Update on the Joint Crediting Mechanism (JCM) and Financing Programme and Article 6 of the Paris Agreement

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Facilitating diffusion of leading low carbon technologies through contributions from Japan and evaluating realized GHG emission reductions or removals in a quantitative manner to use them for achieving Japan’s emission reduction target.

Japan will address the high initial cost barrier of introducing advanced low-carbon technologies in the Partner countries (17 countries) through the JCM (GoJ implements several supporting schemes).

- Waste heat recovery in Cement Industry, JFE engineering, Indonesia
- Eco-driving with Digital Tachographs, NITTSU, Vietnam
- Energy saving at convenience stores, Panasonic, Indonesia
- High efficiency air-conditioning and process cooling, Ebara refrigeration equipment & systems, Indonesia
- High-efficiency Heat only Boilers, Suuri-Keikaku, Mongolia
- Upgrading air-saving loom at textile factory, TORAY etc., Indonesia, Thai, Bangladesh
- Installing solar PV system, PCKK, Palau Maldives
- Amorphous transformers in power distribution, Hitachi Materials, Vietnam
- Co-generation system at factory, Toyota, Nippon Steel & Sumikin Engineering, Indonesia, Thai
- High efficient refrigerator, Mayekawa MFG, Indonesia
- Regenerative Burners in industries, Toyotsu Machinery, Indonesia
- Solar PV System at Salt Factory, PCKK, Kenya
- Waste to Energy Plant, JFE engineering, Myanmar
- High efficient air-conditioning system, Hitachi, Daikin, Vietnam
- High efficiency air-conditioning system, Hitachi, Daikin, Vietnam
- LED street lighting system with wireless network control, MinebeaMitsumi, Cambodia
Contributions from Japan

Incentivize selecting low-carbon technologies by the financial support to initial cost on GHG emissions.

Partner Country

Japanese government & entities

Credits

Financial support

Select

Conventional equipment & facility

Low-carbon equipment & facility

Emission reductions

Japan will acquire a part of JCM credits (in return to the financial support)
JCM Partner Countries

- 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)
- Cambodia: Apr. 11, 2014 (Phnom Penh)
- Mexico: Jul. 25, 2014 (Mexico City)
- Saudi Arabia: May 13, 2015
- Chile: May 26, 2015 (Santiago)
- Myanmar: Sep. 16, 2015 (Nay Pyi Taw)
- Thailand: Nov. 19, 2015 (Tokyo)
- the Philippines: Jan. 12, 2017 (Manila)

Japan has held consultations for the JCM with developing countries since 2011 and has established the JCM with Mongolia, Bangladesh, Ethiopia, Kenya, Maldives, Viet Nam, Lao PDR, Indonesia, Costa Rica, Palau, Cambodia, Mexico, Saudi Arabia, Chile, Myanmar, Thailand and the Philippines.
Japan’s emission reduction target and the JCM

- Japan will achieve the target of 26% reduction through domestic emission reductions and removals without using international credits while the amount of credits acquired by Japan under the JCM will be appropriately counted as Japan’s reduction.
- 10 million tCO2 is expected to be realized by 2030 from the pipeline projects.
- Implementation of JCM projects is to be scaled-up through further mobilization of private sector finance.

“Plan for Global Warming Countermeasures (Cabinet Decision, May 2016)”

- Apart from contributions achieved through private-sector based projects, accumulated emission reductions or removals by FY 2030 through governmental JCM programs to be undertaken within the government’s annual budget are estimated to be ranging from 50 to 100 million t-CO2.
- The JCM is not included as a basis of the bottom-up calculation of Japan’s emission reduction target, but the amount of emission reductions and removals acquired by Japan under the JCM will be appropriately counted as Japan’s reduction.
JCM’s conservative emission reduction calculation (reference emissions below BaU emissions) will ensure a net decrease and/or avoidance of GHG emissions.

This part of emission reductions will automatically contribute to the achievement of NDC.

### GHG emissions

- **Reference Emissions under the JCM**
- **Business as usual emissions** (Baseline emissions under the CDM)
- **Conservative Emission Reductions**
- **Project emissions**
- **Start of project operation**

### Contribution to NDC

- **Contribution to Partner Country NDC**
- **Net Emission Reductions**
- **Japan**
- **Partner Country**

