二国間オフセット・クレジット制度 (Joint Crediting Mechanism(JCM) /Bilateral offset Credit Mechanism(BOCM)) の最新動向

平成25年2月 日本国政府

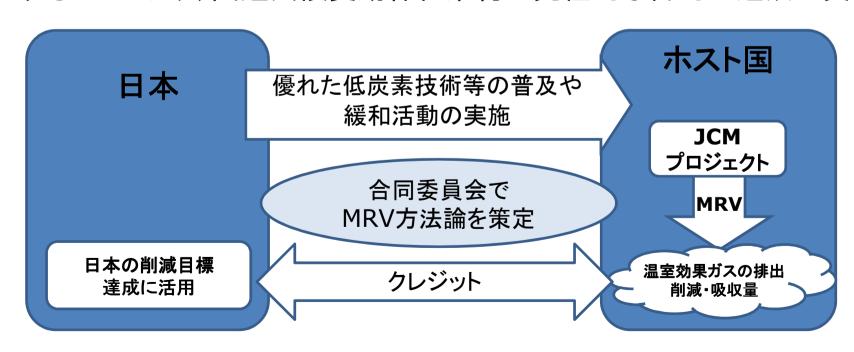
低炭素成長の必要性

- ◆ 気候変動問題に効果的に対処するためには、先進国・途上国の双方が、技術・ 市場・資金を活用して「低炭素成長」を達成することが必要。
- ◆ そのためには、温室効果ガスの排出を削減する高度な低炭素技術・製品として、 再生可能エネルギー、高効率発電、省エネ家電、低燃費自動車、工場省エネ、 等の普及を促進していくことが必要。
- ◆ こうした技術・製品とシステム・サービス・インフラ等を適切に組み合わせ、低炭素社会を実現していくことが必要。

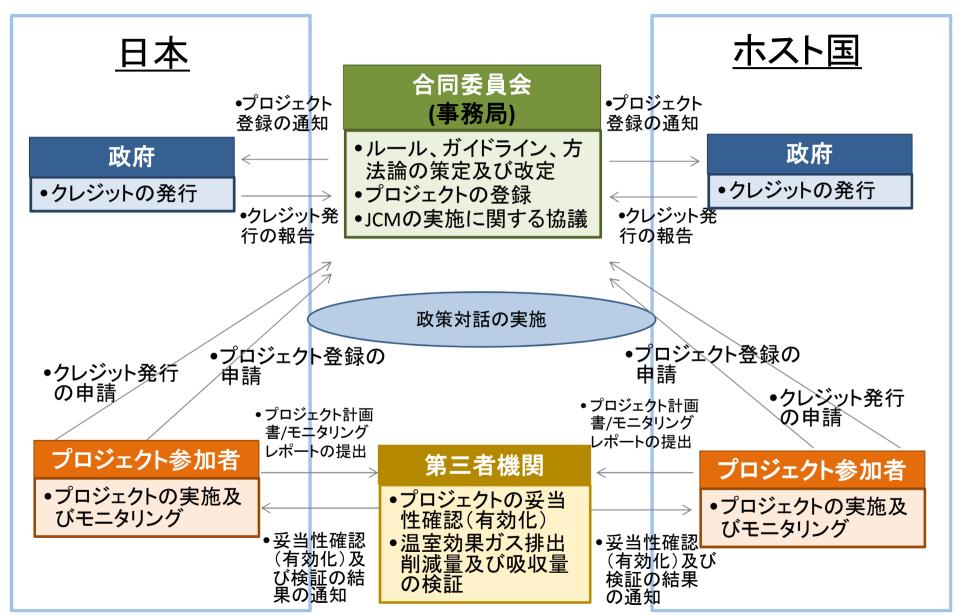


二国間オフセット・クレジット制度の基本概念

- ▶ 途上国への優れた温室効果ガス削減技術・製品・システム・サービス・インフラ等の普及や緩和活動を加速し、途上国の持続可能な開発に貢献。
- ▶ 日本からの温室効果ガス排出削減・吸収への貢献を、測定・報告・検証 (MRV)方法論を適用し、定量的に評価し、日本の削減目標の達成に活用。
- ➤ CDMを補完し、地球規模での温室効果ガス排出削減・吸収行動を促進 することにより、国連気候変動枠組条約の究極的な目的の達成に貢献。



二国間オフセット・クレジット制度のスキーム図



合同委員会及び各国政府の役割

- ▶合同委員会(JC) は、両国政府の代表者により構成される。
- ▶合同委員会は、本制度実施に必要となるルールとガイドライン等を策定する。
- ▶合同委員会は、提案された方法論を承認もしくは却下し、 同時に方法論の策定も行う。
- ▶合同委員会は、第三者機関 (TPEs)を指定する。
- ▶合同委員会は、第三者機関により妥当性確認が実施されたプロジェクトの登録について決定する。
- ▶各国政府は、登録簿を設置し、運用する。
- ▶合同委員会からのクレジット発行通知に基づき、各国政府はクレジットを登録簿に発行する。

