Developing JCM methodologies

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Key features of JCM methodologies

1. The JCM methodologies are designed in such a way that project participants can use them easily and verifiers can verify the data easily.
2. In order to reduce monitoring burden, default values are widely used in a conservative manner.
3. Eligibility criteria clearly defined in the methodology can reduce 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 allow project participants to determine 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 allow GHG emission reductions/removals to be calculated automatically by inputting relevant values for parameters, in accordance with methodologies.

Today's topic on the JCM methodologies

Eligibility criteria

Net emission reductions

Simplified monitoring method

Eligibility criteria

♦Eligibility criteria are requirements for the JCM project defined in the JCM methodology and contain the followings:

(a) Requirements for the project in order to be registered as a JCM project.

(b) Requirements for the project to be able to apply the approved methodology.

Source: JCM Guidelines for Developing Proposed Methodology

♦Eligibility criteria is

☞Clearly defined in the methodology can reduce the risks of rejection of the projects proposed by project participants.

☞Established, in order to reduce emissions by:

(a)Accelerating the deployment of low carbon technologies, products and services, which will contribute to achieving net emission reductions;

(b)Facilitating the NAMAs in host countries.

☞A “check list” will allow easy determination of eligibility of a proposed project under the JCM and applicability of JCM methodologies to the project.

Source: Government of Japan

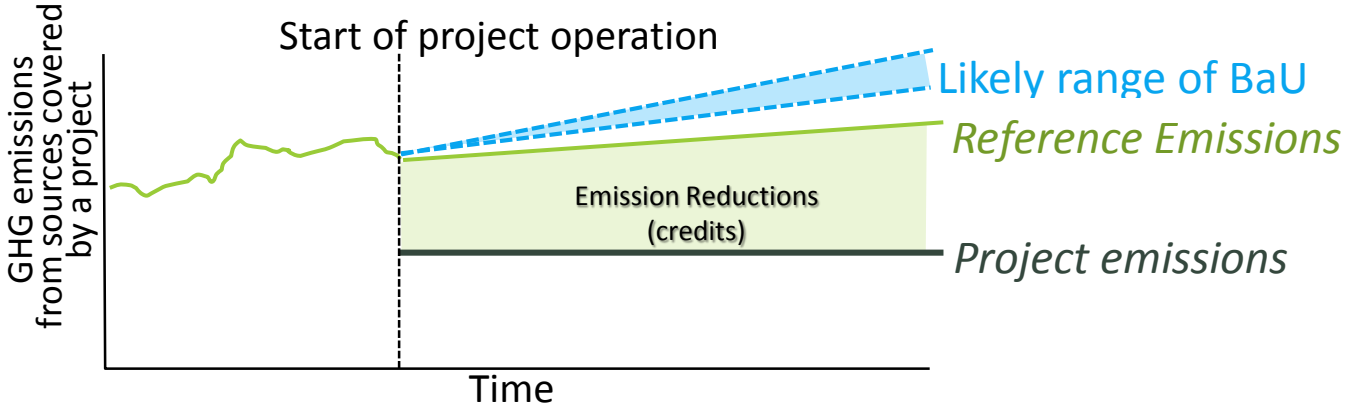
Category	Example of eligibility criteria
Type of technology/devise installed in the project	Technology to be employed in this methodology is coal-fired heat only boiler (HOB) for hot water supply system.
Positive list (Detail technical requirement)	WHR system consists of a Suspension Preheater boiler and/or Air Quenching Cooler boiler, turbine generator and cooling tower.
New installation/replacement, status before project implementation	The project activity involves the installation of new HOB and/or the replacement of the existing coal-fired HOB
Scale/capacity	Capacity of the project HOB ranges from 0.10 MW to 1.00MW.
Scope (sector, type/scale of facility)	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.
Benchmark (Performance level)	The catalog value of the boiler efficiency for the project HOB is 80% or higher
Treatment to avoid leakage emissions	Plan for not releasing refrigerant used for project chiller is prepared.
Past data availability/ MRV	Data of fuel consumption and distance travelled before activation of digital tachograph system is available for each freight vehicle
Operation	The project includes feedback of a driver's performance with the graphical representation to the driver regularly, at least once in three months.

