

 CDM: Form for Submissions on Small Scale Methodologies and Procedures (version 03) <i>(To be used for presenting questions/proposals/amendments related to the simplified methodologies for small-scale CDM project activity categories)</i>	
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Affiliation¹:	<input type="checkbox"/> DNA <input type="checkbox"/> DOE <input checked="" type="checkbox"/> PP <input type="checkbox"/> Stakeholder
Title/Subject (max. 200 characters):	AMS II.C. Clarifications Concerning Projects Involving Supply and Installation of Water Saving Devices
Purpose of the submission:	<input checked="" type="checkbox"/> Query on an approved SSC methodology or small scale procedures ² (Fill in field 1. below) <input type="checkbox"/> Request for Revision of an approved SSC methodology (Fill in fields 2. and 3. below) <input type="checkbox"/> Proposal for a new SSC methodology (Fill in fields 4. and 5. below)
Approved SSC methodologies² to which your submission relates to, if applicable.	AMS II.C./Version 13 - Demand-side energy efficiency activities for specific technologies
Contact Information (e-mail addresses to which the answers are to be delivered and phone contacts for possible dialogue on the submission).	<u>DanWhite@itr-inc.org</u> , +1-202-306-2730, Skype: danielwdc <u>GeorgeTMaher@itr-inc.org</u> , +1-281-830-8144, Skype: jorge_de_texas <u>f.villasana@southpolecarbon.com</u> , +52 (55) 5564 6793, Skype: fernando_villasana
Information for completing the form Describe the questions related to the SSC Methodologies, Modalities and Procedures below. If the questions are related to a project under development or implementation, you may describe the context in which they arose.	
Query on an approved SSC methodology or SSC procedures	
1. If you have questions relating to the application of an approved small-scale methodology (AMS) please specify and provide reference to the exact technology/measure below. If you have questions related to procedures for SSC project activities please clarify below:	
<p>Our query seeks several clarifications concerning the use of AMS II.C. for a program we are pursuing to supply and install efficient water saving devices in households. Our first project under development aims to distribute efficient showerheads and flow aerators at zero costs to low-income households in the Federal District of Mexico City (Mexico City). In Mexico City nearly all domestic water heaters use either natural gas or LPG.</p> <p>1. Most generally, please clarify if AMS II.C. would be applicable under Paragraph 1 to small scale demand side energy efficiency activities that reduce greenhouse gases emissions by supplying and installing water saving devices that efficiently reduce domestic use of hot water heated via fossil fuels or electricity.</p> <p>Replacing inefficient showerheads and faucet fixtures with efficient ones is analogous to replacing incandescent lamps with compact fluorescent lamps (CFLs). CFLs use less electricity to produce equivalent light output but do not change the rated capacity or efficiency of the electricity generation equipment itself. Similarly, by providing hot water more efficiently, water saving devices result in thermal energy savings through reducing the amount of fossil fuels or electricity used in domestic water heaters. By lowering water heater use of fossil fuels or thermally-generated electricity, such projects reduce</p>	

¹ Designated National Authority (DNA); Designated Operational Entity (DOE); Project Participant (PP), and Stakeholder.

² The list of all approved small-scale methodologies (AMS) can be found at <http://cdm.unfccc.int> and go to CDM: small scale CDM methodologies.

greenhouse gas and other emissions.

2. Regarding Paragraph 2 of the methodology, which refers to limitations on the output or level of service, we seek clarification that this particular applicability requirement will not hinder water saving projects since this specific technology can reduce baseline hot water flow by up to 40%. Water saving devices are designed to replace, or be affixed unto, an existing water fixture or water pipe and maintain the same functional performance or level of service (in terms of water temperature and comfort) for the purposes of cleaning or washing while reducing the amount of water consumed according to local or international standards. In this sense, the level of service provided by a certified efficient showerhead is equivalent in all aspects to a regular showerhead used in the baseline. This is comparable to the luminous efficacy (ratio of luminous flux to radiant flux) of lighting systems, where the observable level of service is the perceived power of light (visible spectrum), rather than the total power of light emitted (including infrared, ultraviolet, and visible light).

Furthermore, by increasing efficiency of hot water supply, water saving devices improve water heater performance but do not change the water heater rated capacity.

