 2015

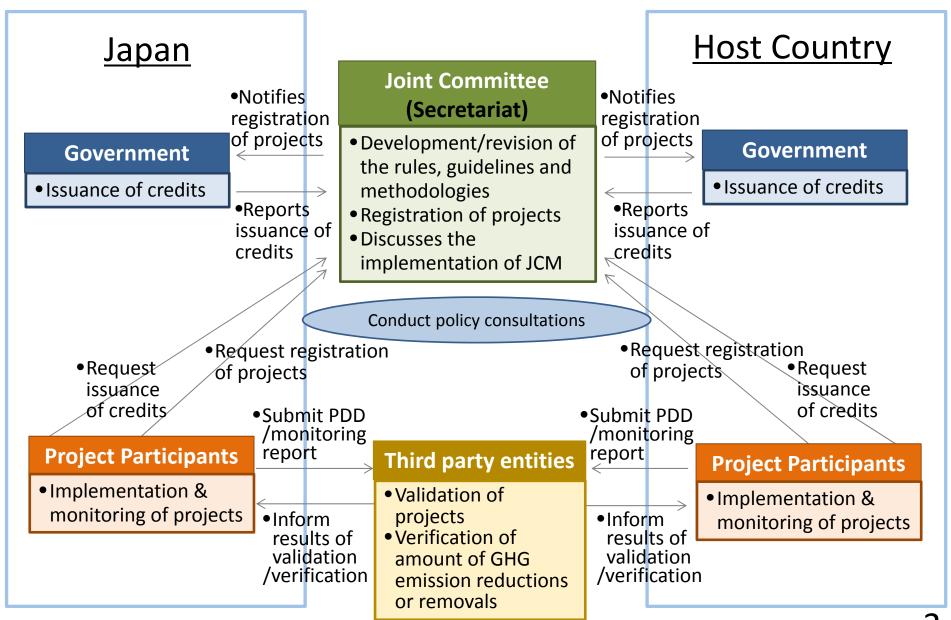
Yoshikazu HASUNUMA Ministry of Economy, Trade and Industry

Basic Concept of the JCM

- 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 use 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, complementing the CDM.



Scheme of the JCM



The role of the Joint Committee and each Government

- ➤ The Joint Committee (JC) consists of representatives from both Governments.
- The JC develops rules and guidelines necessary for the implementation of the JCM.
- The JC determines either to approve or reject the proposed methodologies, as well as develops JCM methodologies.
- > The JC designates the third-party entities (TPEs).
- ➤ The JC decides on whether to register JCM projects which have been validated by the TPEs.
- > Each Government establishes and maintains a registry.
- ➤ On the basis of notification for issuance of credits by the JC, each Government issues the notified amount of credits to its registry.

Approaches of the JCM

- The JCM should be designed and implemented, taking into account the following:
 - (1) Ensuring the robust methodologies, transparency and the environmental integrity;
 - (2) Maintaining simplicity and practicality based on the rules and guidelines;
 - (3) Promoting concrete actions for global GHG emission reductions or removals;
 - (4) Preventing uses of any mitigation projects registered under the JCM for the purpose of any other international climate mitigation mechanisms to avoid double counting on GHG emission reductions or removals.

Features of the JCM

- (1) The JCM starts its operation as a non-tradable credit type mechanism.
- (2) Both Governments continue consultation for the transition to a tradable credit type mechanism and reach a conclusion at the earliest possible timing, taking account of implementation of the JCM.
- (3) The JCM aims for concrete contributions to assisting adaptation efforts of developing countries after the JCM is converted to the tradable credit type mechanism.
- (4) The JCM covers the period until a possible coming into effect of a new international framework under the UNFCCC.

Project Cycle of the JCM and the CDM

of credits

JCM <Main actors at each process> **Submission of** Project Participant / Each Government **Proposed** Joint Committee Methodology Approval of **Proposed** Joint Committee Methodology conducted by the same TPE simultaneously **Development Project Participant** of PDD Third Party Entities **Validation** Registration Joint Committee conducted **Monitoring Project Participant** Verification Third Party Entities be be Can Joint Committee decides the amount Issuance

Each Government issues the credit

Project Participant

CDM

CDM Executive Board

Project Participant

Designated Operational Entities (DOEs)