WHR: Waste heat recovery

Net emission reductions (1)

- In the JCM, emission reductions to be credited are defined as the difference between reference emissions and project emissions.
- Reference emissions are calculated to be below business-as-usual (BaU) emissions which represent plausible emissions in providing the same outputs or service level of the proposed JCM project in Indonesia (Net decrease and/or avoidance of GHG emissions)

1. Conservative reference emissions

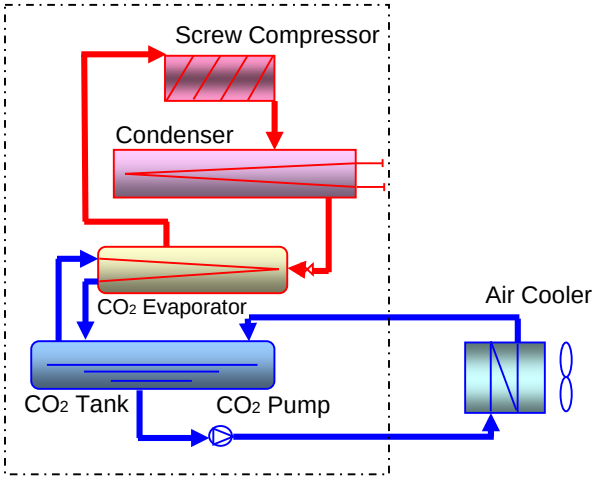


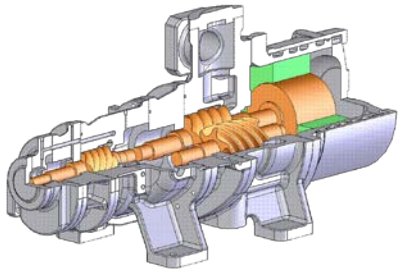
Example: ID_AM003 Installation of Energy-efficient Refrigerators Using Natural Refrigerant at Food Industry Cold Storage and Frozen Food Processing Plant

	BAU	Reference
COP value	The most common products in the market	The highest efficiency product in the market
Cold storage	1.6 - 1.65	1.71
Individual quick freezer	1.2 - 1.25	1.32

Example: High Efficiency Refrigerators Using Natural Refrigerant

- High efficient secondary loop cooling system:
  - ✓ Refrigerant: Non-fluorocarbon
    (primary:NH_3, secondary:CO_2)
  - ✓ COP: for individual quick freezer - more than 1.5
    for cold storage - more than 2.0





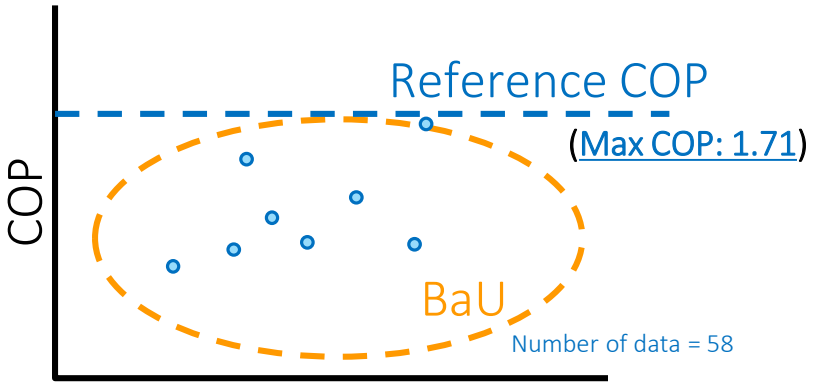
Screw Compressor

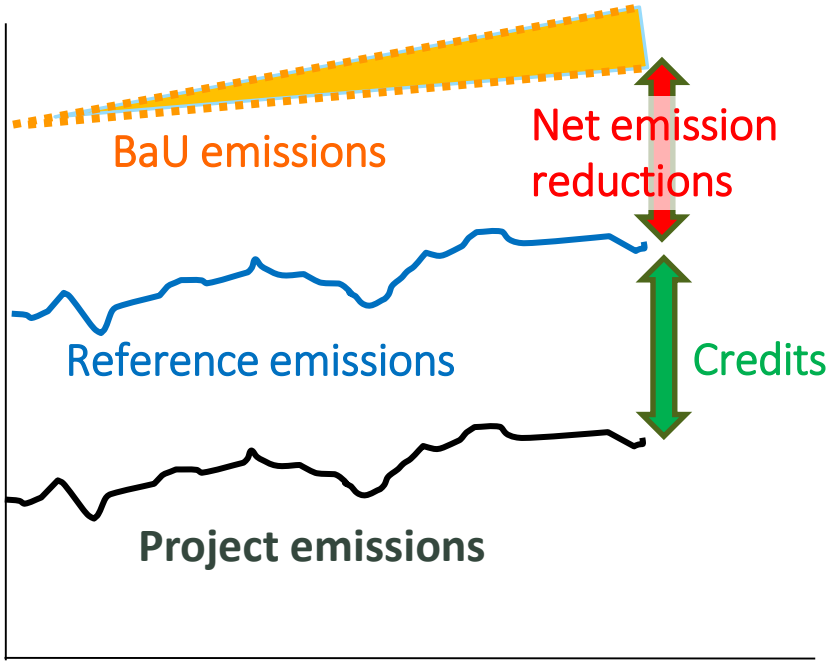
Condensing Unit

- The reference emissions are calculated based on the **maximum COP of commercially available** chillers.

