# CDM: Recommendation Form for Small Scale Methodologies (version 01)

***(To be used for presenting questions/proposals/amendments to the simplified methodologies for small-scale CDM project activity categories)***

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| *Date of SSC WG meeting:* | 11–14 January 2011, SSC WG 29 |
| *Title/Subject (give a small title or specify the subject of your submission, maximum 200 characters):* | Clarification on the applicability of AMS-II.C to project activities which involve installation of water saving devices |
| *Indicative methodology to which your submission relates (refer the items of Appendix B of the Simplified Modalities and Procedures), if applicable.* | AMS-II.C<br>"Demand-side energy efficiency activities for specific technologies" |
| *Name of the authors of the query:* | Daniel E. White, George T. Maher, Fernando Villasana<br>Institution: Investment Technology Resources, Inc.<br>DanWhite@itr-inc.org, GeorgeTMaher@itr-inc.org, f.villasana@southpolecarbon.com |

**Summary of the query:**

Please use the space below to summarize the query related to SSC methodologies/categories SSC Modalities and Procedures provide recommendation/analysis of the SSC WG.

Original text from PP:

We respectfully submit this additional information to our clarification request submitted September 21 in light of the SSC WG suggestions in its October 22 response and the guidance provided by the EB in its November 22 report for meeting 58.

1. Regarding Paragraph 2 of the methodology, the EB stated, "The Board requested the SSC WG to consider that "water output" in paragraph 2 of AMS-II.C is in the specific context of an efficient water pump replacing an inefficient water pump. In the case of water saving devices that reduce domestic use of hot water heated via fossil fuels or electricity the consideration of level of service may be based on comfort and cleaning service provided by the appliance/equipment as per an applicable standard."

A central principle of water sector regulatory agencies and industry associations worldwide that are promoting end-user water saving devices is that level of service is not eroded by efficient water saving products. The efficiency of these products is to use less water while providing equal or better end-user functional comfort and cleaning performance, i.e., equal or better "level of Service." Examples:

- United States Environmental Protection Agency (EPA) – "Products bearing the WaterSense label…[p]erform as well or better than their less efficient counterparts." (http://www.epa.gov/WaterSense/products/showerheads.html) "The WaterSense label also ensures that these products provide a satisfactory shower that is equal to or better than conventional showerheads on the market." (http://www.epa.gov/WaterSense/products/showerheads.html)

- Mexico's Comisión Nacional del Agua (Conagua) – A 1998 normative standard establishing for test-based standards for "efficient" and "ecological" showerheads states that it does so "…without losing comfort for the user's…" (http://www.conagua.gob.mx/CONAGUA07/Contenido/Documentos/N8.pdf) A draft rule scheduled to be finalized in early 2011 provides efficiency standards for faucets fixtures and taps, with the same the finding that the standard will be "…without losing comfort for the user's…" (ANTE-PROY-NMX-AA-000-SCFI-2010).

- New Zealand Ministry of Environment – "The purpose of the label is to help consumers choose products that use less water but still provide a satisfactory level of quality and performance." (http://www.mfe.govt.nz/issues/water/wels-scheme/index.html)

As maintaining level of service (i.e., performance) is a central aspect of efficient water saving devices, water sector standards, certification, and labelling programs require that devices pass tests for various performance attributes such as flow rates across a range of pressures, spray force, spray coverage, heat retention in order to be considered efficient.

- Hong Kong Water Supply Department – "A shower applying for registration under the [water efficiency labeling] scheme will be tested to confirm its compliance with the performance requirements specified in the scheme. These include mean spray spread angle, temperature drop and flow controller endurance." (http://www.wsd.gov.hk/en/plumbing_and_engineering/wels/showers/introduction_to_wels/index.html) "A water tap applying for registration under the scheme will be tested to confirm its compliance with the performance requirements specified in the scheme which also include the flow controller endurance test. In addition, the water tap will be produced/manufactured according to a recognised international quality system (such as ISO 9001)." (http://www.wsd.gov.hk/en/plumbing_and_engineering/wels/water_taps/index.html)

- United States Environmental Protection Agency – "All products bearing the WaterSense label must be tested and certified by an approved third party laboratory to ensure they meet EPA water efficiency and performance criteria." (http://www.epa.gov/WaterSense/products/showerheads.html)

- New Zealand Ministry of Environment – "Both the Australian WELS and the New Zealand WELS are underpinned by a series of joint Australian New Zealand standards. These standards specify the testing requirements for suppliers. The testing requirements are the procedures that must be used to: a. determine the water efficiency and water consumption of a product and b. ensure the product achieves a satisfactory level of quality and performance." (http://www.mfe.govt.nz/issues/water/wels-scheme/index.html)

An important aspect of these water sector activities is that while the standard of maintaining equivalent or better performance is applied, the *requirements* for functionality, and therefore specific tested attributes, varies depending upon local conditions. Water service conditions such as, for example, plumbing regulations, standard pressure, pressure variability, and water quality can affect the requirements for water saving device performance. For example: Service pressure in the United States ranges generally from 40psi (2.8kg/cm$^2$) to 85 psi with an average of about 60psi (4.2kg/cm$^2$). Conditions in Mexico are dramatically different, with service pressure generally ranging from 2.84psi (0.2kg/cm$^2$) to 40psi (2.8kg/cm$^2$) with an average of about 14.2psi (1.0kg/cm$^2$).