### Chart Details

- **GHG emissions**
- **Time**
- **Contributions**

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**Net Emission Reductions**

- Contribution to Japan’s NDC
- Contribution to Partner Country NDC
<table>
<thead>
<tr>
<th>Partner countries</th>
<th>Start from</th>
<th>No. of JC</th>
<th>No. of registered projects</th>
<th>No. of approved methodologies</th>
<th>Pipeline (JCM Financing Programme &amp; Demonstration Projects in FY 2013-2018)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mongolia</td>
<td>Jan 2013</td>
<td>6</td>
<td>5</td>
<td>3</td>
<td>9</td>
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<tr>
<td>Bangladesh</td>
<td>Mar 2013</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>6</td>
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<tr>
<td>Ethiopia</td>
<td>May 2013</td>
<td>3</td>
<td></td>
<td>3</td>
<td>2</td>
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<tr>
<td>Kenya</td>
<td>Jun 2013</td>
<td>3</td>
<td></td>
<td>3</td>
<td>3</td>
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<tr>
<td>Maldives</td>
<td>Jun 2013</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>Jul 2013</td>
<td>7</td>
<td>9</td>
<td>14</td>
<td>22</td>
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<tr>
<td>Lao PDR</td>
<td>Aug 2013</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Indonesia</td>
<td>Aug 2013</td>
<td>8</td>
<td>14</td>
<td>17</td>
<td>36</td>
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<tr>
<td>Costa Rica</td>
<td>Dec 2013</td>
<td>2</td>
<td></td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Palau</td>
<td>Apr 2014</td>
<td>5</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Cambodia</td>
<td>Apr 2014</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Mexico</td>
<td>Jul 2014</td>
<td>2</td>
<td></td>
<td>1</td>
<td>6</td>
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<tr>
<td>Saudi Arabia</td>
<td>May 2015</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
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<tr>
<td>Chile</td>
<td>May 2015</td>
<td>2</td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Myanmar</td>
<td>Sep 2015</td>
<td>2</td>
<td></td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Thailand</td>
<td>Nov 2015</td>
<td>4</td>
<td>5</td>
<td>9</td>
<td>29</td>
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<tr>
<td>Philippines</td>
<td>Jan 2017</td>
<td>1</td>
<td></td>
<td></td>
<td>8</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
<td><strong>62</strong></td>
<td><strong>41</strong></td>
<td><strong>66</strong></td>
<td><strong>150</strong></td>
</tr>
</tbody>
</table>
Government of Japan

International consortiums (which include Japanese entities)

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

- Eligible Projects: starting installation after the adoption of the financing and finishing installation within three years.

※Includes collaboration with projects supported by JICA and other governmental-affiliated financial institute.

Draft budget for projects starting from FY 2019 is 9.9 billion JPY (approx. USD 99 million) in total by FY2021

Finance part of an investment cost (less than half)

Conduct MRV and expected to deliver at least half of JCM credits issued

- Includes collaboration with projects supported by JICA and other governmental-affiliated financial institute.
JCM F-gas Recovery and Destruction Model Project by MOE

**Purpose**
To recover and destroy F-gas (GHG except for energy-related CO2, etc) from used equipment instead of releasing to air, and reduce emissions

**Scope of Financing**
- Establish scheme for recovery and destruction
- Install facilities/equipment for recovery/destruction
- Implementation of recovery, transportation, destruction and monitoring

**Project Period**
Three years in maximum (Ex. 1st year for scheme, 2nd year for facilities, 3rd year for recovery/destruction)

**Eligible Projects**
- After the adoption of financing, start implementation of recovery/destruction within three years
- Aim for the registration as JCM project and issuance credits

**International consortiums (which include Japanese entities)**
- Manufacturers of equipment which uses F-gas
- Users of equipment which uses F-gas
- Entities for recovery and transportation of used F-gas (recycling or scrap entities)
- Entities for destruction of used F-gas (may use existing facility for destruction)

【Draft budget for FY 2019】
40 million JPY (approx. 0.4 million USD) (1 USD = 100 JPY)

Finance part of the cost in flat-rate (up to 40 million JPY/year)

Conduct MRV to estimate GHG emission reductions. At least half or ratio of financial support to project cost (larger ratio will be applied) of JCM credits issued are expected to be delivered to the government of Japan.
A total of JPY 6.8 billion is contributed by Ministry of the Environment, Japan (MOEJ) as of Jan 2019.

To provide the financial incentives for the adoption of advanced low-carbon technologies which are superior in GHG emission reduction but expensive in ADB (Asian Development Bank)-financed projects.

To develop ADB projects with sustainable and low-carbon transition perspective by introducing advanced low-carbon technologies as well as to acquire JCM credits.

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

Draft budget for FY2019

JPY 1 billion (approx. USD 10 million)

1 USD = 100 JPY

Purpose

MOEJ

ADB

JFJCM (Trust Fund)

Additional costs from advanced low-carbon technologies

MRV

Mitigation through conventional technologies

(Selection from ADB pipeline)

Project

Co-Financing partners (Other financial institutions and funds)

ADB source (OCR\(^1\)/ADF\(^2\))

Interest

Buy-down (Non-sovereign)

Grant (Sovereign)

Co-financing

Loan/Grant etc.

Loan/Grant etc.

GHG reduction

1 Ordinary Capital Resources are from:
(1) Paid-in capital provided by shareholders, (2) Funds borrowed from capital markets and private placements, (3) Accumulated retained income (reserves). OCR loans are provided to middle-income countries at a quasi-market rate.

