Joint Crediting Mechanism Development in Indonesia

Dicky Edwin Hindarto
Indonesia JCM Secretariat
Presentation Structure

1. The JCM institutional arrangements
2. The current development of the Joint Crediting Mechanism in Indonesia
3. JCM technical instruments
The JCM stakeholders

Japan

Government
- Issuance of credits
- Reports issuance of credits
- Request registration of projects

Project Participants
- Implementation & monitoring of projects

Joint Committee (Secretariat)
- Develops/revises the rules, guidelines and methodologies
- Registers projects
- Discusses the implementation of JCM

Indonesia

Government
- Issuance of credits
- Reports issuance of credits
- Request registration of projects

Project Participants
- Implementation & monitoring of projects

Third party entities
- Validate projects
- Verify amount of GHG emission reductions or removals

Conduct policy consultations

Japanese side secretariat
Indonesian side secretariat
Institutional arrangement of the JCM

Establishment of Joint Committee (JC) by Deputy CMEA Minister Decree No. 1/2014


Japanese Ministry members: Embassy of Japan in Indonesia (3 members), Foreign Affairs, Economy, Trade and Industry, Environment, Forestry

Establishment of Secretariat of Indonesian and Japanese side by Deputy CMEA Minister Decree No. 1/2014

Jointly:
- Prepare draft methodologies, rules and guidelines
- Receive new initiatives
- Assist JC in project cycle management
- Project monitoring & evaluation

Independently:
- Develop technical instruments
- Monitoring & evaluation

Facilitate capacity building
- Establish & maintain: registry, JCM website, Communication

Bilateral Cooperation on the JCM for the Low Carbon Growth Partnership between the Republic of Indonesia and Japan
Projects in the Pipeline:
9 energy efficiency, 4 renewable energy

<table>
<thead>
<tr>
<th>Project Title</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>1 Energy saving by double bundle-type heat pump</td>
<td></td>
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<tr>
<td>2 Energy saving for air-conditioning at textile factory</td>
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<tr>
<td>3 Energy saving for air-conditioning and process cooling at textile factory</td>
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<tr>
<td>4 Energy Savings at Convenience Stores</td>
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<tr>
<td>5 Energy Efficient Refrigerants to Cold Chain Industry</td>
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<tr>
<td>6 Energy Saving Through Introduction of Regenerative Burners to The Aluminum Holding Furnace of the Automotive Components Manufacturer</td>
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<tr>
<td>7 Energy Saving for Textile Factory Facility Cooling by High Efficiency Centrifugal Chiller (registered)</td>
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<tr>
<td>8 Utility Facility Operation Optimization Technology - &quot;RENKEI&quot; Control</td>
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<tr>
<td>9 Energy Saving by Optimum Operation at Oil Refinery</td>
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<tr>
<td>10 Palm waste biomass power generation project</td>
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<tr>
<td>11 Solar Power Hybrid System Installation to Existing Base Transceiver Stations in Off-grid area</td>
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<tr>
<td>12 Power Generation by Waste Heat Recovery in Cement Industry</td>
<td></td>
</tr>
<tr>
<td>13 Remote Auto-Monitoring System for Thin-Film Solar Power Plant in Indonesia</td>
<td></td>
</tr>
</tbody>
</table>

Source: Indonesia JCM Secretariat, 2014
Available Project M&E Procedure: Possible Indicators for Efficient Implementation

Project Document Cycle
- Submission of proposed methodology
- Approval of proposed methodology
- Development of POD

Project Cycle
- Design
- Manufacturing
- Installation
- Technology is being used

JCM Secretariat M&E Activities
1. Ensuring projects are on track with the given timeline
   - Follow up the design and manufacturing process
2. Monitor the compliance of project with JCM criteria
   - Capacity building plans
   - Project compliance with sustainable development criteria:
     - Conservation or diversification of natural resource use
     - Safety and health of local community
     - Local community’s welfare
     - Community participation
     - Social integrity
     - Transfer of technology
3. The monitoring result is to be sent to JCM Secretariat in accordance with the monitoring period stated in the methodology
   - Difficulty level of technology usage

Sector-based project monitoring tools for energy efficiency and renewable energy are under development

Give evaluation and recommendation from the activities
## JCM technical instruments

### JCM Indonesia-Japan Rules & Guidelines


### 4 Approved Methodologies on energy

<table>
<thead>
<tr>
<th>Methodology</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installation of Energy-efficient Refrigerators Using Natural Refrigerant at Food Industry Cold Storage and Frozen Food Processing Plant</td>
<td>Installation of Inverter-Type Air Conditioning System for Cooling for Grocery Store</td>
</tr>
</tbody>
</table>

