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|  | CDM: FORM FOR SUBMISSION OF A “LETTER TO THE BOARD” (Version 01.2) This form should be used only by project participants and other stakeholders for submitting a “Letter to the Board” in accordance with the latest version of the <i>Modalities and procedures for direct communication with stakeholders</i> |
| <i>Name of the stakeholder¹ submitting this form (individual/organization):</i> | Samuel Shiroff Bosch and Siemens Home Appliances Group |
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| <i>Title/Subject (give a short title or specify the subject of your submission)</i> | Decisionmaking criteria and procedures related to small-scale methodologies (with examples before the Board at its 66 th session) |
| <i>Please mention whether the submitter of the form is:</i> | <input type="checkbox"/> Project participant <input checked="" type="checkbox"/> Other stakeholder, please specify Methodology developer |
| <i>Specify whether you want the letter to be treated as confidential²:</i> | <input type="checkbox"/> To be treated as confidential <input checked="" type="checkbox"/> To be publicly available (UNFCCC CDM web site) |
| <i>Please choose any of the type(s) below³ to describe the purpose of this submission.</i> | |
| <input type="checkbox"/> Type I: <input type="checkbox"/> Request for clarification <input type="checkbox"/> Revision of existing rules <input type="checkbox"/> Standards. Please specify reference <input type="checkbox"/> Procedures. Please specify reference <input type="checkbox"/> Guidance. Please specify reference <input type="checkbox"/> Forms. Please specify reference <input type="checkbox"/> Others. Please specify reference <input checked="" type="checkbox"/> Type II: Request for Introduction of new rules <input checked="" type="checkbox"/> Type III: Provision of information and suggestions on policy issues | |
| <i>Please describe in detail the issue on which you request a response from the Board, including the exact reference source and version (if applicable).</i> | |
| <p>>> We would like to request the EB to clarify small-scale methodology consideration procedures, illustrated by several examples from our own experience (please note that it is not our intention that the EB re-open past rulings on individual cases, but rather to contribute to improving the process going forward):</p> <ul style="list-style-type: none"> • Basis for rejecting/modifying bottom-up methodology submissions, in part or in full. The current “Procedures for the Submission and Consideration of a Proposed New Small-Scale Methodology” provide only the following guidance: <ul style="list-style-type: none"> ○ Under the guidance of the Chair and Vice-Chair of the SSC WG, a minimum of two (2) | |

¹ DNAs and DOEs shall use the respective DNA/DOE forms for communication with the Board.

² As per the applicable modalities and procedures, the Board may make its response publicly available.

³ Latest CDM regulatory documents and information are available at: <http://cdm.unfccc.int/Reference/index.html> .

members of the SSC WG shall be assigned to **review** each proposed new methodology.

- One expert from the roster of experts shall “...undertake a **desk review to appraise the validity** of the proposed new SSC methodology. Under the guidance of the Chair of the SSC WG and **in accordance with the provisions of the simplified modalities and procedures** for small scale CDM projects, the desk reviewer shall prepare a **recommendation** and forward it to the secretariat”
- The Board shall expeditiously **review** a submitted proposed methodology **in accordance with the simplified modalities and procedures** for small-scale CDM project activities.

Nowhere in the document is there any reference to decisionmaking criteria (for reviews of submissions, recommendations or drafting of documentation by the secretariat) other than the “Simplified modalities and procedures for small-scale CDM projects”. Based on our experience, however, there would appear to be numerous cases where methodology proposals have been in accordance with these modalities and procedures, but have still been rejected.

Under SSC_430, for example, the SSC WG ruled that “...adding a material-recycling component to a methodology that already encompasses energy efficiency and reduction of HFC-134a emissions is not in line with the goal of having simplified small scale methodologies.” We requested a clarification of this criterion for rejecting our proposal, but the subsequent response (SSC_447) merely stated that the SSC WG “...will not recommend any changes to leakages related to...metal recycling”, without giving any justification.

- Failure to adopt new methodologies/revisions as proposed. Another serious concern is that the SSC WG sometimes appears to “approve” methodology submissions – but what is sent to the EB is often only a small subset of what was originally proposed or has been dramatically modified from the original proposal. The secretariat has come to play a crucial role in this process; whereas the original “Simplified modalities and **procedures** for small-scale CDM project activities” stipulated that the interaction would be directly with the CDM Executive Board. According to the “Procedures for the Submission and Consideration of a Proposed New Small-Scale Methodology“, the secretariat now has the mandate to “compile all inputs — from members of the SSC WG, the public, the expert’s desk review, expertise outside the SSC WG and any additional information obtained from the proponents of the new methodology — and prepare draft methodologies and recommendations for the SSC WG’s consideration...**The SSC WG, shall base its recommendation on the proposed new SSC methodology in the draft as prepared by the secretariat.**”

This means that the neither the EB (nor its designated WG) decides on new methodologies or revisions as formulated by the entity that prepared the submission; but rather on the version prepared by the secretariat (which is not required to be shared with the proposing entity prior to the WG meeting). Similarly, the desk reviews are not made public at the time they are received, but only after the SSC WG makes its final recommendation to the EB. This step in the process is both critical and fully intransparent. If the secretariat chooses to add, remove or modify submissions (perhaps based partially on an unpublished desk review), and the SSC WG approves this version, the message to the submitting entity (and to the EB) is that the bottom-up proposal has been recommended for approval. No further explanations are given and there is no recourse for the proposing entity to communicate further with the SSC WG.