Example: High Efficiency Refrigerators Using Natural Refrigerant

COP value of the possible refrigerators



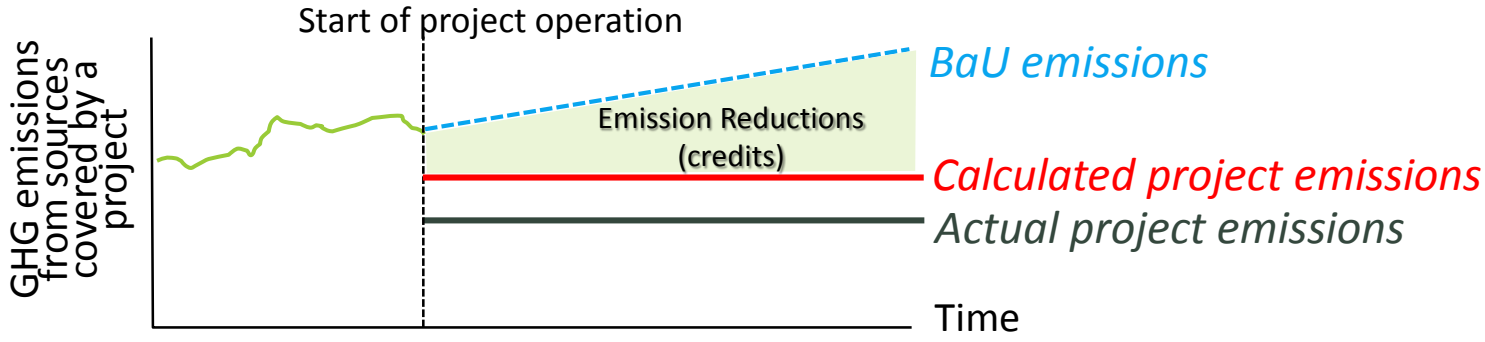


- Simplified monitoring: three parameters to be monitored
  - ✓ Amount of electricity consumed by project refrigerator
  - ✓ Electricity imported from the grid, where applicable
  - ✓ Operating time of captive electricity generator, where applicable

Net emission reductions (2)

2. Conservative project emissions

Using conservative default values in parameters to calculate project emissions instead of measuring actual values will lead calculated project emissions larger than actual project emissions



Example: ID_AM001 Power Generation by Waste Heat Recovery in Cement Industry

Actual project emissions	Calculated project emissions in the methodology
Monitored actual electricity consumptions of WHR system	Calculated electricity consumptions of WHR system with it's maximum rated capacity

WHR: Waste heat recovery

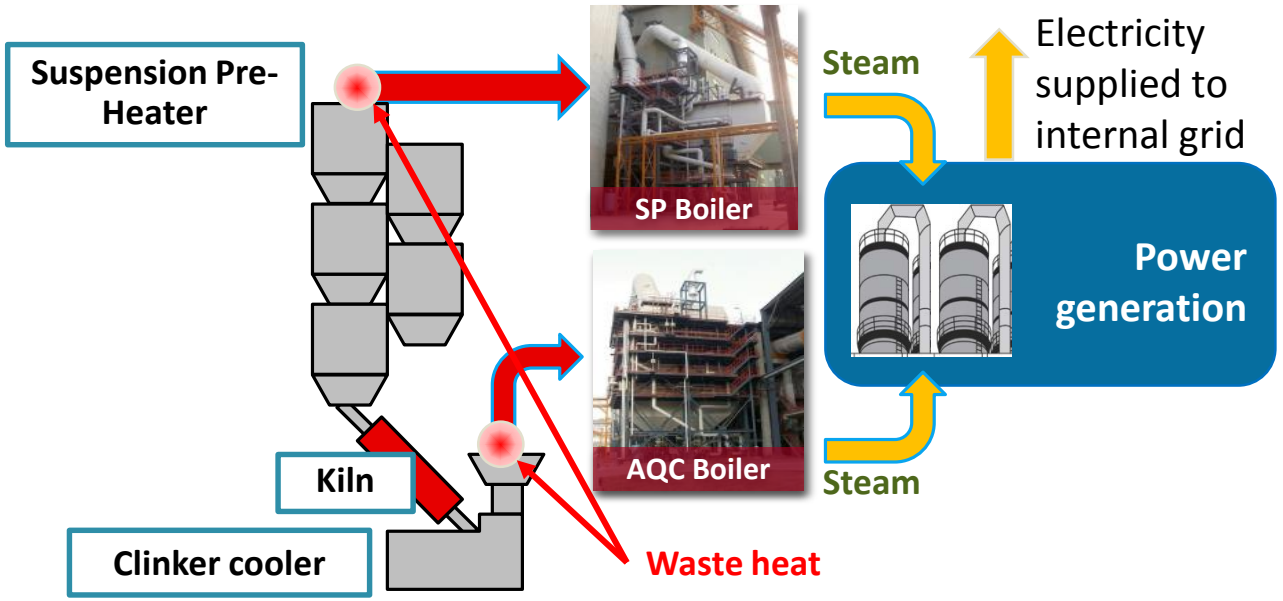
3. Upper limit in emission reductions

Example: VN_AM001Transportation energy efficiency activities by installing digital tachograph systems