二国間オフセット・クレジット制度のアプローチ

- ▶ 本制度は、以下を考慮して設計され、実施される。
 - (1)堅固な方法論、透明性、環境十全性を確保する
 - (2)簡易で実用的な制度を維持する
 - (3)地球規模の温室効果ガス排出削減・吸収を促進する 具体的な行動を推進する
 - (4)温室効果ガスの排出削減・吸収量の二重計上を回避するために、本制度の下で登録された緩和プロジェクトを他の国際的な緩和メカニズムに重複して使用することを防止する

二国間オフセット・クレジット制度の特徴

- (1)本制度はクレジットが取引不可能な制度として開始する。
- (2)両国政府は本制度の実施状況を踏まえ、取引可能なクレジットを発行する制度へ移行するため二国間協議を継続的に行い、出来るだけ早期に結論を得る。
- (3)本制度が取引可能なクレジットを発行する制度へ移行した 後に、途上国の適応努力の支援ための具体的な貢献を 目指す。
- (4)本制度は国連気候変動枠組条約(UNFCCC)の下での新たな国際枠組みが発効されるまでの期間を対象とする。

二国間オフセット・クレジット制度とCDMのプロジェクトサイクル

本制度

<各プロセスにおける主な活動主体>

CDM

プロジェクト参加者/各国政府 また合同委員会により開発可能

方法論案の提出

プロジェクト参加者

合同委員会

提案された方法 論の承認

CDM理事会

プロジェクト参加者

PDDの作成

プロジェクト参加者

第三者機関(TPEs)

妥当性確認

指定運営機関(DOEs)

合同委員会

登録

CDM理事会

プロジェクト参加者

モニタリング

プロジェクト参加者

第三者機関(TPEs)

検証

指定運営機関(DOEs)

合同委員会が発行量を決定 各国政府がクレジットを発行

クレジット発行

CDM理事会

CDMと比較した、二国間オフセット・クレジット制度の主な特徴

(ホスト国とのさらなる検討・協議により変更の可能性あり)

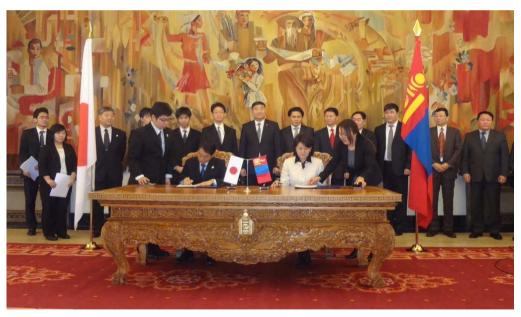
	二国間オフセット・クレジット制度	CDM
ガバナンス	- "分権的" 構造 (各国政府、合同委員会)	- "中央集権的"構造 (京都議定書締約国会合、CDM 理事会)
対象セクター /プロジェクト の対象範囲	- より広範な対象範囲	- 特定プロジェクト・セクターは実施するのが 困難 (例: 超々臨界 石炭火力発電)
プロジェクトの 妥当性確認	- DOEsに加えて、ISO14065 認証機関が実施可能 ・提案されたプロジェクトが、客観的に 判断可能な適格性要件に合致して いるかを確認	- 指定運営機関(DOEs)のみ実施可能 - 仮想のシナリオに対して、提案された各プロジェクトの追加性を評価
排出削減量の 計算	- スプレッドシートが提供される - モニタリングを行うパラメータに制約 がある場合、デフォルト値を保守的 に用いる	- 複数の計算式が掲載されている - パラメーターの計測に関する厳格な要件
プロジェクトの 検証	- プロジェクトの妥当性確認を実施した機関が検証を行うことが可能 - 妥当性確認及び検証を同時に実施可能	- 基本的には妥当性確認を実施した機関は、 検証を実施できない - 妥当性確認及び検証は別々に実施されな ければならない

二国間オフセット・クレジット制度のロードマップ

2011年度 2012年度 2013年度 本制度の運用 二国間文書 合同委員会の設立 政府間協議 への署名 各種ルールやガイドライン類の策定 実現可能性調査 本制度の下で実施が見込まれる事業・活動の発掘 実現可能性調査 MRV方法論の開発 MRV モデル実証調査 考案されたMRV方法論案を実稼働案件に適用 MRV方法論を活用しつつ改善 MRV方法論の確立 本制度のモデル事業 本制度の運用を開始しつつ、制度設計を さらに改善 能力開発(キャパシティ・ビルディング) 「様々なアプローチのための枠組み」における国連交渉

政府間協議

- ▶日本は、2011年から発展途上国(モンゴル、バングラデシュ、インドネシア、ベトナム等)と本制度に関する協議を行ってきており、関心をもつ国々には同様の意見交換を実施。日本は本制度に関心をもつ国々との協議や意見交換を継続していく予定。
- ▶日本とモンゴルは本制度に係る二国間文書に署名(署名を行った最初の案件)。