In the case of AMS II.O. before the EB at this (66th) session, for example, the final recommendation of the SSC WG states:

“The SSC WG agreed to recommend a new methodology entitled SSC-II.O. “Dissemination of energy efficient household appliances”, as contained in annex 2 of the meeting report of the SSC WG 35. The methodology is applicable to project activities that increase sales dissemination of new household appliances, specifically refrigerators that have very high efficiencies. Energy-efficient project refrigerators replace baseline refrigerators that are assumed to have an efficiency as defined in a benchmark.”

We are, of course, hoping that this groundbreaking benchmarking methodology will be approved by the EB; however, this version is quite different from the one originally proposed – and we believe there is scope for a far better product to be approved, based on material submitted originally. We would like to highlight two elements that were eliminated from the version presented to the EB (without justification to us following the final round of consultations), which we would like to see re-instated on approval by the EB:

>> A modular structure, which simplifies expanding the methodology to other types of home appliances. By having a framework methodology that applies to all appliances and separate technical annexes for different categories of appliances, new technologies can be added as technical annexes through the request for revision process without having to re-open the framework methodology itself. We devoted significant effort and resources to developing this approach to contribute to administrative efficiency. Our proposed structure would have no impact on the quantification of emissions reductions under the methodology, merely simplify its planned expansion, and we believe this approach is worth considering for other methodologies, as well. We did not get any response why this structure was not retained by the secretariat/WG, particularly since the first footnote added by the WG states that “Project proponents wishing to apply for additional appliance categories are encouraged to submit a request for revision.”

>> Scope of the methodology to include three additional major domestic appliance types from the outset (dishwashers, washing machines, clothes dryers). We have revised the corresponding technical annexes to address all issues raised previously by the secretariat/SSC WG. In our last exchange with the secretariat/WG, we were informed that there was one outstanding issue remaining, namely divergent views in the WG regarding proposed default values cited from EU standard for appliances used intermittently. So we suggested removing the usage default values and instead requiring *ex ante* household surveys. This proposal was apparently rejected by the SSC WG; instead, the three categories were completely eliminated from the methodology altogether. We see no basis for rejecting use of household surveys to determine usage parameters, and the WG did not provide any justification.

These examples point to the need for consistent criteria to be applied to all methodology work going forward: When should a methodology proposal be approved and when rejected? They also highlight the intransparency in a critical part of the methodology process, namely decisions by the secretariat on what material should be presented to the SSC WG for consideration. Given the effort that goes into such bottom-up proposals, the secretariat and WG should have to document and justify why or why not it does not approve each element of a methodology submission in the original form that is proposed. The basic principle should be that proposals are accepted without modification, if they meet the approval criteria. In the next section, we propose means of addressing these concerns.

Please provide any specific suggestions or further information which would address the issue raised in the previous section, including the exact reference source and version (if applicable).

>>

1. **Agreed criteria for the evaluation of methodology submissions should be the basis for methodology decisions and justifications.** The primary considerations should be whether the proposed new methodology or revision:
 - is consistent with the CDM modalities and procedures;
 - offers (maintains) sufficient safeguards to avoid systematically issuing CERs that exceed actual net greenhouse gas emissions reductions or sink removals;
 - is consistent with any applicable CDM standards.
2. **Desk reviews should be published online as soon as they are completed**, so that the material is available to all involved in the methodology approval process, particularly the entity that submitted the proposed new methodology or revision.
3. **Changes to proposed methodologies/revisions submitted bottom-up should only be made by the secretariat and SSC WG during the approval process in exceptional cases**, namely, if such changes are:

- necessary to ensure that the submission meets the approval criteria (see previous point) and
- suggested in the preliminary recommendation and accompanied by a justification from the SSC WG on the basis of the evaluation criteria above, which allows the submitting entity to respond; or
- purely editorial in nature.

This should apply equally when methodology submissions are recommended by the SSC WG for approval by the EB.

The current documentation of SSC WG recommendations and communications has recently been amended to include “Historic statuses” with the date of each step. This is effective but should be further improved by assuring that all substantial changes from initial submission to recommended version to the EB are clearly identified. Substantial changes must be enumerated and differences between proponent’s and SSC WG’s evidence and views visible to the public. Over time this should lead to a much needed clarification of methodology quality criteria for all CDM types and technologies within the expert community. The transparency of methodology assessments and the exchanges between proponents and secretariat/SSC WG would improve.