### 3 Proposed Methodologies on energy (efficiency)

- Installation of LED Lighting for Grocery Store
- GHG emission reductions through optimization of refinery plant operation in Indonesia
- GHG emission reductions through optimization of boiler operation in Indonesia

**Sustainable Development Criteria and Implementation Plan (mandatory) under discussion with the Japanese side**

- 4 indicators: Social, Environment, Economy, Technology
- SD Implementation Plan in PDD stage, evaluated for credit issuance

### Other Tools and Guidelines

- Project Idea Note Form for Project and FS
- Pre-Operation Monitoring Form
- Operation Monitoring Form
- Ways of communication & information sharing
The MRV in JCM projects

Possible indicators

- Conservativeness
- Environmental integrity
- Robustness & consistency
- Accountability & Transparency
- Compliance to domestic standards, regulations
- Credit shared between countries

**Reference Emissions (RE)**

\[
RE_p = \sum_i \left( ECP_{PL,I} \times (COP_{PL,I} - COP_{RE,I}) \times EF_{elec} \right)
\]

- \(RE_p\): Reference emissions during the period \(p\) [tCO₂/p]
- \(ECP_{PL,I}\): Power consumption of project chiller \(i\) during the period \(p\) [MWh/p]
- \(COP_{PL,I}\): COP of project chiller \(i\) calculated under the standardizing temperature conditions [\(\cdot\)]
- \(COP_{RE,I}\): COP of reference chiller \(i\) under the standardizing temperature conditions [\(\cdot\)]
- \(EF_{elec}\): CO₂ emission factor for consumed electricity [tCO₂/MWh]

**Project Emissions (PE)**

\[
PE_p = \sum_i \left( ECP_{PL,I} \times EF_{elec} \right)
\]

- \(PE_p\): Project emissions during the period \(p\) [tCO₂/p]
- \(ECP_{PL,I}\): Power consumption of project chiller \(i\) during the period \(p\) [MWh/p]
- \(EF_{elec}\): CO₂ emission factor for consumed electricity [tCO₂/MWh]

**Emissions Reduction (ER)**

\[
ER_p = RE_p - PE_p
\]

- \(ER_p\): Emission reductions during the period \(p\) [tCO₂/p]
- \(RE_p\): Reference emissions during the period \(p\) [tCO₂/p]
- \(PE_p\): Project emissions during the period \(p\) [tCO₂/p]

**Energy Saving for Air-Conditioning and Process Cooling by Introducing High-efficiency Centrifugal Chiller**

Indonesian domestic emission reduction

Start of project operation

Net emission reductions

Reference Emissions

Emission Reductions (credits)

Project emissions
Learning from Project Participant: Semen Indonesia

### 30.6 MW power generation by waste heat recovery at cement factory

#### ECONOMIC ASPECT
- Condition: 19,790 kW × 7,680 hrs/year
- Energy Saving: 151,984.114 kWh/year

USD 12 million/year

#### ENVIRONMENTAL ASPECT
- CO2 emission reduction: 122,358 ton CO2/year
- Low temperature exit gas from stack
- Water consumption reduction for Conditioning Tower & Cooler water spray
- Corporate image
- Community benefit:
  - Jobs for construction
  - CSR allocation

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<table>
<thead>
<tr>
<th>No.</th>
<th>DESCRIPTION</th>
<th>SHARE</th>
<th>REMARKS</th>
</tr>
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<tbody>
<tr>
<td>1.</td>
<td>INVESTMENT COST</td>
<td></td>
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<tr>
<td></td>
<td>&gt; Foreign scope</td>
<td>49.05%</td>
<td>Major equipment supply, supervision</td>
</tr>
<tr>
<td></td>
<td>&gt; Local scope</td>
<td>50.95%</td>
<td>Local installation, civil building, local fabrication, dust conveying, water treatment plant</td>
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<tr>
<td></td>
<td>TOTAL INVESTMENT</td>
<td>100.00%</td>
<td></td>
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<tr>
<td>2.</td>
<td>NET INVESTMENT</td>
<td>81.56%</td>
<td></td>
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<tr>
<td>3.</td>
<td>SUBSIDY (from JCM)</td>
<td>18.44%</td>
<td>(from JCM)</td>
</tr>
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</table>

Total Investment: IDR 638 billion ([finance.detik.com](http://finance.detik.com))

Lower investment index (Rp/kW) by utilization of JCM
Indonesia JCM Secretariat

Kementerian BUMN Building 18th floor
Jl. Medan Merdeka Selatan 13, Jakarta

dickyedwin@jcmindonesia.com

www.jcmindonesia.com