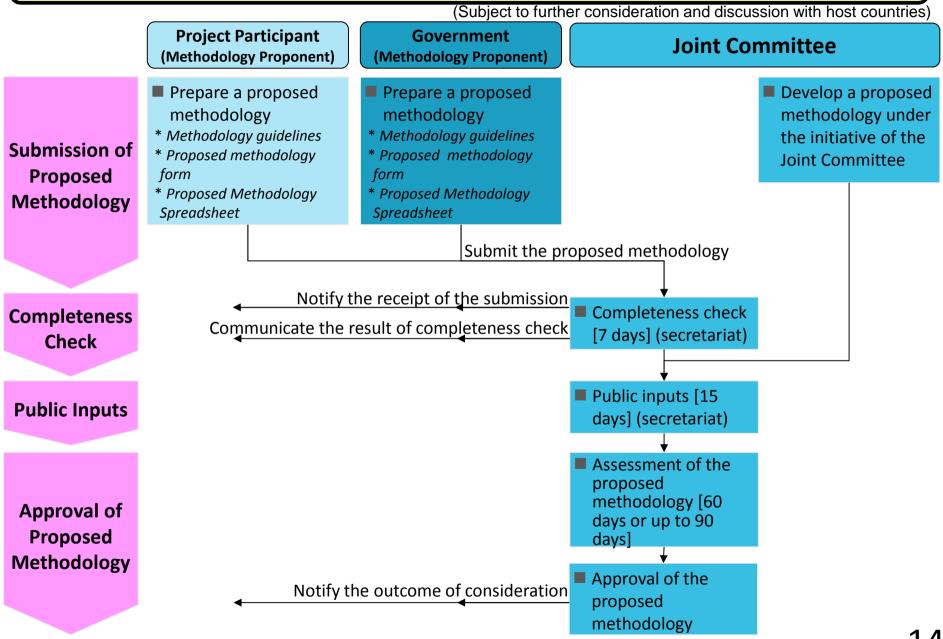
2013年1月8日、ウランバートルにおいて、清水武則駐モンゴル日本国特命全権大使とサンジャースレン・オヨーン モンゴル国自然環境・グリーン開発大臣との間で、本制度に関する二国間文書の署名が行われた。

Technical Details Currently Considered for the JCM

Necessary documents for the JCM

			Rules and Guidelines
			Rules of Implementation
		✓	Project Cycle Procedure
Overall		✓	Glossary of JCM terms
		✓	Standards for designation as a Third-Party
			Entity
Joint Committee		✓	Rules of Procedures for the Joint
			Committee
Methodology		✓	Guidelines for Developing JCM Proposed
			Methodology (methodology guidelines)
	Developing	✓	Guidelines for Developing the JCM Project
	a PDD		Design Document, Monitoring Plan and
Project	Monitoring		Monitoring Report (PDD and monitoring
Procedures	Monitoring		guidelines)
	Validation		Validation and Verification Guidelines
	Verification		validation and verification Guidelines

Methodology Development Procedure of the JCM



Note: Asterisk (*) indicates documentation relevant for each step of the procedure

Project Cycle 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 * PDD form and Approved **Development** Methodology Spreadsheet Submit the PDD and MoC, and request for validation and public inputs * PDD and monitoring quidelines of PDD Complete an MoC * Form for the "Modalities of communication statement" 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, and the validated PDD and MoC Complete a registration request Request for registration 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 5

Project Cycle Procedure of the JCM (2/2) (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 form 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 amount of credits Notify the result to be issued amount of credits to be issued Notify the issuance Issuance of credits

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 elects its two Co-chairs annually, 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 can <u>adopt decisions by electronic means</u> 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 the 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 at least one of the JC members, the Co-Chairs take into account the opinions of JC members and take appropriate actions.
- > The JC may hold conference calls to assist making decisions by electronic means.

External assistance

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

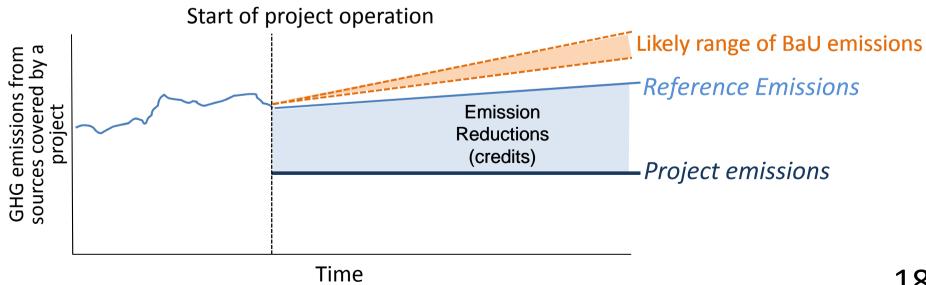
Languages: English **Secretariat:** The secretariat shall service the JC.

