Overall structure and financing programme for the Joint Crediting Mechanism (JCM)

Naoki Torii
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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).
Contributions from Japan

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

Japan will acquire a part of JCM credits (in return to the financial support).
The second component of Japan’s new set of contribution is innovation. The key to acting against climate change without sacrificing economic growth is the development of innovative technologies. To illustrate, there are technologies to produce, store and transport hydrogen towards realizing CO2–free societies, and a next-generation battery to enable an electric car to run 5 times longer than the current level. By next spring Japan will formulate the “Energy and Environment Innovation Strategy.” Prospective focused areas will be identified and research and development on them will be strengthened. (snip)

In addition, many of the advanced low-carbon technologies do not generally promise investment-return to developing countries. Japan will, while lowering burdens of those countries, promote diffusion of advanced low carbon technologies particularly through implementation of the JCM.
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.
The JCM related Articles in the Paris Agreement

2. Parties shall, where engaging on a voluntary basis in cooperative approaches that involve the use of internationally transferred mitigation outcomes towards nationally determined contributions, promote sustainable development and ensure environmental integrity and transparency, including in governance, and shall apply robust accounting to ensure, inter alia, the avoidance of double counting, consistent with guidance adopted by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement.

3. The use of internationally transferred mitigation outcomes to achieve nationally determined contributions under this Agreement shall be voluntary and authorized by participating Parties.

- Use of market mechanisms, including the JCM, is articulated under Article 6 which prescribes for the use of emission reductions realized oversees towards national emission reduction targets.
- The amount of emission reductions and removals acquired by Japan under the JCM will be appropriately counted as Japan’s reduction in accordance with the Paris Agreement.
- Japan is going to contribute to the development of the guidance for robust accounting including for avoidance of double counting to be adopted by the CMA*.

*the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement
Japan’s NDC (Excerpt)

Japan’s INDC

- Japan’s NDC towards post-2020 GHG emission reductions is at the level of a reduction of 26.0% by fiscal year (FY) 2030 compared to FY 2013 (25.4% reduction compared to FY 2005) (approximately 1.042 billion t-CO$_2$eq. as 2030 emissions), ensuring consistency with its energy mix, set as a feasible reduction target by bottom-up calculation with concrete policies, measures and individual technologies taking into adequate consideration, *inter alia*, technological and cost constraints, and set based on the amount of domestic emission reductions and removals assumed to be obtained.

Information to facilitate clarity, transparency and understanding

- 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.

Reference information
GHG emissions and removals
JCM and other international contributions

- Japan establishes and implements the JCM in order both to appropriately evaluate contributions from Japan to GHG emission reductions or removals in a quantitative manner achieved through the diffusion of low carbon technologies, products, systems, services, and infrastructure as well as implementation of mitigation actions in developing countries, and to use them to achieve Japan’s emission reduction target.
- 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-CO$_2$. 
JCM’s Contribution to NDC

- 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.

<table>
<thead>
<tr>
<th>Time</th>
<th>GHG emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<tr>
<td>Start of project operation</td>
<td></td>
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<tr>
<td>Business as usual emissions (Baseline emissions under the CDM)</td>
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<tr>
<td>Reference Emissions under the JCM</td>
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<tr>
<td>Conservative Emission Reductions</td>
<td></td>
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<tr>
<td>Project emissions</td>
<td></td>
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</tbody>
</table>

Net Emission Reductions

Contribution to Partner Country NDC

Contribution to Japan’s 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>5</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>2</td>
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<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>4</td>
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<tr>
<td>Indonesia</td>
<td>Aug 2013</td>
<td>8</td>
<td>14</td>
<td>16</td>
<td>33</td>
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<td>Costa Rica</td>
<td>Dec 2013</td>
<td>2</td>
<td></td>
<td>3</td>
<td>2</td>
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<tr>
<td>Palau</td>
<td>Apr 2014</td>
<td>5</td>
<td>3</td>
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<td>4</td>
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<tr>
<td>Cambodia</td>
<td>Apr 2014</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>6</td>
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<td>Mexico</td>
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<td>Saudi Arabia</td>
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<td>1</td>
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<td>Chile</td>
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<td></td>
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<tr>
<td>Myanmar</td>
<td>Sep 2015</td>
<td>2</td>
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<tr>
<td>Thailand</td>
<td>Nov 2015</td>
<td>4</td>
<td>4</td>
<td>7</td>
<td>27</td>
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<tr>
<td>Philippines</td>
<td>Jan 2017</td>
<td>1</td>
<td></td>
<td>63</td>
<td>8</td>
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<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>17</strong></td>
<td><strong>61</strong></td>
<td><strong>40</strong></td>
<td><strong>140</strong></td>
</tr>
</tbody>
</table>
Government of Japan

International consortiums (which include Japanese entities)

The budget for projects starting from FY 2018 is 6.9 billion JPY (approx. USD 69 million) in total by FY2020.