Finally, the activity of replacing water devices with more efficient devices does not alter any other attribute of the water supply and heating system. The level of service in terms of pressure, capacity, quality, etc., upstream of the showerhead and faucet fixtures are unchanged.

We believe that the above water sector attributes and practices sufficiently support our request as to Paragraph 2 for a clarification that water saving devices, such as showerheads and faucet taps, that reduce domestic use of hot water heated via fossil fuels or electricity and conform to standards or guidelines appropriate to the host country shall be deemed to have not reduced the level of service.

2. We appreciate the SSC WG's additional discussion and several suggestions related to the proposed activity. To us it appears that neither the discussion nor any of the suggestions conflict with our initial query regarding the applicability of water saving devices as an energy efficiency activity under the Small Scale Methodology AMS II.C.

We agree that a project concerning water saving devices *may* find it advantageous to consider the SSC WG suggestions concerning a range of stipulated fossil fuel or electricity savings values for specific water heater applications, reductions in offsite energy consumption associated with water pumping and water treatment by central utility systems, or a more comprehensive project involving other efficiency activity. While a project involving water saving devices will result in avoided GHG emissions *upstream* of a household (and even *downstream*, related to wastewater transport and treatment), at this time we are not

considering these emission reductions for simplicity and conservativeness of the baseline. Moreover, as our priority is to commence the supply and installation of water saving devices as soon as possible, we are not seeking to establish the suggested stipulations, emissions factors, or a multi-faceted domestic efficiency project due to the extensive additional required resources and time.

The SSC WG also listed a number of matters that are not necessarily described in detail in the approved methodology AMS II.C, such as the potential for removal of devices.[1] We believe that the methodology provides sufficient guidelines for energy efficiency activities in general, and we intend to address matters concerning specific baseline and monitoring data, emission factors, values and parameters, leakage, etc., in relevant sections of the PDD, which will be independently reviewed as per regular process for registration of project activities under CDM.

In summary, we believe the program we are pursuing – supplying, installing, and monitoring water saving devices in many existing households – meets the eligibility conditions under AMS II.C. It is right in line with the purposes stated in II.C Paragraph 1 and, as detailed above, satisfies the Paragraph 2 requirement.

Additionally, our submittal appropriately is in the form of a query rather than a revision. Fundamentally, our clarification requests in sections 3 and 4 of our query can be summarized as (a) that the equations provided in Paragraph 6 would be applicable to demand side energy efficiency projects that directly displace fossil fuels and (b) that the term "power" can mean or reference thermal energy. The example we provided of applying the existing baseline and project emission equations to an energy efficiency project of water saving devices is illustrative of the use of the requested clarifications.

**Recommendation by the SSC WG:**

Please use the space below to provide amendments/change (in your expert view, if necessary).

Please refer to paragraph 33 of the meeting report of the SSC WG 29 <http://cdm.unfccc.int/Panels/ssc_wg>.

**Answer to authors of query by the SSC WG:**

Please use the space below to provide answer to the authors of the above query.

The small-scale working group of the CDM Executive Board would like to thank the author for the submission.

The SSC WG took into account guidance from the Board (EB 58, para 53) indicating that in the case of water saving devices that reduce domestic use of hot water heated via fossil fuels or electricity the consideration of level of service may be based on comfort and cleaning service provided by the appliance/equipment as per an applicable standard. The SSC WG agreed to clarify that in principle the methodology is applicable to the specific project activity that is described as a program to supply and install efficient showerhead and flow aerator water saving devices in households at zero costs to low-income households in the Federal District of Mexico City (Mexico City) to save natural gas or LPG.

However, a number of changes are required for AMS-II.C in order for the methodology to properly accommodate the project activity technology. Some of the identified changes include:

- Clarification of AMS II.C paragraph 2 that example of reduced water flow does not apply to projects involving household water saving devices;
- Modification of AMS II.C paragraphs 6 and 8 to account for fossil fuel (versus only electricity) baseline and project energy consumption;
- Modification of AMS-II.C paragraphs 6 and 8 to account for energy consumption for heating water using some form of the equation: Energy = W * ΔT * Cp/Eff. Where "W" is water flow rate, "ΔT" is differential temperature between incoming cold water temperature and hot water temperature for device, "Cp" is specific heat of water, and "Eff" is efficiency of water heating devices;

[1] We note that one matter the SSC WG mentioned is whether a program involves direct installation versus just distribution. Our program – and therefore our query – includes installation.

- New applicability conditions indicating how to ensure that the efficient project activity device provides the same level of service or better (or within +/- 10%) as compared to the baseline device; potentially through reference to applicable standards;
- Measures (e.g. New monitoring requirements) to account for potential removal or manipulation of devices by consumers who are not satisfied with the devices. For projects that do not involve direct installation of devices, the monitoring of such devices should include confirmation of actual installation rates at the beginning of the crediting period;
- For situations where low flow devices are not provided free of charge, addition of a factor to account for baseline penetration or "free ridership" installation rates of such devices;
- New monitoring requirements for determining baseline and project values for "W", "ΔT", and "Eff".

The query author may also whish to consider the use of a range of stipulated fossil fuel or electricity savings values for specific water heater applications. The SSC WG agreed to invite the author of the submission to submit a revised AMS-II.C or a new methodology for the consideration of SSC WG.

Signed by the Chair, Mr. Peer Stiansen

Date: 14/01/2011

Signed by the Vice-Chair, Mr. Hugh Sealy

Date: 14/01/2011

| **Information to be completed by the secretariat** | |
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