2 Asian Development Fund offers concessional loan and grant to low-income countries.
JCM Financing Programme by MOEJ (FY2013～2018) as of January 29, 2019

Thailand: 29 projects
- Energy Saving at Convenience Store
- Upgrading Air-saving Loom*
- Centrifugal Chiller in Tire Factory
- Air Conditioning System
- Energy Saving Equipment in Port
- 2.7MW Solar PV
- Heat Recovery Heat Pump
- 2.3MW Solar PV
- Air-conditioning Control System
- Energy Saving Equipment in Textile
- 2.5MW Solar PV in Industrial Park
- Biomass Boiler
- Introduction of Scheme for F-Gas Recovery and Destruction

Mongolia: 8 projects
- Heat Only Boiler (HOB)**
- 0.8MW Solar PV in Factory
- 10MW Solar PV*
- 8.3MW Solar PV in Farm
- 21MW Solar PV
- Upscaling Renewable Energy Sector

Viet Nam: 19 projects
- Digital Tachographs*
- Air-conditioning in Hotel*
- Air-conditioning in Lens Factory*
- Container Formation Facility
- Amorphous transformers*
- Air-conditioning Control System
- Efficiency Chiller
- Modal Shift with Reefer Container
- Inverters for Distribution Pumps

Bangladesh: 6 projects
- Centrifugal Chiller
- 315kW PV-diesel Hybrid System
- 1MW Solar PV on Factory Rooftop*

Laos: 4 projects
- REDD+ through controlling slash-and-burn
- Amorphous transformers*
- 155kW Solar PV for School*
- 4MW Solar PV for Commercial Facilities II*
- 0.4MW Solar PV for Supermarket

Saudi Arabia: 1 projects
- Electrolyzer in Chlorine Production Plant

Cambodia: 5 projects
- LED Street Lighting
- Solar PV & Centrifugal Chiller
- Battambang Wastewater Treatment Project

Myanmar: 7 projects
- 700kW Waste to Energy Plant
- Brewing Systems to Brewery Factory
- Centrifugal Chiller
- 1.8MW Rice Husk Power Generation
- Refrigeration System in Logistic Center
- 8.8MW Waste Heat Recovery in Cement Plant
- Biogas Boiler to Brewery Factory

Philippines: 8 projects
- 1.53MW Roof Top Solar PV
- 1.2MW Roof Top Solar PV
- 4MW Solar PV
- 4MW Hydro Power Plant

Maldives: 2 projects
- 106kW Solar Power on School Rooftop*
- Smart Micro-Grid System

Indonesia: 31 projects
- Centrifugal Chiller at Textile Factory*
- Refrigeration to Cold Chain Industry**
- Centrifugal Chiller at Textile Factory 2*
- 507kW Solar Power Hybrid System
- Centrifugal Chiller at Textile Factory 3*
- Upgrading to Air-saving Loom*
- Smart LED Street Lighting System
- Gas Co-generation System
- 1.6MW Solar PV in Jakabaring Sport City
- 10MW Hydro Power Plant
- Industrial Wastewater Treatment System
- Absorption Chiller

Total 137 projects in 17 partner countries

Underlined projects have started operation (80 projects, including 1 partially started projects)
Company succeeded to introduce amorphous high efficiency transformers all over Viet Nam through the JCM

Local energy distribution company included specifications for hiring the technology in its procurement standard based on understanding on its effectiveness

Further business development is happening in other countries (e.g. Lao PDR)
Company succeeded to implement leading low carbon technologies through the JCM model project. Using the project as a showcase, their business was developed in ASEAN countries. Further business development is expected through the establishment of energy efficiency standards and relevant institutional arrangements.

**Business Model Case②: Replicating through Standard & Institutional Arrangement**

- Myanmar: 2 JCM model projects (2016)
- Thailand: 7 projects (2015, 2016)
- Viet Nam: 3 projects (2016, 2017)

**JCM model project**

**Demonstration of energy efficiency effects**

**Establish standards & institutional arrangements**

- Regulations
- Standards
- Taxes

**Business development in other countries, sectors**
The PA has entered into implementation stage

There is one common rule for all countries

- With built-in flexibility for developing country Parties that need flexibility in the light of their capacities

- And some further rules, including on international market mechanisms, will be negotiated until 2019/2020.
For international market mechanisms under Article 6, countries:

- Describe how double counting has been avoided, in accordance with guidance developed related to Article 6, if relevant.

- Provide an emissions balance reflecting the level of GHG emissions covered by its NDC adjusted on the basis of corresponding adjustments;
  - an addition for international credits first-transferred
  - a subtraction for international credits used
  - in consistent with decisions adopted by the CMA on Article 6
Rules for Art. 6.4 mechanisms (“new CDM”) has not been agreed.

Treatment of the CDM projects has not been agreed, either.

For accounting rules for Art. 6.2 cooperation (including JCM), basic rules are agreed under Article 13, and further details, such as followings, will be discussed in 2019.

- How to count credits issued/used towards single-year target.
- Specific reporting and review procedures for Art. 6.2.
Thank you for your attention