CDM Executive Board

Project Participant

DOEs

CDM Executive Board

Key features of the JCM in comparison with the CDM

	<u> </u>	
	JCM	CDM
Governance	- "de-centralized" structure (Each Government, Joint Committee)	- "centralized" structure (CMP, CDM Executive Board)
Sector/project Coverage	- Broader coverage	-Specific projects are difficult to implement in practice (e.g. USC coal-fired power generation)
Validation of projects	 In addition to DOEs, ISO14065 certification bodies can conduct Checking whether a proposed project fits eligibility criteria which can be examined objectively 	 Only DOEs can conduct Assessment of additionality of each proposed project against hypothetical scenarios
Calculation of Emission Reductions	-Spreadsheets are provided -Default values can be used in conservative manner when monitored parameters are limited.	 Various formulas are listed Strict requirements for measurement of parameters
Verification of projects	 The entity which validated the project can conduct verification Validation & verification can be conducted simultaneously 	 In principle, the entity which validated the project can not conduct verification Validation & verification must be conducted separately

Roadmap for the JCM

JFY2012 JFY2014 JFY2013 **Governmental Consultation (Increasing numbers of JCM Partner countries)** Consultations with interested countries Establishment & operation of the JC Development of rules and guidelines Establishment & Signing operation of the website **JCM Bilateral** Operation Establishment & Document operation of the registry **Development of methodologies** Registration of projects **JCM Demonstration Projects and JCM Model Projects Feasibility Studies & Capacity Building UNFCCC** negotiations

Countries with which Japan has signed on bilateral documents

➤ Japan has held consultations for the JCM with developing countries since 2011 and signed the bilateral document for the JCM with Mongolia, Bangladesh, Ethiopia, Kenya, Maldives, Viet Nam, Lao PDR, Indonesia, Costa Rica, Palau, Cambodia and Mexico.

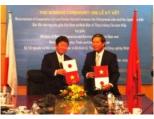












Mongolia
Jan. 8, 2013
(Ulaanbaatar)

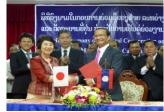
Bangladesh Mar. 19, 2013 (Dhaka)

Ethiopia May 27, 2013 (Addis Ababa)

Kenya Jun. 12,2013 (Nairobi)

Maldives Jun. 29, 2013 (Okinawa)

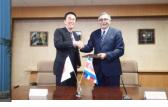
Viet Nam Jul. 2, 2013 (Hanoi)



Lao PDR Aug. 7, 2013 (Vientiane)



Indonesia Aug. 26, 2013 (Jakarta)



Costa Rica Dec. 9, 2013 (Tokyo)



Palau Jan. 13, 2014 (Ngerulmud)



<u>Cambodia</u> Apr. 11, 2014 (Phnom Penh)



Mexico Jul. 25, 2014 (Mexico City)

- ➤ Japan held Joint Committee meetings with Mongolia, Bangladesh, Ethiopia, Kenya, Maldives, Viet Nam, Lao PDR, Indonesia, Palau, Cambodia respectively.
- First JCM project has been registered at 3rd Joint Committee between Indonesia and Japan on Oct.2014 (Project title: Energy saving for airconditioning and process cooling at textile factory)

The current status of UNFCCC negotiation (1/2)

Decision 1/CP18

- 41. Acknowledges that Parties, individually or jointly, may develop and implement various approaches, including opportunities for using markets and non-markets, to enhance the cost-effectiveness of, and to promote, mitigation actions, bearing in mind different circumstances of developed and developing countries;
- 42. Re-emphasizes that, as set out in decision 2/CP.17, paragraph 79, all such approaches must meet standards that deliver real, permanent, additional and verified mitigation outcomes, avoid double counting of effort and achieve a net decrease and/or avoidance of GHG emissions;
- 44. *Requests* the SBSTA to <u>conduct a work programme</u> to elaborate a framework for such approaches, drawing on the work of the AWG-LCA on this matter, including the relevant workshop reports and technical paper, and experience of existing mechanisms, with a view to recommending a draft decision to the COP for adoption at its 19th session;
- 45. Considers that any such framework will be developed under the authority and guidance of the Conference of the Parties;

The current status of UNFCCC negotiation (2/2)

Decision 19/CP18

Common tabular format for

"UNFCCC biennial reporting guidelines for developed country Parties"