4. **A procedure should be established** to allow the entities that have invested resources in methodology development (which is not protected by IP) to communicate with the CDM EB on case-specific methodology recommendations made by the SSC WG, so that the EB may consider these concerns before ruling on the WG recommendations. This would need to apply to both “C” and “A” recommendations (since there are as often concerns with the methodologies being recommended for approval).

We expect that if the three previous suggestions were adopted, there would be very little demand for such communication, but it could perhaps be more effective than establishing an appeals procedure (as has been adopted in the context of requests for registration and issuance), once the EB has already taken decisions.

5. Finally, **we request that the EB consider approving a modified version of AMS II.O. at EB 66** (additional file mentioned below), which differs from the version recommended to the EB by the SSC WG in two aspects:

- Modular structure reinstated: We did not get any explanation why this should not be acceptable – and believe the approach contributes to administrative efficiency and the desire to have methodologies be more broadly applicable;
- Four major domestic appliances (refrigerating appliances, dishwashers/washing machines, clothes dryers) included: We submitted full documentation on all four categories (not just refrigerating appliances) and agreed to delete default usage values and require *ex ante* surveys for the appliances used intermittently (which was the only concern communicated to us in the end), but we did not get any justification why the WG rejected three categories outright (leaving us with no basis for re-submission).

We hope that the EB will consider approving the attached version, or instruct the SSC WG to provide feedback/justification, so that we know how to proceed with any changes needed to obtain WG approval for expanding the methodology. Full documentation of exchanges with the secretariat/WG on these two aspects can be provided as needed.

| | |
|---|--|
| <i>If necessary, list attached files containing relevant information (if any)</i> | <ul style="list-style-type: none"> • Amended version of AMS II.O. for approval by the EB at its 66th Session |
|---|--|

| Section below to be filled in by UNFCCC secretariat | |
|--|--|
| Date when the form was received at UNFCCC secretariat | |
| Reference number | |

History of document

| Version | Date | Nature of revision |
|---|------------------|---------------------------|
| 01.2 | 08 February 2012 | Editorial revision. |
| 01.1 | 09 August 2011 | Editorial revision. |
| 01 | 04 August 2011 | Initial publication date. |
| Decision Class: Regulatory Document Type: Form Business Function: Governance | | |

Indicative simplified baseline and monitoring methodologies
for selected small-scale CDM project activity categories

II.O. Dissemination of Super-Efficient Household Appliances (cont)

TYPE II - ENERGY EFFICIENCY IMPROVEMENT PROJECTS

Project participants shall apply the general guidelines to SSC CDM methodologies, information on additionality (attachment A to Appendix B) provided at

<<http://cdm.unfccc.int/methodologies/SSCmethodologies/approved.html>> *mutatis mutandis*.

II.O. Dissemination of super-efficient household appliances

Technology/measure

1. This methodology is applicable⁴ to project activities that increase dissemination⁵ of new household appliances that have very high efficiencies and are more energy-efficient than baseline appliances that are assumed to have lower baseline benchmark efficiencies. Project dissemination activities can include defined efforts that increase:
 1. Direct delivery by manufacturers to buyers (including distributors, retailers and end-use residential consumers); or
 2. Dissemination by market intermediaries to end-use residential customers (such as utility demand-side management programs).
2. Any combination of appliances for which technical annexes have been approved may be included within a project activity.
3. This methodology is applicable under the following conditions:
 - (a) A technical annex is included in the current version of AMS II.O. for the specific type(s) of appliances included in the project activity;
 - (b) The project appliances are designed to run on electricity;
 - (c) The serial numbers and model numbers for each project appliance are documented at the time they are disseminated;
 - (d) The manufacturers of the project appliances are ISO 9001 certified at the time of validation to ensure data reliability.
4. The project activity may involve more than one refrigerator model or type and the project activity can continue, with the dissemination of additional refrigerators, throughout the crediting period, as long as the aggregate energy savings do not exceed the threshold for small-scale Type II CDM (i.e., 60 GWh per year).
5. The start date of the crediting period for each refrigerator under this methodology is the date when the end-use residential consumer receives the refrigerator.⁶ If the project dissemination activity does not include distribution to the end-use residential consumer, the start date of crediting period is one year after the date from

⁴ Project proponents wishing to apply for additional appliance categories are encouraged to submit a request for revision to include new technical annexes.

⁵ The term “dissemination” refers to all means of distributing appliances in the host country (for example wholesale or retail sale), excluding sales intended for export. Units disseminated may be manufactured in the host country or imported. The mode of dissemination will depend on the nature of the project activity.

⁶ As an illustration, if 10 year crediting period is selected, a refrigerator received by a consumer at the beginning of year 1 may receive up to 10 years of CERs while a refrigerator received by a consumer at the beginning of year 6 of the crediting period may receive up to five years of CERs.