3. Paragraph 5 discusses the emission baseline for cases where the energy displaced is fossil fuel based, but does not include relevant equations. We would like to request clarification that the equations provided in Paragraph 6 would also be applicable to demand side energy efficiency projects that directly displace fossil fuels. In the equations provided in Paragraphs 6 and 8, "power" can mean the thermal energy equivalent of the baseline devices, which accommodates the particulars of the project specific technology, as it operates similarly to efficient lighting projects.

A project involving water saving devices and fossil fuel water heaters (such as our Mexico City project) would utilize Paragraph 6 and 8 equations by estimating the total amount of hot water consumed in the baseline and project scenarios (which is the thermal energy consumption in year y) and multiplying that times the relevant emission factor, in accordance to the formulae supplied for the case when the energy displaced is electricity.

For illustrative purposes, an example of the equations from Paragraph 6 and 8 applied to an energy efficiency project of water saving devices is provided below.

For Baseline Emissions

$$BE_y = E_{BL,y} * EF_{CO_2,FF}$$

$$E_{BL,y} = \sum_i (n_i * p_i * o_i) / EFF_{WH}$$

$E_{BL,y}$	=	Energy consumption in the baseline in year y (TJ).
EF_{CO_2}	=	Emission factor for fossil fuels (tCO ₂ /TJ). IPCC default.
p_i	=	Power (thermal energy) of the devices of the group of "i" baseline devices (e.g., 40W incandescent bulb, 5hp motor). In the case of a retrofit activity, "power" is the weighted average of the devices replaced.
o_i	=	Average annual operating hours of the devices of the group of "i" baseline devices.
n_i	=	Number of devices of the group of "i" devices replaced, for which the project energy efficient equipment is operating during the year.
EFF_{WH}	=	Default thermal efficiency for domestic water heaters as per host country ratings.

Where energy p_i of the devices is calculated as follows:

$$p_i = W_{BL,i} * \Delta T_i * C_p$$

$W_{BL,i}$	=	Baseline Water flow at fixture i (litres/hour).
ΔT_i	=	Differential temperature between incoming cold water temperature and hot water temperature at point of use (fixture) i .
C_p	=	Specific heat of water.

For Project Emissions:

$$PE_y = E_{PJ,y} * EF_{CO_2,FF}$$

$$E_{PJ,y} = \sum_i (n_i * p_i * o_i) / EFF_{WH}$$

$E_{PJ,y}$	=	Energy consumption in the project activity in year y (TJ). This shall be determined <i>ex post</i> based on
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monitored values.

Where energy p_i of the devices is calculated as follows:

$$p_i = W_{PJ,i} * \Delta T_i * C_p$$

- p_i = Power (thermal energy) of the devices of the group of “i” water saving devices (e.g., efficient showerheads).
- $W_{PJ,i}$ = Water flow at fixture i (litres/hour) after installation of water saving devices.

4. In the monitoring section of the methodology, we would like to request clarification that Paragraph 12 also would be applicable to demand side energy efficiency projects that displace fossil fuels. More specifically, whether the term “power” also references “thermal energy”, for which records of a representative sample of the replaced devices will be provided to a DOE for physical verification.

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Request for revision of an approved SSC methodology

2. If you are proposing an amendment/revision to an approved small-scale methodology (AMS), please provide justifications below:

3. If you are proposing an amendment/revision to an approved small-scale methodology (AMS) please provide the draft methodology with changes highlighted.

The following documents have been attached to this form:

- ☐ Draft methodology with changes highlighted in Word and PDF formats
- ☐ PDD in PDF format (optional)
- ☐ Additional information (please specify if you are providing any information note, published paper or a report in support of the request for revision of the SSC methodology)

Proposal for a new SSC methodology

4. If you are proposing a new small scale methodology, please provide justifications below:

5. For submitting a new small scale methodology a filled in form “CDM: form for proposed new small scale methodologies (F-CDM-SSC-NM)” is required.

The following documents have been attached to this form:

- ☐ Completely filled in form “CDM: form for proposed new small scale methodologies (F-CDM-SSC-NM)” in Word and PDF formats³
- ☐ A draft PDD (with sections A to C completed):
 - ☐ Relevant annexes to the PDD are provided
 - ☐ Additional information (please specify if you are providing any information note, published paper or a report in support of the new SSC methodology)

Date you are delivering the contribution:

21 September 2010, 20:35 GMT

Information to be completed by the secretariat

SSC-Submission number

³ The current version of the form (F-CDM-SSC-NM) is available on the UNFCCC CDM website (<http://cdm.unfccc.int>).