Tab	e 4(b) F	Reporti	ng on p	rogre	SS									
Kyoto Protocol units ^d							Other units ^{d,e}							
	$(kt\ CO_2\ eq)$						(kt CO2eq)							
	AAUs		$\it ERUs$		CERs		tCERs		lCERs		Units from market-based mechanisms under the Convention		Units from other market-based mechanisms	
20XX-3	20XX-2	20XX-3	Year X-2	20XX-3	20XX-2	20XX-3	20XX-2	20XX-3	20XX-2	20XX-3	20XX-2	20XX-3	20XX-2	
 Quantity	of units		·	.		<u>.</u>	_ -		<u>.</u>	· · · · · · · · · · · · · · · · · · ·				
				20XX-3					20XX-2					
Total										,				

- ➤ The JCM is one of various approaches based on Decision 1/CP.18, jointly developed and implemented by Japan and partner countries, and Japan intends to contribute to elaborating the framework for such approaches under the UNFCCC.
- ➤ Japan will report to the COP the use of the JCM in Biennial Reports including the Common Tabular in line with Decision 19/CP18.

References

- **◆JCM Demonstration Projects**
- **◆**Feasibility Studies
- **◆**Capacity Building

JCM Promotion Scheme by METI

JCM Demonstration Projects

- ■JCM Demonstration Projects are 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.
- ■The budget for FY 2015: 3billion JPY (approximately \$30million) ※
- Coverage of project cost: Cost of the JCM Demonstration Projects necessary for MRV

e.g. Cost of design, machines, materials, labor, travel, etc.

- Eligibility for the JCM Demonstration Projects:
- Concrete Projects to demonstrate the effectiveness of leading Japanese technologies and/or products installed and operated in the projects, and the amount of their GHG emission reduction with MRV methodology by actual operation
- Project Participants consist of entities from both countries, only the Japanese entities can apply for the JCM Demonstration projects. The projects shall be completed within 3 years.

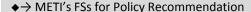
JCM Feasibility Study (FS)

■ The study to promote potential JCM projects and to survey their feasibility as well as to check the practicality of the MRV methodology.

Capacity Building Programmes

■ Variety of capacity building activities to increase technical experts e.g.,) Experts on measuring amount of emission reductions by introducing low carbon technologies and products in the host country.

JCM Feasibility Studies, MRV Applicability Verification Studies and Demonstration Projects by METI & NEDO in FY2013



- → NEDO's FSs for Project Exploration / Development
- ▲ → NEDO's MRV Applicability Verification Study
- → NEDO's Demonstration Projects

Mongolia:

- ♦Wind-Power generation
- energy efficient housing complex at Ger area
- High efficiency and low loss power transmission and distribution system

Myanmar:

◆Run-of-river Micro Hydro Power Generation

Bangladesh:

▲CCGT power generation

Kenya:

◆Dissemination of Solar lantern

Kenya, Ethiopia:

Micro Hydro power plant

Djibouti, Rwanda:

◆Geothermal Power Generation

Vietnam:

- ◆Highly Efficient Coal Power Plants(Ultra Super Critical)
- ◆Water purification/sludge reduction
- Energy recovery using organic waste
- Wind-Power generation
- Energy saving by inverter air conditioner optimum operation at National Hospital
- Energy saving by BEMS optimum operation at Hotel

Lao PDR:

- ◆Energy saving at beer plant
- ◆REDD+

Indonesia:

- **♦**Biomass Power Generation
- ◆Energy saving stores based on CO2 refrigerant
- ◆REDD+ (4 projects)
- Energy saving by optimum operation at Oil factory
- Utility facility operation optimization technology into Oil factory
- Thin-Film solar power plant

Thailand:

- ◆Energy saving at Industrial Estate
- Air Conditioners using CO2 refrigerant

India:

- ◆Energy Efficient Air Conditioners (HFC 32)
- ◆Energy Efficient Technologies for **Integrated Steel Works**

Mexico:

Peru:

◆REDD+

◆CCS (Carbon dioxide Capture and Storage)

JCM Feasibility Studies, MRV Applicability Verification Studies and Demonstration Projects by METI & NEDO in FY2014

- ◆→ METI's FSs for Policy Recommendation
- → NEDO's FSs for Project Exploration / Development
- ▲ → NEDO's MRV Applicability Verification Studies
- → NEDO's Demonstration Projects

XNEDO's FSs and Demonstration Projects for FY2014 are in screening process

Mongolia:

- High efficiency and low loss power transmission and distribution system (since FY2013)
- FA utilization for Cement manufacture process

Bangladesh:

▲CCGT power generation (since FY2013)

Saudi Arabia:

◆Solar power generation and gas-fired combined power generation

Myanmar:

Energy saving at supermarket

Lao PDR:

◆Energy efficiency container date center

Vietnam:

Malaysia:

Maldives:

Woody biomass

power generation

- ◆Energy efficiency technologies for steel industry
- ◆Low carbon technology application for eco-city
- ◆Energy efficiency operation for ships
- Installing LED lighting into Fishing vessel
- Energy efficient paper making process
- Energy saving by inverter air conditioner optimum operation at National Hospital (since FY2013)
- Energy saving by BEMS optimum operation at Hotel (since FY2013)
- ▲ Ecological convenience store

Cambodia:

- ◆Energy efficiency LED street light
- Hybrid(solar+diesel) power generation in SEZ(Special Economic Zone)

Costa Rica:

◆Energy efficiency technology in

soda and chlorine production

commerce and industrial sector

Geothermal power plant for IPPs

Ion exchange membrane in caustic

Energy efficiency beverage and food

Mega Solar power generation

Chile:

factory

Mexico:

- ◆Energy efficiency power generation
- Rooftop solar power generation

Kenya:

◆Geothermal power generation

Ethiopia, Kenya:

- ◆Mega-solar power generation and Hydro power generation
- Rural electrification without power grid

◆Medium-size wind power generation

Ethiopia:

Bioethanol from molasses

Thailand:

- ◆Energy efficiency technologies for steel industry
- ◆Bio-coke
- High efficiency small boiler

Indonesia:

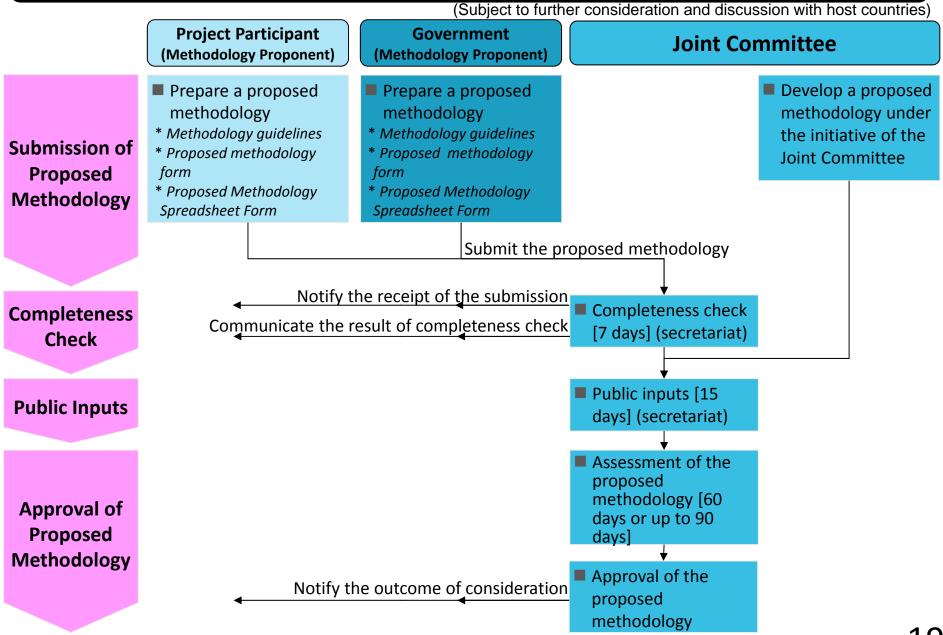
- ◆Energy efficiency for mobile communication system ◆Low carbon waste treatment
- ◆LNG supply chain development and energy conversion ◆REDD+ (6 projects)
- Energy saving by operation at material factory
- Energy efficiency at data center CCS
- Energy saving by optimum operation at Oil factory (since FY2013)
- Utility facility operation optimization technology into Oil factory (since FY2013)
- Thin-Film solar power plant (since FY2013)

Technical Details Currently Considered for the JCM

Necessary documents for the JCM

			Rules and Guidelines
		√	Rules of Implementation
		✓	Project Cycle Procedure
Overall		✓	Glossary of Terms
		✓	Guidelines for Designation as a Third-Party
			Entity (TPE guidelines)
Joint Committee		✓	Rules of Procedures for the Joint
			Committee (JC rules)
Methodology		✓	Guidelines for Developing Proposed
			Methodology (methodology guidelines)
	Developing	✓	Guidelines for Developing Project Design
Project Procedures	a PDD		Document and Monitoring Report (PDD
	Monitoring		and monitoring guidelines)
libecautes	Validation	√	Guidelines for Validation and Verification
	Verification		(VV guidelines)