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II.O. Dissemination of Super-Efficient Household Appliances (cont)

when the dissemination activity is completed, for example delivery of project refrigerators from a manufacturer to a distributor.⁷ Certified Emission Reductions cannot be earned for any returned refrigerators (for which the dissemination is “reversed”).

Boundary

6. The project boundary is the geographical boundary of the host country or countries specified in the project design document.

Baseline

7. It is assumed that the baseline scenario is a new appliance that is less efficient than the project appliance, and which would have been purchased by the same residential end-use consumer instead of the project appliance for the same application.

REPLACE PARAGRAPHS 8 – 11 OF THE SSC WG VERSION WITH THE PARAGRAPHS 8 - 12 BELOW
Note that the original material pertains to refrigerating appliances only and now appears in Technical Annex 1.
This section is now generic, to accommodate all types of household appliances.

8. A conservative benchmark approach is applied to establish the electricity consumption baseline ($E_{BL,y}$), in MWh/y. Refer to the relevant technical annex for instructions on determining the energy baseline for each eligible appliance type.

9. Baseline emissions are calculated as follows:

$$BE_y = \sum_{i=1}^n E_{BL,y,i} * EF_{elec,y} \quad (1)$$

Where:

| | |
|---------------|---|
| BE_y | Baseline emissions in year y (tCO ₂) |
| $E_{BL,y,i}$ | Electricity consumption in baseline in year y for appliance type i (MWh/y), determined according to the relevant technical annex (e.g., refrigeration appliances in Technical Annex 1) |
| $EF_{elec,y}$ | Emission factor for grid electricity in year y (tCO ₂ /MWh), calculated according to the procedures for combined margin prescribed in the “Tool to calculate the Emission Factor for an electricity system” or as the weighted average emissions of the current generation mix. The data of the year in which project generation occurs must be used. Calculations shall be based on data from an official source (where available) and made publicly available. |

Project activity emissions

10. Project emissions in year y (tCO₂e) are calculated as the sum across all types of appliances of emissions resulting from grid electricity use (where i is the eligible appliance type):

⁷ This one-year period is intended to conservatively account for the time lag between the start of the dissemination activity and the household receiving and starting to use the appliance.

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II.O. Dissemination of Super-Efficient Household Appliances (cont)

$$PE_y = \sum_{i=1}^n E_{PJ,y,i} \times EF_{elec,y} \quad (2)$$

Where:

- PE_y Project emissions in year y (tCO₂e)
- $E_{PJ,y,i}$ Energy consumption in project activity in year y for appliance type i (MWh/y), determined according to the corresponding technical annex
- $EF_{elec,y}$ Emission factor for grid electricity (tCO₂/MWh), as per baseline emissions

Emission reductions

11. Emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y + ER_{TD,y} \quad (3)$$

Where:

- ER_y Emission reductions in the year y (tCO₂/year)
- BE_y Baseline emissions in year y (tCO₂/year)
- PE_y Project emissions in year y (tCO₂/year)
- $ER_{TD,y}$ Emission reduction from reduced technical grid losses (tCO₂/year)

12. The emission reduction due to lowering technical grid losses is calculated as follows:

$$ER_{TD,y} = \left[\sum_{i=1}^n (E_{BL,y,i} - E_{PJ,y,i}) \right] \times EF_{elec,y} * TD_y \quad (4)$$

Where:

- TD_y Average annual technical grid losses (transmission and distribution) during year y . A default value of 10% or recent data published either by a national utility or an official governmental body may be used

Leakage

13. Any leakage specific to a given appliance type shall be accounted for according to the provisions of the relevant technical annex.

Monitoring

14. Historical sales of the project appliances (SN_{h,k}): Average number of units of each refrigerating appliance model k sold into the project boundary annually for the three years prior to year=1.

15. During project activity implementation, the following data shall be recorded:

- (a) Parameters needed to calculate the grid emission factor ($EF_{elec,y}$);

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II.O. Dissemination of Super-Efficient Household Appliances (cont)

- (b) Average annual technical grid losses (TD_y), unless the default value in Equation 4 is used (annually);
- (c) Number of units of each model type disseminated and the date of such dissemination for each appliance disseminated under the project activity within the geographic boundary of the host country and intended for domestic use ($SN_{y,k}$) and their serial and model numbers. Such data shall be recorded at the time of the dissemination activity and compiled at least annually. The source of data depends on the nature of the project activity:
 - Direct sales by manufacturers: Units of each model sold by the manufacturer directly, based on manufacturer sales records;
 - Dissemination by market intermediaries (e.g., retailers or utilities): Units of each model disseminated under the program, as reported by participating market intermediaries;
 - Purchases by appliance end-users: Units of each model purchased, based on records collected at the time of sale;
- (d) Electricity consumption of each appliance model disseminated under the project activity, recorded for each model (k) and parameters needed to calculate baseline electricity consumption. Details of the parameters to be recorded for each appliance type are provided in the respective technical annex;
- (e) Usage parameters for appliances used intermittently (e.g., cycles per year (CPY_k) for dishwashers and washing machines or amount of laundry per year ($W_{laundry}$) for dryers), based on household surveys (once prior to each crediting period);
- (f) Any and all additional parameters for specific appliance types, as required by the applicable technical annexes.