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

Record of the meeting: All decisions of the JC will be 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.

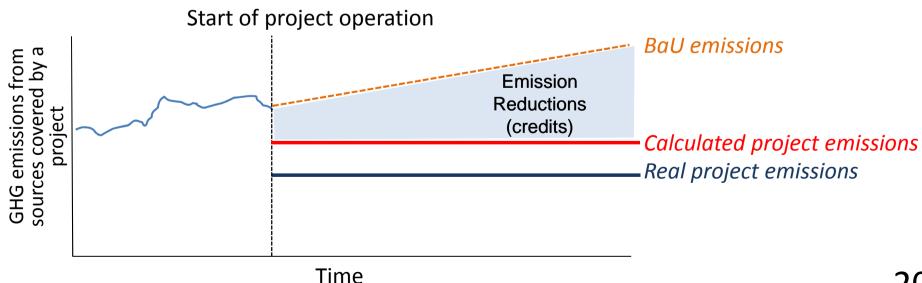


Crediting Threshold

- Reference emissions are calculated by multiplying a "crediting threshold" which is typically expressed as GHG emissions per unit of output by 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, whereas <u>increase 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.
- Using conservative default values in parameters to calculate project emissions instead of monitoring real values, will lead calculated project emissions larger than real 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 inform project participants of 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 help calculate GHG emission reductions/removals 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 should be 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>;
- facilitating the nationally appropriate mitigation actions (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, similar to <u>positive list</u>, when applying for the JCM project registration.

Eligibility Criteria of the JCM

- Eligibility criteria in JCM methodologies shall contain the following:
 - 1. The requirements for <u>the project in order to be registered as a JCM project</u>. *<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)
 - \triangleright Electricity generation by <u>xx</u> (e.g. PV, wind turbine) connected to the grid
 - Retrofit of the existing boiler

Image of Eligibility criteria

- ➤ Simple check list is provided for project participants to determine the eligibility of a proposed project under the JCM and applicability of the methodology.
- > All the criteria have to be met in order to apply a methodology.

Example: Building energy management system

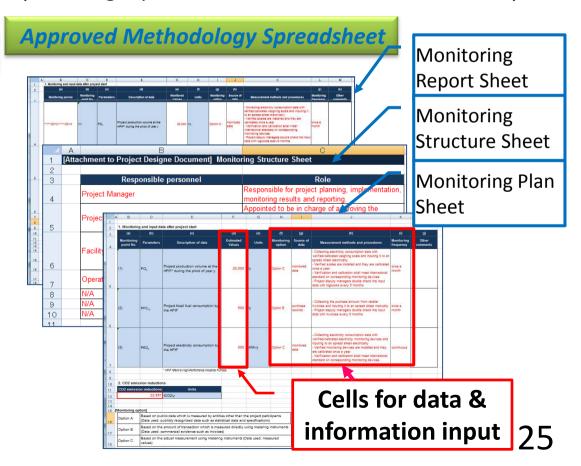
	Eligibility	Check
Criteria 1	• Electronically controlled building energy management system is installed in the planned project.	\checkmark
Criteria 2	 Building energy management system installed in the planned project is designed for optimal operational control of facilities and equipments to reduce energy consumption by taking interior conditions into account. 	\checkmark
Criteria 3	 Regularly scheduled feed back (at least once in 6 months) to enhance system outcome is provided by the system provider based on a contract with its beneficiary. 	\checkmark
Criteria 4	 Buildings in which building energy management system is installed are in existence of longer than 5 years at the time of system installation. 	\checkmark

Overview of JCM Methodology, Monitoring Plan and Monitoring Report

- (Subject to further consideration and discussion with host countries)

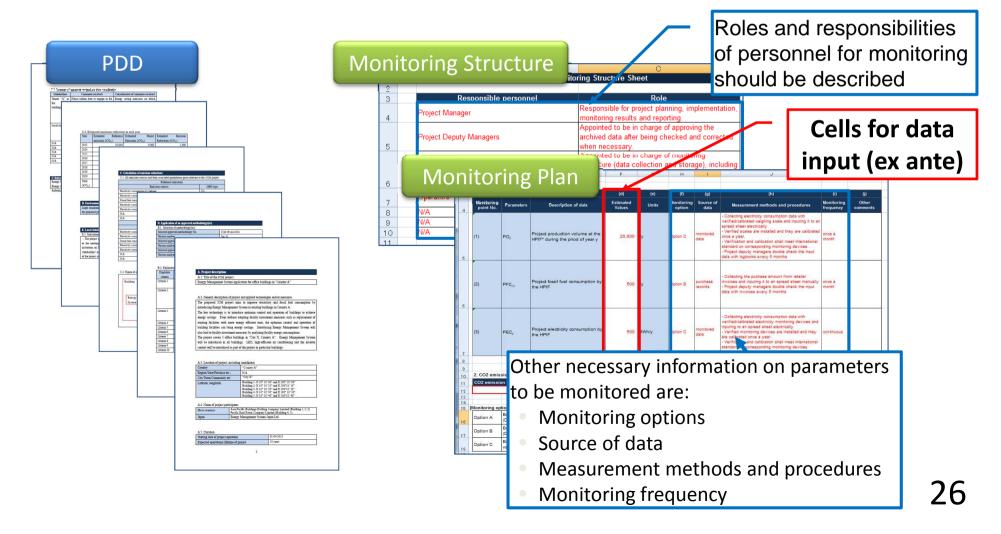
 JCM methodology consists of the followings.
 - ➤ Approved Methodology Document
 - >Approved Methodology Spreadsheet
 - ➤ Monitoring Plan Sheet (including Input Sheet & Calculation Process Sheet)
 - ➤ Monitoring Structure Sheet
 - ➤ Monitoring Report Sheet (including Input Sheet & Calculation Process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



