

Agenda item 4.1. (b)

Paragraph 22 of the annotated agenda

Methodology and tools (Package of documents): Energy-efficient refrigerators and air-conditioners (RAC)

CDM EB 96

Bonn, Germany, 18 to 22 September 2017



Procedural background

- EB 94 considered draft new tool “ Determination of SBL for energy efficient RACs” and requested further work and a draft new methodology addressing following issues:
 - Allow **IEC 62552** requirements for refrigerator testing
 - Account for **min. eff. performance standards** (MEPS) in the country
 - Account for **autonomous eff. Improvement**
 - Ensure **comparable service level** of PJ and BL
 - Define BL scenario for replaced refrigerator whose **lifetime** has expired
 - Further assess the proposed **eff. thresholds** against the CDM M&P
 - Continue **road testing for the ACs** in collaboration with relevant organizations



Purpose

- Propose a package of documents in response to EB mandates:
 - a) A revised tool to standardize baseline parameter (**RAC Tool**)
 - b) A new methodology for estimating baseline emission and monitoring
 - c) A new tool to calculate BL, PJ and/or LE due to the use of refrigerants in air-conditioners and refrigerators (**Refrigerant tool**)
- Took into account one public input received;
- In consultation with experts; and
- Road testing of approaches based on data received from energy commission of Ghana and GIZ



Key issues and proposed solutions

- **Issue 1:** Allow IEC 62552 requirements for refrigerator testing
 - **Proposal:** IEC 62552 is included as an option in the test protocol in appendix 5. Existing procedures derived from 62552 are retained as not all replaced refrigerators attain the min performance requirements of 62552 (e.g. 5 deg C ref temp)
- **Issue 2:** account min. eff. performance standards
- **Issue 3:** account autonomous eff. Improvement
 - **Proposal:** Addressed in appendix 2. MP took into a/c frequent updates of SB and E+/E- guidance from the Board. No change proposed for auto eff improvement (consistent with CDM M &P)
 - **Rationale:**
 - IEA studies on impact MEPS showed 16%(fridge) and 23% (AC) improvement in 10 years, will be reflected in SB updates



Key issues and proposed solutions

- **Issue4:** Define BL scenario for replaced refrigerator whose lifetime has expired
 - **Proposal/rationale:**
 - For equipment whose life time have been expired, the baseline based on the approach used for new sales
 - Further clarity has been provided in the draft new methodology



Key issues and proposed solutions

- **Issue 5:** Further assess the proposed eff. thresholds against the CDM M&P
 - **Proposal:** No changes recommended on thresholds
 - **Rationale:** Para 48 c of M&P (top 20% performance benchmark) translated in the approved Guidelines for the establishment of sector specific SBL (EB 65, annex 23); the performance benchmark for **household energy** is 80% based on a data vintage of 3 years i.e. The proposed approach of using 90th and 80th percentiles is consistent and conservative.
- **Road testing:** Carried out using refrigerator data from energy commission of Ghana. For air-conditioner, carried out for some data available for Thailand provided by GIZ



Draft New Methodology: Key Features

- Methodological provisions compatible to the **draft RAC tool**:
 - a) BE based on the parameters derived using the draft tool and the project parameters monitored ex post using the procedure in the methodology
 - b) Guidance on determining BL taking into account lifetime
 - c) Guidance to account baseline refrigerant emissions
 - Only avoided HFC eligible, HCFC not eligible
 - Penetration of ACs (with no ODP, low GWP) < 20%
 - d) Project/Leakage emissions from refrigerants based on **new draft methodological tool** “Calculation of baseline, project and leakage emissions from the use of refrigerants” (**Refrigerant tool**)



Draft Refrigerant Tool: Key Features

- Provides guidance to calculate **baseline, project and/or leakage emissions associated with the use of refrigerants** in air-conditioners and refrigerators.
- Default baseline/project parameters from IPCC included
- BE/PE/LE based on the elements of existing methods and following the EB guidance (EB 34, paragraph 17).



Simplified and standardized methods are likely to result in positive impacts on CDM projects and PoA development, as well as reduce costs of development of SB in the RAC sector.

The proposed work does not foresee any cost implications for third parties/stakeholders with no potential for any negative impacts



Recommendations to the Board

- To adopt:
 - a) New methodology AM00XX “Energy-efficient refrigerators and air-conditioners”
 - b) New methodological tool “Determination of standardized baselines for energy efficient refrigerators and air conditioners for households” and
 - c) New methodological tool “Calculation of baseline, project and leakage emissions from the use of refrigerants” ;
 - d) EB may also consider allowing first 3 SBs under top down process to demonstrate the application of the tool



Subsequent work and timeline

- If the Board approves the Refrigerant Tool, the relevant existing methodologies will need to be revised to streamline the provisions to account emissions due to use of refrigerants in RAC equipment

