Methodology development for facilitating the implementation of the JCM

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JCM Process and Support Scheme

Adoption of JCM Model Project

- Proposed methodology
- Approval of methodology
- PDD development
- Validation
- Registration
- Monitoring
- Verification
- Credit Issuance

Methodology • PDD • Monitoring Support

- Methodology Development
  - Reference emission
  - Explanation to host country
  - Various support
- PDD Support
  - Local Stakeholder consultation
  - Project registration
  - Validation
- Monitoring Report
  - Verification
  - Credit issuance
Concept of JCM methodology

- 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.

Summary of 19 approved JCM Methodologies

Type of project covered by 19 approved methodologies

- Energy Efficiency: 14
- Commercial and household: 6
- Factory: 6
- Supply side: 2
- Renewable energies: 2
  - PV: 2

Project Category:
- Energy efficiency: 14
  - Commercial and household: 6
  - Factory: 6
  - Supply side: 2
- Renewable energies: 2
  - PV: 2

Source: IGES JCM Database
Eligibility Criteria and Monitoring Parameter

- Eligibility criteria (Average) 4
- Monitoring parameter (Average) 2

Methodology key aspects
- Eligibility criteria
- Conservative reference emissions
- Simple monitoring methods

Eligibility criteria (number) vs. Key monitoring parameters (number)

Variety of Categories for Eligibility criteria

<table>
<thead>
<tr>
<th>Category</th>
<th>Example of eligibility criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Types of technology/device installed</td>
<td>Technology to be employed in this methodology is coal-fired heat only boiler (HOB) for hot water supply system.</td>
</tr>
<tr>
<td>Positive list (detail technical requirement)</td>
<td>WHR system consists of a Suspension Preheater boiler and/or Air Quenching Cooler boiler, turbine generator and cooling tower.</td>
</tr>
<tr>
<td>Types of activity covered (new installation/replacement)</td>
<td>The project activity involves the installation of new HOB and/or the replacement of the existing coal-fired HOB</td>
</tr>
<tr>
<td>Scale/capacity</td>
<td>Capacity of the project HOB ranges from 0.10 MW to 1.00MW.</td>
</tr>
<tr>
<td>Scope (sector, type/scale of facility)</td>
<td>The transmission line constitutes of a single or double circuit(s) directly connecting a substation and another substation within the country with no branching in between, and does not constitute a part of a loop.</td>
</tr>
<tr>
<td>Benchmark (Performance level)</td>
<td>The catalog value of the boiler efficiency for the project HOB is 80% or higher</td>
</tr>
<tr>
<td>Treatment to avoid leakage emissions</td>
<td>Plan for not releasing refrigerant used for project chiller is prepared.</td>
</tr>
<tr>
<td>Past data availability/ MRV</td>
<td>Data of fuel consumption and distance travelled before activation of digital tachograph system is available for each freight vehicle.</td>
</tr>
<tr>
<td>Operation</td>
<td>The project includes feedback of a driver’s performance with the graphical representation to the driver regularly, at least once in three months.</td>
</tr>
</tbody>
</table>

Source: IGES JCM Database
Example of Reference Emission Determination

Reference emission determination method

- The current situation and performance (11)
- Best available technology of country (1)
- Average historical performance (3)
- Performance of similar products and technologies which compete with the project technology (1)
- Standards and targets (3)

Sources used for calculating reference parameters

- Survey (11)
- National standard (4)
- International standard (2)
- Own records (2)

Source: IGES JCM Database

Example of Reference Emissions (1)

<table>
<thead>
<tr>
<th>Title</th>
<th>Reference emission determination method</th>
<th>Sources used for cal ref. parameters</th>
<th>Reference emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>MN_AM001 Installation of energy-saving transmission lines in the Mongolian Grid</td>
<td>The current situation and performance</td>
<td>National standard (Mongolia), International standard</td>
<td>GHG emission due to transmission loss, based on the parameters derived from Mongolian Standard MNS5870: 2008.</td>
</tr>
<tr>
<td>ID_AM005 Installation of LED Lighting for Grocery Store</td>
<td>Best available technology of country</td>
<td>Survey</td>
<td>Emissions from using reference lighting, calculated with total power consumption of project lighting, ratio of luminous efficiency of project/reference lighting, and CO2 emission factor for consumed electricity.</td>
</tr>
<tr>
<td>VN_AM005 Installation of energy efficient transformers in a power distribution grid, Version 1.0</td>
<td>Standards and targets</td>
<td>Survey</td>
<td>Calculated by no-load losses of the reference transformer, blackout rate and CO2 emission factor of the grid.</td>
</tr>
</tbody>
</table>

Source: IGES JCM Database
Most of the Monitoring Parameters are 1 to 2

<table>
<thead>
<tr>
<th>Type of Project</th>
<th>Key monitoring parameters</th>
<th>Methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy Efficiency - Commercial &amp; household</td>
<td>Total power consumption of project lighting</td>
<td>ID_AM005</td>
</tr>
<tr>
<td>Other renewable energies – PV</td>
<td>The quantity of the electricity generated by the project solar PV system</td>
<td>PW_AM001</td>
</tr>
<tr>
<td>Waste gas/heat utilization - Cement production line</td>
<td>The quantity of the electricity supplied from the WHR system to the cement production facility</td>
<td>ID_AM001</td>
</tr>
<tr>
<td>Biogas - Others</td>
<td>1. Amount of organic waste prevented from disposal in the SWDS excluding sludge, 2. Amount of processed biogas supplied to heat generation equipments</td>
<td>VN_AM004</td>
</tr>
</tbody>
</table>

Source: IGES JCM Database

JCM Project Development

- Determination of reference emissions (its methods and sources used) could provide the basis to which methodology could be further developed. Conducting survey to identify current situation and performance is most popular approach.
- Replication of methodology will be efficient to develop methodology.
- Eligibility criteria provides technical specificity with capacity, scope and benchmark value. Normally the criteria is around 4.
- Monitoring parameters been limited to 1-2. There has been increase of default values (E.g. Diesel generator of 49 efficiency and 0.533MWh/y).