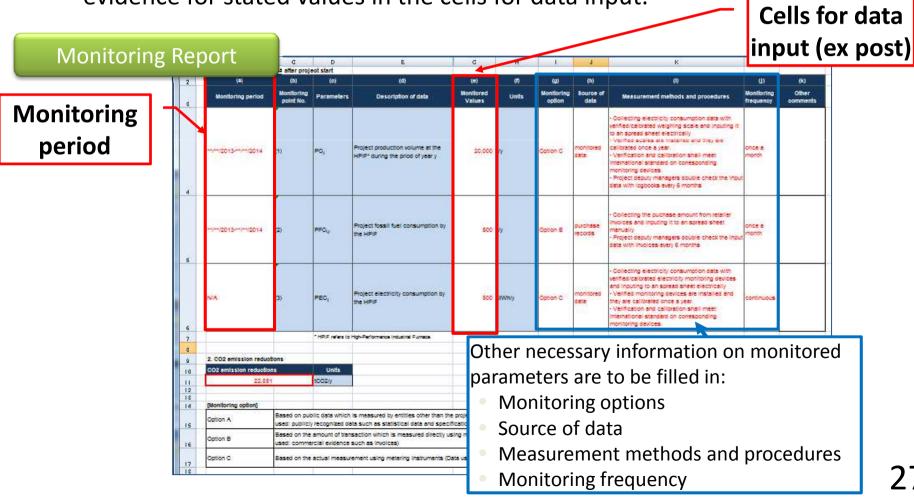
Monitoring Report

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.



Possible Contents of the JCM PDD

(Subject to further consideration and discussion with host countries)

A. Project description

- 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

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 relevant to the JCM project
- C.3. Estimated emissions reductions in each year
- D. Environmental impact assessment
- E. Local Stakeholder consultation
- F. References

Annex

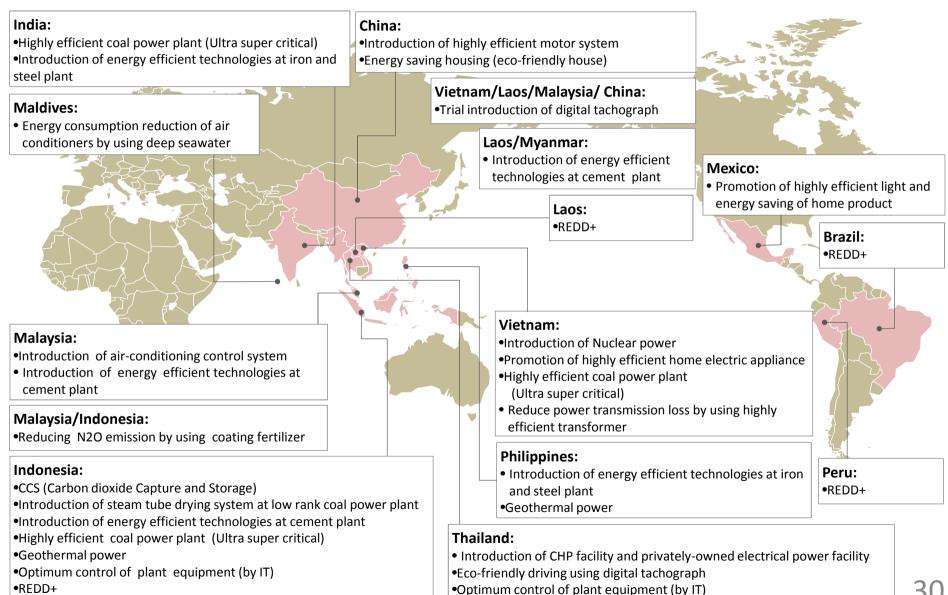
Approved Methodology Spreadsheet consists of Monitoring Plan Sheet, Monitoring Structure Sheet and Monitoring Report Sheet, and it shall be attached to the PDD. 28