Methodology Development Procedure of the JCM



Registration & Issuance Procedure of the JCM (1/2) (Subject to further consideration and discussion with host countries) **Project Participant Third-Party Entity Joint Committee** Government Complete a PDD and develop a monitoring plan Submit the draft PDD and MoC, and request for validation * PDD form and Monitoring **Development** and public inputs Spreadsheet * PDD and monitoring of PDD quidelines ■ Complete an MoC Form * MoC Form Notify the receipt of the submission Public inputs[30 days] **Validation** ■ Validate a project (secretariat) Prepare a validation Validation and verification can report be conducted * Validation and verification simultaneously quidelines * Validation report form or separately. Submit the validation report ■ Complete a Submit registration request form, the validated PDD and MoC, and the validation report and request for registration registration request form * Registration request form Registration Notify the receipt of the request ■ Completeness check [7 days] (secretariat) Notify the conclusion Notify the registration ■ Registration Notify the registration

Registration & Issuance Procedure of the JCM (2) (Subject to further consideration and discussion with host countries) **Project Participant Third-Party Entity Joint Committee** Government Conduct monitoring ■ Prepare a monitoring Submit the monitoring Monitoring report for verification report * PDD and monitoring *quidelines* * Monitoring report sheet Verify emission Verification reductions Validation and Prepare a verification verification can report be conducted * Validation and simultaneously Verification guidelines or separately. * Verification report form Submit the verification report Determine allocation Request for notification for issuance of credits Complete a credit Notify the receipt of issuance request the request Completeness check form [7 days] (secretariat) Issuance * Credit issuance request form Decision on notification of Notify the result Notify the amount of credits amount of credits to to be issued be issued

Issuance of credits

Notify the issuance

Rules of Procedures for the Joint Committee

(Subject to further consideration and discussion with host countries)

Members

- ➤ The Joint Committee (JC) consists of <u>representatives from both Governments</u>.
- Each Government designates members, which may not exceed [10].
- The JC has two Co-chairs to be appointed by each Government (one from the host country and the other from Japan). Each Co-Chair can designate an alternate from members of the JC.

Decision making in the JC

- > The JC meets no less than once a year and decision by the JC is adopted by consensus.
- > The JC may adopt decisions by electronic means in the following procedure:
 - (a) The proposed decisions are distributed by the Co-Chairs to all members of the JC.
 - (b) The proposed decision is deemed as adopted when,
 - i) no member of the JC has provided negative assertion within [20] calendar days after distribution and both Co-Chairs have made affirmative assertion, or
 - ii) all members of the JC have made affirmative assertion.
- ➤ If a negative assertion is made by one of the JC members, the Co-Chairs take into account the opinion of the member and take appropriate actions.
- > The JC may hold conference calls to assist making decisions by electronic means.

External assistance

> The JC may establish panels and appoint external experts to assist part of its work.

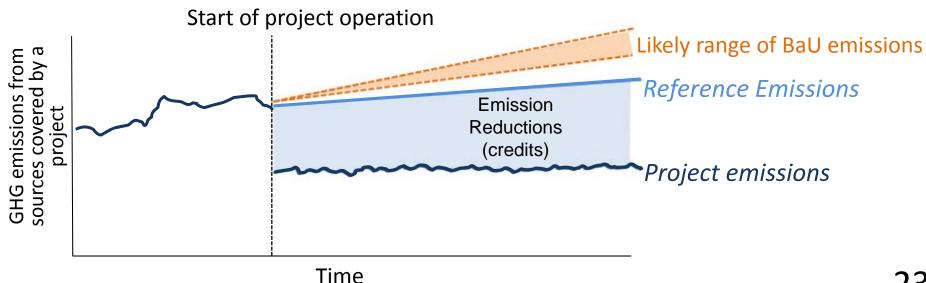
Languages: English **Secretariat:** The secretariat services the JC.

Confidentiality: Members of the JC, Secretariat, etc. respect confidentiality.

Record of the meeting: The full text of all decisions of the JC is made publicly available.

Basic Concept for Crediting under the JCM

- In the JCM, emission reductions to be credited are defined as the difference between "reference emissions" and project emissions.
- The reference emissions are calculated below business-as-usual (BaU) emissions which represent plausible emissions in providing the same outputs or service level of the proposed JCM project in the host country.
- This approach will ensure a net decrease and/or avoidance of GHG emissions.