- Scope of the financing: facilities, equipment, vehicles, etc. which reduce CO\(_2\) 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.

Finance part of an investment cost (less than half)

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

JCM Model Projects by MOE

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- Scope of the financing: facilities, equipment, vehicles, etc. which reduce CO\(_2\) 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.
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)

Government of Japan
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

【Budget for FY 2018】
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)
**Budget for FY2017**

JPY 1 billion (approx. USD 10 million)  
※JPY 1.2 billion in 2016, and 1.8 billion in 2015 and 2014 respectively

**Scheme**

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

**Purpose**

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

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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.
Thailand: 27 projects
- Energy Saving at Convenience Store
- Upgrading Air-saving Loom*
- Centrifugal Chiller in Tire Factory
- Air Conditioning System & Chiller*
- Ion Exchange Membrane Electrolyzer
- LED Lighting to Sales Stores
- Co-generation System
- 1.5MW Solar PV and EMS in Paint Factory
- Heat Recovery Heat Pump
- 27MW Solar PV
- Air-conditioning Control System
- Energy Saving Equipment in Port
- 25MW Solar PV in Industrial Park
- Introduction of Scheme for F-gas Recovery and Destruction

Mongolia: 8 projects
- Heat Only Boiler (HOB)**
- 2.1MW Solar PV in Farm*
- 10MW Solar PV*
- 8.3MW Solar PV in Farm
- 15MW Solar PV
- 20MW Solar PV
- Upscaling Renewable Energy Sector

Kenya: 1 projects
- 1MW Solar PV at Salt Factory

Saudi Arabia: 1 projects
- Electrozolr in Chlorine Production Plant

Laos: 3 projects
- REDD+ through controlling slush-and-burn
- Amorphous transformers
- 1.4MW Floating Solar PV

Cambodia: 6 projects
- LED Street Lighting
- Solar PV & Centrifugal Chiller
- Battambang Wastewater Treatment Project
- 200kW Solar PV at International School*
- Inverters for Distribution Pumps
- 1.5MW Solar PV

Viet Nam: 19 projects
- Digital Tachographs*
- Air-conditioning in Hotel*
- Container Formation Facility
- Amorphous transformers 2*
- Air-conditioning Control System
- Electricity Kiln
- Energy saving Equipment in Lens Factory
- Amorphous transformers 3
- Energy Saving Equipment in Wire Production Facility
- Amorphous transformers 4
- Energy Saving Equipment in Brewery Factory
- High Efficiency Chiller
- Modal Shift with Reefer Container
- Inverters for Raw Water Intake Pumps
- Collection Scheme and Dedicated System of F-gas

Bangladesh: 6 projects
- Centrifugal Chiller
- 320kW PV-diesel Hybrid System
- Centrifugal Chiller*
- Loom at Weaving Factory
- 50MW Solar PV Power Plant
- High Efficiency Transmission Line

Ethiopia: 1 projects
- Biomass CHP Plant

Myanmar: 6 projects
- 700kW Waste to Energy Plant
- Brewing Systems to Brewery Factory
- Once-through Boiler in Instant Noodle Factory
- 1.8MW Rice Husk Power Generation
- Refrigeration System in Logistics Center
- 8.8MW Waste Heat Recovery in Cement Plant

Maldives: 2 projects
- 190kW Solar Power on School Rooftop*
- Smart Micro-Grid System

Philippines: 8 projects
- 15MW Hydro Power Plant
- 1.53MW Rooftop Solar PV
- 1.2MW Rooftop Solar PV
- 0.4MW Solar PV for Supermarket
- 4MW Hydro Power Plant
- 1MW Rooftop Solar PV
- 2.5MW Rice Husk Power Generation
- 0.16MW Micro Hydro Power Plant

Total 130 projects in 17 partner countries

Underlined projects have started operation (77 projects, including 1 partially started projects)
Projects with * have been registered as JCM projects (31 projects)
Technologies Transferred through JCM by MOEJ(FY2013-2018)

- Total of 130 **JCM Model Projects** being developed in 17 partner countries
- 53% are **energy efficiency** and 40% are **renewable energy**
- Transport, waste to energy, REDD+ and F-gas project shares 8%

**As of Oct 2nd, 2018**

- **Energy efficiency** 53%
  - Boiler
  - Air Conditioning
  - Refrigerating
  - Chiller
  - Looms
  - Transformer
  - Gas Co-generation
  - LED Lighting

- **Renewable energy** 40%
  - Solar
  - Micro hydro
  - wind
  - Biomass

- **Transport** 2%
  - Digital Tachographs
  - Modal Shift
  - CNG-Diesel Hybrid

- **Waste** 2%
  - Waste to Energy

- **REDD+** 2%
  - Controlling slush & burn

- **F-gas counter measure** 2%
  - Recovery & Destruction

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As of Oct 2nd, 2018