References

- Feasibility Studies
- **◆**Capacity Building

JCM Feasibility Studies (FSs) by METI in FY2010

30 projects were selected (13 countries)



JCM Feasibility Studies (FSs) by METI & NEDO in FY2011

50 projects were selected (18 countries)

- (Black) → METI's FSs for Policy Recommendation (10 projects)
- (Yellow) → NEDO's FSs for Project Exploration / Development (40 projects)

Russia:

 Recovery & effective utilization of associated gas

India/Turkey:

•IGCC (Integrated coal Gasification Combined Cycle)

India:

- •Highly efficient coal power plants(Ultra Super Critical)
- •Development of Energy Saving Technology such as CDQ
- Efficiency Enhancement Project of Coal-fired Thermal **Power Plant**
- Highly efficient coal power plants(Ultra Super Critical)
- Energy Efficient Technologies for steel works (3 project)
- Solar Energy Technology
- Run-of-river micro hydro power project
- Highly efficient server in Data center

Vietnam:

- •Highly Efficient Air Conditioner
- •Waste heat utilization in cement plant
- •Renewal/consolidation of servers of datacenters
- Highly efficient coal power plants (Ultra Super Critical)
- Coal mine methane and ventilated air methane
- Highly Efficient Energy Conservation Systems

Mexico:

 Manufacturing process of caustic soda & chlorine products through brine electrolyzation

Poland:

Smart grid technology

Maldives:

 Air conditioners by using deep sea water

Mozambique:

BDF (Bio Diesel Fuel) & PV (Photovoltaic) **Hybrid Power** Generation System

Bangladesh:

 Newly-constructed CCGT power generation

Cambodia:

•REDD+

Malaysia:

 Home Solar Power **Generation System**

Malaysia/Indonesia:

•Reducing N2O emission by using coating fertilizer

Vietnam/Indonesia/ **South Africa:**

 Introduction of highly-efficient Distribution Transformer introduction

Vietnam/Thailand:

•Green Convenience Stores

Vietnam/Laos/Malaysia/ China:

Trial introduction of digital tachograph

Indonesia:

Next-generation (zero-emission)

air conditioning system utilizing

Thailand:

solar heat

- •Highly efficient solar cells in un-electrified areas
- •REDD+ (3 project)
- •Introduction of energy efficient technologies at cement plant
- •Newly-constructed geothermal power generation
- Introduction of steam tube drying system at low rank coal power plant
- SNG project (Substitute Natural Gas)
- Biomass Boiler Power Generation Project
- CCS (Carbon dioxide Capture and Storage)
- Small Hydroelectric Generation
- Eco-shipping for Coastal Cement Tanker
- •Flash and Binary Geothermal Power Generation Plants
- Energy Consumption Optimization at Facilities using IT
- Optimum control of plant equipment (by IT)
- Hydro power project renovation

South Africa:

Kenya:

Energy Efficient Technologies for steel plant

Utilization of Solar energy at hotel lodge

Highly efficient gas turbine

Djibouti, Ethiopia, Rwanda:

Geothermal power generation

JCM Feasibility Studies (FSs) by METI & NEDO in FY2012

Introducing Heat Recovery

54 projects were selected (19 countries)

Mongolia:

Myanmar:

Run-of-river Micro

Hydro Power Generation

•Highly Efficient Transmission and Coal Power Plant

Thailand:

Heat Pumps

- (Black) → METI's FSs for Policy Recommendation (33 projects)
- (Yellow) → NEDO's FSs for Project Exploration / Development (21 projects)

Kazakhstan:

Coal-fired Power Generation

Bangladesh:

CCGT power generation

Maldives:

 Air conditioners by using deep sea water

Diibouti, Ethiopia:

Geothermal Power Generation

Kenya:

•Hybrid Mini Grids Using Renewable Energy

Mozambique:

BDF (Bio Diesel Fuel) &PV (Photovoltaic) **Hvbrid Power Generation System**

South Africa:

•Energy Saving project at cement industry

Mauritius & etc:

Multi-Stage Deep Seawater

Utilization System

Thailand, Vietnam:

Cambodia:

Energy Saving Systems at

Commercial Facilities

 Green Convenience Stores •Micro-Scale Hydro Power Generation

Vietnam, Myanmar,

Malaysia/Indonesia:

using coating fertilizer

Highly Efficient Coal Power

Plants(Ultra Super Critical)

•Reducing N2O emission by

India:

- Energy Efficient Technologies for Integrated Steel Works
- •Run-of-river micro hydro power project
- •Energy Efficient Air Conditioners (HFC 32)
- •Coal Drying Technology (Low Temperature Waste Heat Recovery)
- Highly Efficient Servers at Data Centers
- Highly Efficient Coal Power Plants(Ultra super critical)
- Energy Efficient Technologies for Integrated steel works

Vietnam:

- •Small-Medium Hydropower Generation
- Highly Efficient Energy Conservation Systems
- •Highly Efficient Air Conditioner
- •Energy Efficiency Technologies for Integrated steel works
- Promotion of Water-Saving Showerheads
- Disseminating and Promoting Electric Motorcycles
- Highly Efficient Coal Power Plants(Ultra Super Critical)

Philippines:

- •Electric Three-Wheeled Vehicles
- •Flash and Binary Geothermal Power Generation

Malaysia:

•Erea Energy Network Construction and **Energy Management System (EMS)**

Indonesia:

Mexico:

Introduction of Cogeneration Facilities

Thailand, Vietnam, Malaysia:

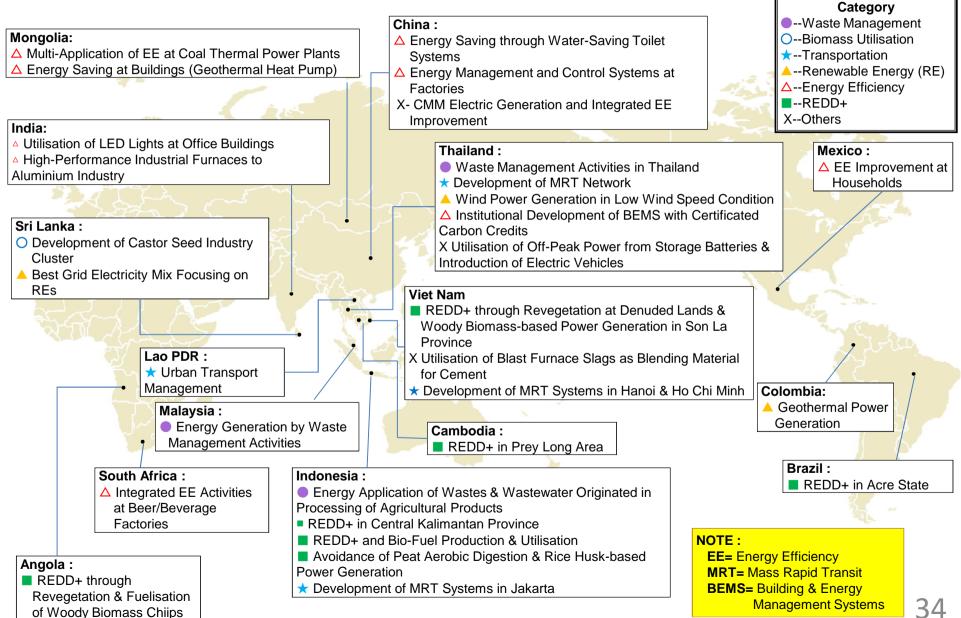
- Renewable Energy Hybrid System
- Utility Facility Operation Optimization Technology
- •Replacement Project of the Existing Thermal Power Plants
- Rehabilitation of Hydro Power Plants
- •REDD+ (5 projects)
- Optimum control of plant equipment (by IT)
- Wind-Power Generation(by EMS)
- Mega-Solar Power Plants Using Thin-Film Solar Cells
- Developing Technology of Biodiesel Fuel (BDF)
- SNG project (Substitute Natural Gas)
- CCS (Carbon dioxide Capture and Storage)
- Biomass Power Generation
- Eco-shipping for Coastal Cement Tanker
- Small Hydro Power Generation
- Geothermal Power Generation
- Low-Rank Coal Fuel Waste Heat Drying Project

MRV Model Projects & Feasibility Studies for JCM by MOEJ

- Global Environment Centre Foundation (GEC) is serving as a secretariat for the MRV Demonstration Studies using Model Projects & Feasibility Studies.
- 25 projects were selected for FY2012.
 - Among those, there are 13 MRV Demonstration Studies using Model Projects which are to develop MRV methodologies, by applying them to the projects under operation. Based upon knowledge and experience gained through these MRV model projects, applicable MRV methodologies will be finalized.
 - ➤ 4 potential CDM projects were also selected, to contribute developing new methodologies, standardaized baselines and equitable geographical distribution of the CDM.
 - ➤ All the relevant information are available at GEC website(http://gec.jp/).
- <u>Taskforces</u> composed of experts for MRV has been set up and the selected MRV model projects / JCM FSs are being conducted under the guidance of the taskforces.
- Host country committees, have been organized for some countries, in order to share mutual perspectives on the JCM, through the discussions in those countries.