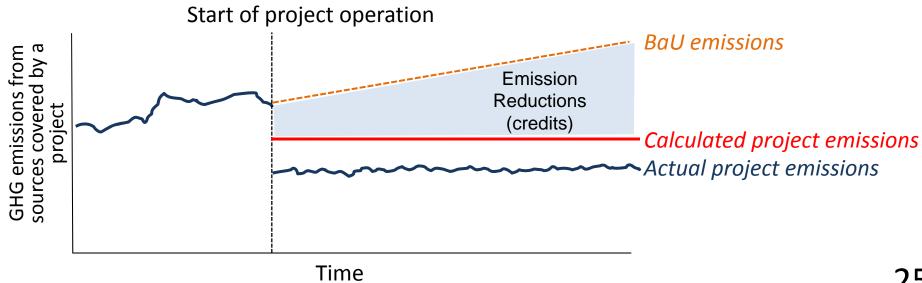


Crediting Threshold

- Reference emissions are calculated by multiplying a "<u>crediting threshold</u>" which is typically expressed as GHG emissions per unit of output with total outputs.
- A crediting threshold should be established *ex ante* in the methodology <u>applicable for the same project type in the host country</u>. It should also be established conservatively in order to calculate reference emissions <u>below BaU emissions</u>.
- This standardized approach will greatly <u>reduce the burden</u> of analyzing many hypothetical scenarios for demonstrating additionality of the proposed project such as under the CDM, <u>while increasing transparency</u> for calculating GHG emission reductions.

Addendum: ways to realize net reduction

- A net decrease and/or avoidance of GHG emissions can be realized in alternative way, instead of calculating the reference emissions below BaU emissions.
- <u>Using conservative default values in parameters to calculate project</u> emissions instead of measuring actual values will lead calculated project emissions larger than actual project emissions.
- This approach will also ensure a net decrease and/or avoidance of GHG emissions, as well as reduce burdens of monitoring.



JCM Methodology

- Key Features of the JCM methodology
 - The JCM methodologies are designed in such a way that project participants can use them easily and verifiers can verify the data easily.
 - In order to reduce monitoring burden, default values are widely used in a conservative manner.
 - Eligibility criteria clearly defined in the methodology can reduce the risks of rejection of the projects proposed by project participants.

Eligibility criteria	 A "check list" will allow easy determination of eligibility of a proposed project under the JCM and applicability of JCM methodologies to the project.
Data (parameter)	 List of parameters will allow project participants to determine what data is necessary to calculate GHG emission reductions/removals with JCM methodologies. Default values for specific country and sector are provided beforehand.
Calculation	 Premade spreadsheets will allow GHG emission reductions/removals to be calculated automatically by inputting relevant values for parameters, in accordance with methodologies.

Basic concept of Eligibility criteria in JCM methodology

(Subject to further consideration and discussion with host countries)

The eligibility criteria in each JCM methodology is established, in order to reduce emissions by:

- ➤ accelerating the deployment of <u>low carbon technologies</u>, <u>products and services</u>, <u>which will contribute to achieving net</u> <u>emission reductions</u>;
- <u>facilitating the nationally appropriate mitigation actions</u> (NAMAs) in host countries.



- Both Governments determine what technologies, products, etc should be included in the eligibility criteria through the approval process of the JCM methodologies by the Joint Committee.
- 2. <u>Project participants can use</u> the list of approved JCM methodologies when applying for the JCM project registration.

Eligibility Criteria of the JCM

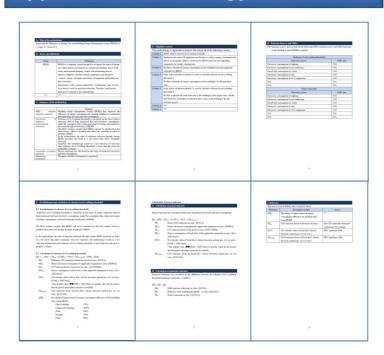
- Eligibility criteria in JCM methodologies contain the following:
 - 1. The requirements for the project to be registered as a JCM project. <Basis for the assessment of validation and registration of a proposed project>
 - 2. The requirements for the project to be able to apply the JCM methodology. <same as "applicability condition of the methodology" under the CDM>
- Examples of eligibility criteria 1.
 - Introduction of <u>xx</u> (products/technologies) whose design efficiency is above <u>xx</u> (e.g. output/kWh) <*Benchmark Approach*>
 - Introduction of <u>xx</u> (specific high efficient products/technologies, such as air conditioner with inverter, electric vehicles, or PV combined with battery) <*Positive List Approach*>
- Examples of eligibility criteria 2.
 - Existence of historical data for <u>x</u> year(s)
 - ightharpoonup Electricity generation by \underline{xx} (e.g. PV, wind turbine) connected to the grid
 - Retrofit of the existing boiler