Project activity under a Programme of Activities

16. The methodology is applicable to a programme of activities, no additional leakage estimations are necessary other than that indicated under leakage section above.

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II.O. Dissemination of Super-Efficient Household Appliances (cont)

Technical Annex 1: Refrigerating Appliances

Eligible technologies

All categories of household refrigerating appliances⁸ defined in Table 1 of Annex VIII of “Directive 2010/30/EU of the European Parliament and of the Council with regard to energy labeling of household refrigerating appliances” are eligible:

| Category | Designation |
|----------|---|
| 1 | Refrigerators with one or more fresh-food storage compartments |
| 2 | Refrigerators-cellar, Cellar and Wine storage appliances |
| 3 | Refrigerator-chiller and Refrigerator with a 0-star compartment |
| 4 | Refrigerator with a one-star compartment |
| 5 | Refrigerator with a two-start compartment |
| 6 | Refrigerator with a three-star compartment |
| 7 | Refrigerator-freezer |
| 8 | Upright freezer |
| 9 | Chest freezer |
| 10 | Multi-use and other refrigerating appliances |

Only appliance models utilising refrigerants and foam blowing agents having no ozone depleting potential (ODP) and low global warming potential (GWP <15, according to the latest IPCC Assessment Report) may be included in the project activity.

Scope

- The main source of greenhouse gas emissions reductions for refrigerating appliances is the greater system efficiency and resulting lower electricity consumption of the project appliances relative to the baseline.
- Consumption of water is considered to be immaterial and/or equivalent in the baseline and project appliances.
- It is assumed that the baseline and project appliances use the same refrigerant and that emissions from physical leakage of refrigerants are also identical. This is conservative, since project appliances may not use high-GWP refrigerants or foam blowing agents, which are prevalent in the appliance stock, as well as in most new models sold.

Electricity baseline

The electricity baseline for refrigerating appliances in year y is calculated as follows:

$$E_{BL,y} = \sum_{k=1}^n (SN_{y,k} - SN_{h,k}) * AEC_{BL,k} \tag{TA1-1}$$

Where:

| | |
|-------------------|--|
| SN _{y,k} | Cumulative number of units of refrigerating appliance model k disseminated into the project boundary under the project activity and still operating in year y, assuming an equipment lifetime of 17 years ⁹ |
|-------------------|--|

⁸ “Household refrigerating appliance” means an insulated cabinet, with one or more compartments, intended for refrigerating or freezing foodstuffs, or for the storage of refrigerated or frozen foodstuffs for non-professional purposes, cooled by one or more energy-consuming processes, including appliances sold as building kits to be assembled by the end-user.

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II.O. Dissemination of Super-Efficient Household Appliances (cont)

| | |
|---------------------|---|
| SN _{n,k} | Average number of units of refrigerating appliance model <i>k</i> disseminated into the project boundary annually, averaged over the three years prior to year <i>y</i> = 1 (at the start date of the crediting period) |
| AEC _{BL,k} | Annual energy consumption of the baseline refrigerating appliance corresponding to project model <i>k</i> (kWh/y) |

The annual energy consumption of each baseline model is calculated as follows:

$$AEC_{BL,k} = (EEI / 100) * (V_{eq,k} * M_k + N_k + 50) \tag{TA1-2}$$

Where the following parameters are determined as specified in Annex VIII of Directive 2010/30/EU¹⁰:

| EEI | Energy Efficiency Index. A default value of 55 shall be used. This value shall be updated to be the mid-point value of the EEI rating of Class A (or equivalent) refrigerators. At the time of renewal of the crediting period, the EEI shall be updated, as required. | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------|--|----------|---|---|---|-------|---------|---|-------|---------|---|-------|---------|---|-------|---------|---|-------|---------|---|-------|---------|---|-------|----|
| V _{eq,k} | Equivalent volume of the household refrigerating appliance of project model <i>k</i> (liters) | | | | | | | | | | | | | | | | | | | | | | | | |
| M _k | Constant value for appliance category of model <i>k</i> per Table 7 of Annex VIII, reproduced here: <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Category</th> <th>M</th> <th>N</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0.233</td> <td>24 5</td> </tr> <tr> <td>2</td> <td>0.233</td> <td>24 5</td> </tr> <tr> <td>3</td> <td>0.233</td> <td>24 5</td> </tr> <tr> <td>4</td> <td>0.643</td> <td>19 1</td> </tr> <tr> <td>5</td> <td>0.450</td> <td>24 5</td> </tr> <tr> <td>6</td> <td>0.777</td> <td>30 3</td> </tr> <tr> <td>7</td> <td>0.777</td> <td>30</td> </tr> </tbody> </table> | Category | M | N | 1 | 0.233 | 24 5 | 2 | 0.233 | 24 5 | 3 | 0.233 | 24 5 | 4 | 0.643 | 19 1 | 5 | 0.450 | 24 5 | 6 | 0.777 | 30 3 | 7 | 0.777 | 30 |
| Category | M | N | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 0.233 | 24 5 | | | | | | | | | | | | | | | | | | | | | | | |
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| 3 | 0.233 | 24 5 | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 0.643 | 19 1 | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | 0.450 | 24 5 | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | 0.777 | 30 3 | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | 0.777 | 30 | | | | | | | | | | | | | | | | | | | | | | | |