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JCM Feasibility Studies by MOEJ in FY2011



MRV Model Projects and Feasibility Studies by MOEJ in FY2012

Mongolia: Bhutan: Replacement of Coal-Fired Boiler by Geo-■ Rural Electrification through Expansion of -- MRV Demonstration Study (DS) Thermal Heat Pump for Heating Electric Grid mainly composed of Hydropower ♦-- JCM Feasibility Study (FS) Upgrading and Installation of High-Efficient ■-- CDM Feasibility Study (FS) Heat Only Boilers (HOBs) Mvanmar: India: ■ Landfill Gas (LFG) Recovery and Bagasse-based Power Generation Utilisation for Electric Power Generation including Waste Heat Utilisation Moldova: Biomass Boiler Heating using Agricultural Waste as Fuel Thailand: Bagasse-based Cogeneration at Sugar Mill Transport Modal Shift through Construction of Mexico: Nepal: ◆ Small-scale Wind Power MRT System ■ Programme to Reduce Non-Renewable Energy Savings through Building Energy Generation with Remote Biomass Consumptions through Management System (BEMS) Monitoring System Introduction of High-Efficient Cook Stoves Waste Heat Recovery System with Cogeneration Introduction of Electronic Gate to International Bangladesh: Trade Port to Improve Port-related Traffic Jam ■ Programme for Integrated Energy Efficiency Improvement of Dyeing Process **Viet Nam** Sri Lanka: Integrated EE Improvement at Beer Factory Biomass-based Thermal Energy ♦ Biogas-based Cogeneration with Digestion of Methane from Generation to Displace Fossil Fuels Colombia: Food/Beverage Factory Wastewater Geothermal Power Lao PDR: Improvement of Vehicle Fuel Efficiency through Introduction of Generation in a Country with ◆ Transportation Improvement through introduction of **Eco-Drive Management System** Suppressed Demand Efficient Buses and Provision of Good Services ♦ REDD+ through Forest Management Scheme, and Biomass-Introduction of Mechanical Biological Treatment based Power Generation using Timber Industry Waste (MBT) of Municipal Solid Waste, and Landfill Gas Viet Nam, and Indonesia (LFG) Capture, Flaring and Utilisation Promotion of Modal Shift from Road-based Transport to MRT System Indonesia: ♦ Solar-Diesel Hybrid Power Generation to Stabilise Photovoltaic Power Generation Cambodia: Prevention of Peat Degradation through Groundwater Methane Recovery and Utilisation from Management, and Rice Husk-based Power Generation Livestock Manure by using Bio-digesters NOTE: EE= Energy Efficiency REDD+ for Conservation of Peat Swamp Forest, and Small-scale Biomass Power Generation with MRT= Mass Rapid Transit Biomass-based Power Generation using Timber Mill Waste Stirling Engine

REDD+ in Tropical Lowland Forest

to Process Indigenous Trees derived from Conserved Forest

Capacity building

- ◆ Capacity building is an important component of JCM.
- ◆Capacity building for JCM will be useful not just for JCM alone, but also for improving CDM, and developing NAMAs.

(Example)

Indonesia

➤ Support for establishing the MRV agency by JICA

Zambia/Bhutan

➤ Support for simplified CDM methodologies for Rural Electrification by JICA

Mekong countries

➤ Policy dialogue and enhanced briefing on JCM for government officials in charge of climate change of five Mekong countries(Cambodia, Lao PDR, Myanmar, Thailand, Viet Nam)

Capacity Building Activities by METI

METI engages in a variety of capacity building activities, such as seminars, expert dispatches, technical experts invitations, joint researches on MRV methodologies, and government-private sector dialogues:

(Purposes)

- ♦ To provide technical know-how necessary to implement GHG emissions reduction projects under the JCM
- ♦ To establish MRV methodologies for the JCM
- ♦ To train experts on MRV methodologies for the JCM
- → To train entities to act as third-party verifiers for the JCM
- → To deepen understanding on the institutional and technical aspects of the JCM both at government and private sectors.

■ Capacity building activities by METI in FY2012

METI

Highly Efficient Transmission and Coal Power Plant (Mongolia)

Eco-friendly driving using digital tachograph (Vietnam)

Reduce power transmission loss by using highly efficient transformer (Vietnam)

Highly efficient coal power plant (Ultra super critical)(Vietnam)

Energy saving project at cement industry (South Africa)

Highly efficient servers at Data Centers (India)

Energy efficient technologies at Steel plant (India)

HIDA (The Overseas Human Resources and Industry Development Association)

High Efficiency Ion-Exchange Membrane Electrolysis Technology (Brazil)

Capacity Building Activities by MOEJ (1/2)

- Starting from 2003, MOEJ has been implementing CDM capacity building programme in Asian countries to develop institutional arrangements for the CDM.
 - ➤ Institute for Global Environmental Strategies (IGES) has been collaborating with Asian countries for capacity building.
- Building on the existing CDM capacity building activities, MOEJ launched capacity building for MRV for the JCM.
 - Such capacity building will be conducted in Asia, Latin America and Africa respectively, to reflect specific circumstances and capacities of those countries for implementing MRV.
- New Mechanisms Information Platform website was established by Overseas Environmental Cooperation Center (OECC) to provide the latest movements and information on the JCM.
 - ➤ URL is http://www.mmechanisms.org/e/index.html

Capacity Building Activities by MOEJ (2/2)