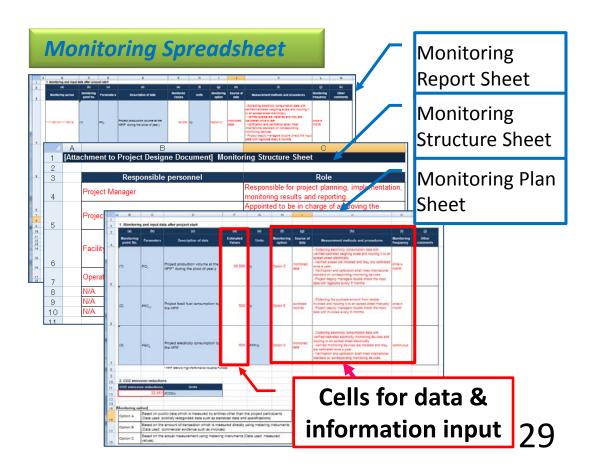
Overview of JCM Methodology, Monitoring Plan and Monitoring Report

(Subject to further consideration and discussion with host countries)

- JCM methodology consists of the followings.
 - ➤ Approved Methodology Document
 - ➤ Monitoring Spreadsheet
 - Monitoring Plan Sheet (including Input Sheet & Calculation Process Sheet)
 - ➤ Monitoring Structure Sheet
 - ➤ Monitoring Report Sheet (including Input Sheet & Calculation Process Sheet)

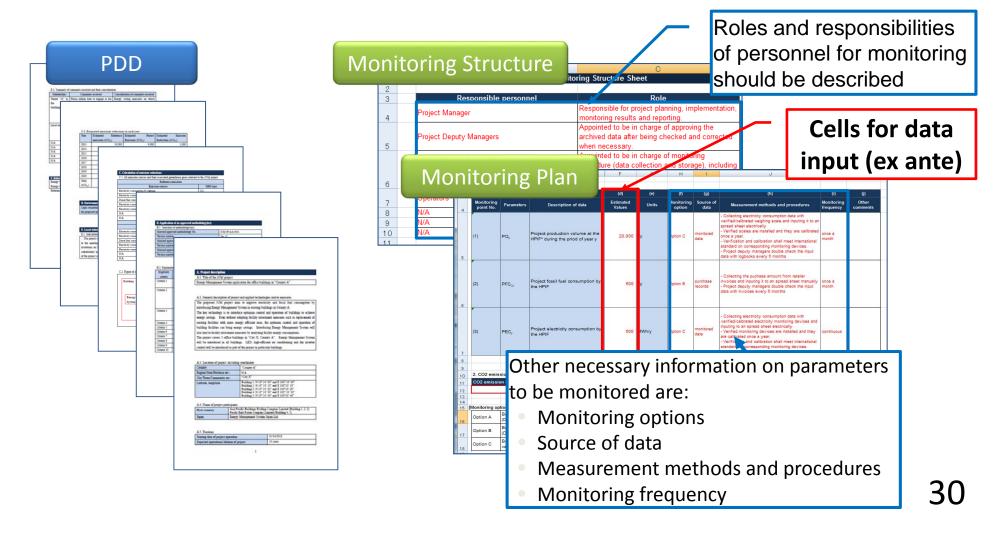
Approved Methodology Document





PDD and Monitoring Plan

- Developing a Project Design Document (PDD) and a Monitoring Plan
 - >A PDD form should be filled in with information of the proposed project.
 - A Monitoring Plan consists of Monitoring Plan Sheet and Monitoring Structure Sheet, and it should be filled in as well.