⁹ It can be assumed that the project refrigerating appliances will remain in operation for 17 years. This value for mean lifetime is taken from the information presented in Figure 3 of Welch & Rogers (2010). Several considerations speak to the conservativeness of this value: (i) the baseline scenario is a new appliance purchase; (ii) refrigeration appliances are often repaired and re-used in developing country settings; and (iii) freezers have an average life even longer than the default value proposed (nearly 19 years).

¹⁰ This method is based on the following assumptions: (a) the energy efficiency index (EEI) of the baseline refrigeration appliance is equal to 55; (b) the baseline appliance is the same category and has the same equivalent volume and functions (e.g., freezer compartment, ice maker) as the project appliance model.

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II.O. Dissemination of Super-Efficient Household Appliances (cont)

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|-------|--|-------|-----|
| | | | 3 |
| | 8 | 0.539 | 31 |
| | | | 5 |
| | 9 | 0.472 | 28 |
| | | | 6 |
| | 10 | (*) | (*) |
| | (*) <u>Note:</u> for Category 10 household refrigerating appliances the <i>M</i> and <i>N</i> values depend on the temperature and star rating of the compartment with the lowest storage temperature capable of being set by the end-user and maintained continuously according to the manufacturer’s instructions. When only an “other compartment” as defined in Table 2 and Annex I of Directive 2010/30/EU, point (n), is present, the <i>M</i> and <i>N</i> values for Category 1 are used. Appliances with three-star compartments or food-freezer compartments are considered to be refrigerator-freezers. | | |
| N_k | Constant value for appliance category of model <i>k</i> per Table 7 of Annex VIII (see above table) | | |

Project electricity consumption

The electricity consumption of refrigeration appliances sold under the project activity is calculated as follows:

$$E_{PJ,y} = \sum_{k=1}^n (SN_{y,k} - SN_{h,k}) * AEC_{PJ,k} \tag{TA1-3}$$

Where $SN_{y,k}$ and $SN_{h,k}$ are as above and:

| | |
|--------------|---|
| $AEC_{PJ,k}$ | Annual energy consumption of the project refrigerating appliance model <i>k</i> (kWh/y) |
|--------------|---|

$AEC_{PJ,k}$ is the annual energy consumption provided by the appliance manufacturer, measured according to Cenelec standard EN 153, February 2006/EN ISO 15502, October 2005.

Monitoring provisions

During project implementation, dissemination of the project appliances ($SN_{y,k}$) of each model type *k* shall be recorded.

Parameters not monitored are:

- Historical sales of the project appliances ($SN_{h,k}$): Average number of units of refrigerating appliance model *k* sold into the project boundary annually for the three years prior to year $y = 1$.
- Characteristics of each project appliance model *k*, as declared by the manufacturer:
 - Equivalent volume ($V_{eq,k}$), determined according to Annex VIII of the EU Directive 2010/30/EU.
 - Annual energy consumption ($AEC_{PJ,k}$), as specified on the EU Energy Label or in accordance with the provisions of the EU Directive 2010/30/EU.
- The constants M_k and N_k , for which default values are specified in Table VII of the EU Directive 2010/30/EU.

All other parameters are calculated values.

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Technical Annex 2: Dishwashers / Washing Machines

Eligible technology

Fully-automatic washing machines¹¹ for clothing and fully-automatic dishwashers¹² for household dishes.

Scope

- The main source of greenhouse gas emissions reductions for dishwashers and washing machines is the greater system efficiency and resulting lower electricity consumption.
- Consumption of water is considered to be equivalent in the baseline and project appliances, such that reductions in the amount of energy embedded in water are not accounted for, which is conservative.
- All appliance models are eligible, including top-loader and front-loader appliances, whose consumption data is tested with standards EN60456 and IEC60456 for the standard programmes (cotton) for washing machines and standards EN50242 and IEC60436 for dishwashers.
- Washing machines up to 12 kg load and dishwashers up to 15 place settings are eligible, including all types such as built-in, built under and freestanding models.