Taking into account possibilities of emission reductions from other factors than installation of digital tachograph system, emission reductions for the project is limited to 10% of the reference emissions.

Example: Power Generation by Waste Heat Recovery in Cement Industry

- Waste heat recovery (WHR) system to generate electricity in the cement production facility .



The net amount of electricity supplied to the grid

= The gross amount of electricity generated by the WHR

minus The electricity consumed for captive use

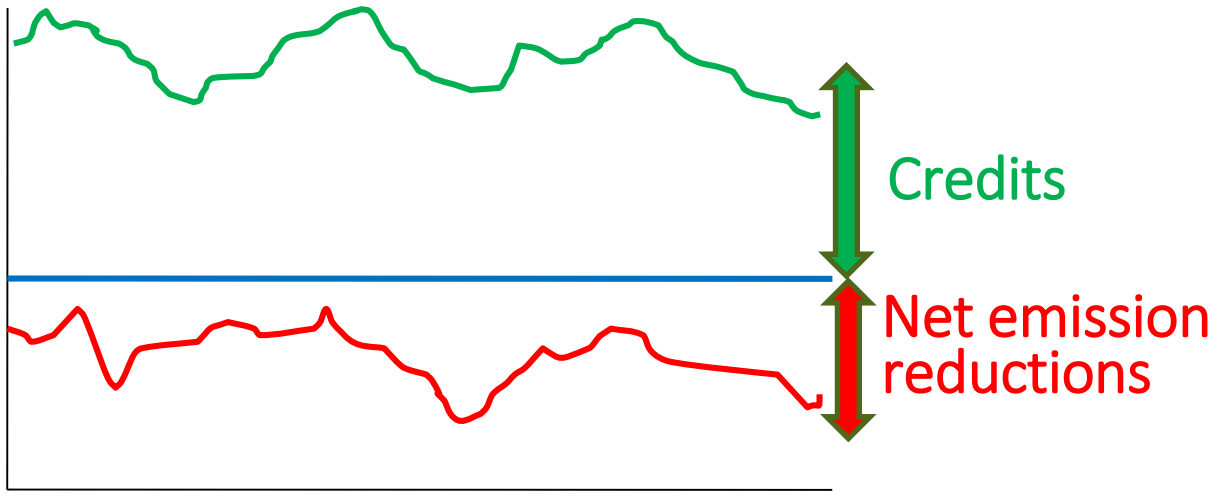
Example: Power Generation by Waste Heat Recovery in Cement Industry

- The default value for electricity consumed for captive use is set as the **<u>maximum rated capacity</u>** of equipment of the WHR system assuming their operation is **<u>24h/day</u>**.

The gross amount of electricity generated by the WHR

Default value used for captive use

The electricity consumed for captive use



- Simplified monitoring: two parameters to be monitored
  - ✓ The quantity of the electricity supplied from the WHR system to the cement production facility
  - ✓ The number of days during a monitoring period

Simplified monitoring method

An approved methodology consists of an approved methodology document and a Monitoring Spread Sheet

Monitoring spreadsheet

Monitoring Plan Sheet

is used before validation for developing a monitoring plan and calculating emission reductions *ex ante*.

Monitoring Structure Sheet

is used before validation for developing an operational and management structure to be implemented in order to conduct monitoring.

Monitoring Report Sheet

is used before verification for developing a monitoring report and calculating emission reductions *ex post*.

An approved methodology provides a default value or an identification method of a value for a crediting threshold which is typically expressed as GHG emissions per unit of output by total outputs for reference emissions.

Key points for developing JCM methodologies

Eligibility criteria

- It needs to conduct survey or research to identify what is advanced low carbon technologies and performance level in host country
- In order to simplify emission reduction calculations and monitoring method, it is better to specify scope

Net emission reduction

- Need to clarify BAU scenario and possible scenarios in Indonesia and select a conservative scenario with reasonable explanation.

Simplified monitoring method

- Establish default values or an identification method for crediting threshold
- Number of monitoring parameters (ex-post) should set minimum as much as possible