Possible Contents of the JCM PDD

A. Project description

(Subject to further consideration and discussion with host countries)

- A.1. Title of the JCM project
- A.2. General description of project and applied technologies and/or measures
- A.3. Location of project, including coordinates
- A.4. Name of project participants
- A.5. Duration
- A.6. Contribution from developed countries

B. Application of an approved JCM methodology(ies)

- B.1. Selection of JCM methodology(ies)
- B.2. Explanation of how the project meets eligibility criteria of the approved methodology

C. Calculation of emission reductions

- C.1. All emission sources and their associated greenhouse gases relevant to the JCM project
- C.2. Figure of all emission sources and monitoring points relevant to the JCM project
- C.3. Estimated emissions reductions in each year

D. Environmental impact assessment

E. Local Stakeholder consultation

- E.1. Solicitation of comments from local stakeholders
- E.2. Summary of comments received and their consideration

F. References

Annex

Approved Methodology Spreadsheet consists of Monitoring Plan Sheet, Monitoring Structure Sheet and Monitoring Report Sheet, and it shall be attached to the PDD. 31

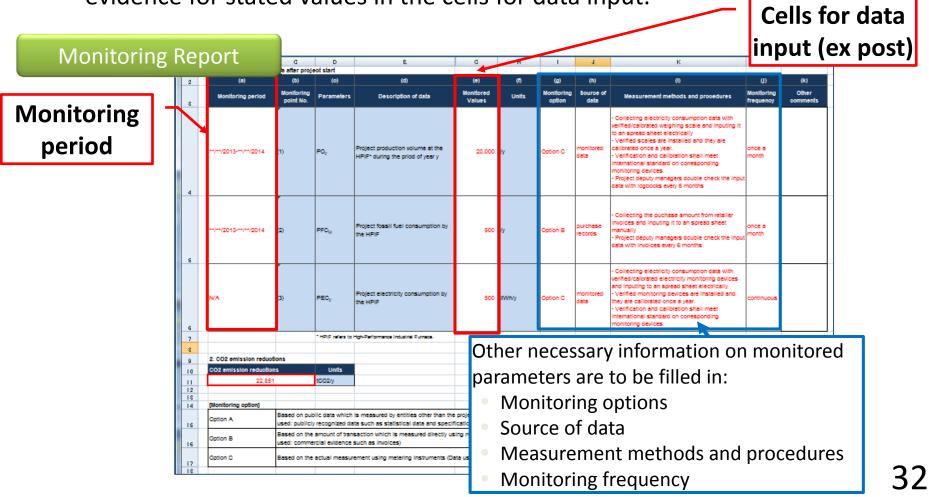
Monitoring Report

Making a Monitoring Report

(Subject to further consideration and discussion with host countries)

A Monitoring Report should be made by filling cells for data input (ex post) in the Monitoring Report Sheet with monitored values.

➤ Project participants prepare supporting documents which include evidence for stated values in the cells for data input.

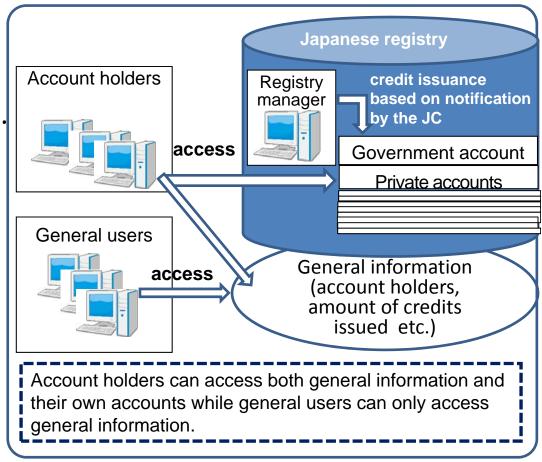


JCM Registry

Establishment & operation

- A registry will be established by each side (RoI (draft) para13 (b)).
- The registries need to share
 "Common specifications", e.g.,
 - functions (e.g. issuance, retirement, holding, cancelation of credits)
 - account type (e.g. holding account, government holding account, cancellation account, and retirement account)
 - and retirement account)

 rules of serial number of the credit
 - information de anima
 - information sharing
- •Japan plans to establish its registry and start operation in FY 2015.
- •The host countries will also establish their own registry.



JCM Website

Contents

- General information page
- •Individual JCM Partner countries-Japan page

Function

- •Information sharing to the public, e.g.,
- the JC decisions,
- rules and guidelines,
- methodologies,
- projects,
- call for public inputs/comments,
- status of TPEs, etc.
- •Internal information sharing for the JC members, e.g.,
- File sharing for electric decisions by the JC



Image of the general information page <URL: https://www.jcm.go.jp/>