Electricity Baseline

$$E_{Bl,y} = \Sigma(SN_{y,k} - SN_{h,k}) * SEC_{Bl,k} * CPY_k \tag{TA2-1}$$

Where:

| | |
|-------------------|--|
| SN _{h,k} | Cumulative number of units of each dishwasher/washing machine model <i>k</i> sold into the project boundary under the project activity and still operating in year <i>y</i> , assuming an equipment lifetime of 17 for washing machines and 13 for dishwashers ¹³ |
| SN _{y,k} | Average number of units of refrigerating appliance model <i>k</i> sold into the project boundary annually, averaged over the three years prior to year <i>y</i> = 1 |
| CPY _k | Cycles per year of appliance model <i>k</i> (-). The same value shall be applied to the baseline and the project activity. |

Washing machines:

$$SEC_{Bl,k} = EEI/100 * (0.214 * c + 0.235) \tag{TA2-2}$$

Where:

| | |
|---------------------|--|
| SEC _{BL,k} | Specific baseline energy consumption corresponding to project model <i>k</i> (kWh/cycle) |
|---------------------|--|

¹¹ ‘Household washing machine’ means an automatic washing machine which cleans and rinses textiles using water which also has a spin extraction function and which is designed to be used principally for non-professional purposes.

¹² ‘Household dishwasher’ means a machine which cleans, rinses, and dries dishware, glassware, cutlery and cooking utensils by chemical, mechanical, thermal, and electric means and which is designed to be used principally for non-professional purposes.

¹³ It can be assumed that the project washing machines will remain in operation for 17 years and the project dishwashers for 13 years. Source of data: Welch & Rogers (2010).

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| | |
|-----|---|
| EEl | Energy Efficiency Index. A default value of 68 shall be used. |
| c | Load of project model <i>k</i> (kg) |

This method is based on the assumption that the energy efficiency index (EEl) of the baseline washing machine, as defined in Directive 2010/30/EU, is equal to energy efficiency class A, EEl <68¹⁴

Dishwashers:

For all dishwashers for 10 place settings and more, the electricity baseline is:

$$SEC_{Bl,k} = EEl/100 * (0.025 * ps + 1.35) \tag{TA2-3}$$

For dishwashers with a capacity of less than 10 place settings, the energy baseline is:

$$SEC_{Bl,k} = EEl/100 * (0.09 * ps + 0.45) \tag{TA2-4}$$

Where:

| | |
|---------------------|--|
| SEC _{BL,k} | Specific baseline energy consumption corresponding to project model <i>k</i> (kWh/cycle) |
| EEl | Energy Efficiency Index. A default value of 71 shall be used. |
| ps | Place settings of project model <i>k</i> (-) |

This method is based on the assumption that the energy efficiency index (EEl) of the baseline dishwasher, as defined in Directive 2010/30/EU, is equal to energy efficiency Class A, EEl <71¹⁵

Project appliances consumption

$$E_{PJ,y} = \Sigma(SN_{y,k} - SN_{h,k}) * SEC_{PJ,k} * CPY_k \tag{TA2-5}$$

Where SN_{y,k}, SN_{h,k} and CPY_k are as above and:

| | |
|---------------------|---|
| SEC _{PJ,k} | Specific energy consumption of the project washing machine or dishwasher model <i>k</i> (kWh/y) |
|---------------------|---|

SEC_{PJ,k} is provided by the appliance manufacturer, along with the required supporting documentation (refer to generic methodology monitoring provisions) according to EN60456, IEC60456, EN50242 or IEC60436.

Monitoring provisions

CPY_k shall be determined by an *ex ante* survey conducted prior to validation and repeated prior to each crediting period renewal. The CPY_k values determined by surveys shall be used during the subsequent crediting period. The General guidance on sampling and surveys should be followed, including 90/10 precision requirement. On-site surveys are not required.

¹⁴ This EEl level corresponds to the requirement of energy efficiency class A of “Directive 2010/30/EU of the European Parliament and of the Council with regard to energy labeling of household washing machines”, also EU regulation 1015/2010 for the implementation of Eco design directive 2009/125/EU.

¹⁵ This EEl level corresponds to the requirement of energy efficiency class A of “Directive 2010/30/EU of the European Parliament and of the Council with regard to energy labeling of household dishwashers, also EU regulation 1016/2010.

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Technical Annex 3: Clothes Dryers

Eligible technologies

Project driers must be household tumble driers that operate from electric mains (appliances that can also use other energy sources are excluded). Combined washer-driers are also excluded.

Scope

- The main source of greenhouse gas emissions reductions for clothes dryers is the greater system efficiency and resulting lower electricity consumption.
- If the project model uses a heat pump, the refrigerant is accounted for as project emissions, since the baseline technology is assumed to be a conventional condensing dryer.

Electricity baseline

The electricity baseline for tumble dryers in year y is calculated as follows:

$$E_{BL,y} = (SN_{y,k} - SN_{h,k}) * (SEC_{BL} * W_{laundry}) \tag{TA3-1}$$

Where:

| | |
|---------------|--|
| $SN_{y,k}$ | Cumulative number of units of project tumble driers of each model type k sold into the project boundary under the project activity and still operating in year y, assuming an equipment lifetime of 16 years ¹⁶ |
| $SN_{h,k}$ | Number of units of tumble driers of each model type k sold into the project boundary annually, averaged over three years prior to year y = 1 |
| SEC_{BL} | Specific energy consumption of the baseline tumble drier (kWh/kg laundry or kWh/cycle). A default value of 0.64 kWh/kg shall be used ¹⁷ . |
| $W_{laundry}$ | Average amount of laundry dried annually by a household tumble drier (kg laundry or cycles). The same value shall be applied to the baseline and the project activity. |

Project electricity consumption

The electricity consumption of project tumble driers is calculated as follows:

$$E_{PJ,y} = \left[\sum_{k=1}^n (SN_{y,k} - SN_{h,k}) * SEC_{PJ,k} \right] * W_{laundry} \tag{TA3-2}$$

¹⁶ It can be assumed that the project driers will remain in operation for 16 years. Source of data: Welch & Rogers (2010).

¹⁷ This value corresponds to the requirement of energy efficiency class B for condensing driers contained in Annex IV of “Directive 95/13/EC of 23 May 1995 implementing Council Directive 92/75/EEC with regard to energy labeling of household electric tumble driers”. The CDM Executive Board may wish to review this value, once the work under the EU Ecodesign Directive to update the requirements for clothes dryers (www.ecodryers.org) is completed and a new Directive issued (anticipated in 2011).

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Where $W_{laundry}$, $SN_{y,k}$ and $SN_{h,k}$ are as above and:

| | |
|--------------|---|
| $SEC_{PJ,k}$ | Specific energy consumption of the project tumble drier model k (kWh/cycle or kWh/kg laundry) |
|--------------|---|

$SEC_{PJ,k}$ is the specific energy consumption provided by the appliance manufacturer, according to IEC61121 or EN61121.

Project leakage associated with refrigerant

If the project appliances use heat pump technology, a leakage term ($LE_{PJ,refrigerant}$) shall be added to Equation 2 of the framework methodology to account for possible release of refrigerant and calculated as follows:

$$LE_{PJ,refrigerant,y} = \sum [(SN_{y,k} - SN_{h,k}) * SRC_{PJ,k}] \times GWP_{refrigerant,k} \tag{TA3-3}$$

Where:

| | |
|-----------------------|--|
| $SRC_{PJ,k}$ | Specific refrigerant consumption for model k (t refrigerant/y) |
| $GWP_{refrigerant,k}$ | Global Warming Potential of the refrigerant used by model k in the latest version of the IPCC's assessment report (tCO ₂ e/t refrigerant) |

The specific refrigerant consumption ($SRC_{PJ,k}$) is calculated as the total charge of refrigerant in the project appliance model k ($Q_{refrigerant,k}$), divided by the equipment lifetime of 16 years. This assumes that one full charge of refrigerant will be released to the atmosphere gradually over the equipment lifetime. The total charge amount may be based product specifications provided by the manufacturer, or the default value from Chapter 7: Emissions of fluorinated substitutes for Ozone depleting substances, Volume 3, Industrial Processes and Product Use, 2006 IPCC Guidelines for National Greenhouse Gas Inventories.

Monitoring

During project implementation, sales of the project appliances ($SN_{y,k}$) of each model type k shall be recorded.

Parameters not monitored are:

- Historical sales of the project appliances ($SN_{h,k}$): Average number of units of clothes dryer model k sold into the project boundary annually for the three years prior to year $y = 1$.
- The constant SEC_{BL} in Equation TA3-1, for which a default value is provided.
- The average amount of laundry dried annually by a household tumble drier ($W_{laundry}$), which shall be determined by an *ex ante* survey conducted prior to validation and repeated prior to each crediting period renewal. The $W_{laundry}$ value determined by surveys shall be used during the subsequent crediting period. The General guidance on sampling and surveys should be followed, including 90/10 precision requirement. On-site surveys are not required.
- Characteristics of each project appliance model k , as declared by the manufacturer:
 - Annual energy consumption ($AEC_{PJ,k}$), as specified on the EU Energy Label or in accordance with the provisions of “Directive 95/13/EC of 23 May 1995 implementing Council Directive 92/75/EEC with regard to energy labeling of household electric tumble driers”.
 - Total charge of refrigerant in the project appliance model k ($Q_{refrigerant,k}$).
- GWP values for refrigerants.

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All other parameters are calculated values.

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History of the document

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