

Response to:

**Call for public inputs on the expansion of the usability of the small scale methodology AMS-III.AV "Low greenhouse gas emitting water purification systems"**

Appropriateness of the maximum volume of purified water per person per day set at 5.5 liters in equation 1 of the methodology taking into account the baseline defined in the methodology, i.e. use of fossil fuel or non-renewable biomass for boiling water;

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The project proponent has developed CDM and Gold Standard water treatment projects in Rwanda and Kenya. Based on the background below, the project proponent advocates that the maximum volume of water available for crediting under AMS-III.AV be increased from 5.5 liters per person per day to 20 liters per person per day.

Through a literature review, the project proponent has demonstrated that national and international standards call for a minimum of 20 litres per person per day (lppd) of potable water. These authorities, including the World Health Organization (WHO) and the Governments of Rwanda and Kenya, reference surveys and studies that establish 20 lppd as a minimum public health standard. The project proponent has also collected survey data at each proposed project site that demonstrate the current use of a certain volume of water per person per day.

When combining the drinking and cooking needs along with the traditional domestic needs for water, a daily requirement of 20 lppd would be an expectable quantity of potable water needed for households in Rwanda and Kenya. This quantity of water is virtually the same amount of water already used by unpiped rural household in this region (19.7 lppd) as cited in previous studies (Thompson, I et al. 2001). The 20 lppd not only meets the Millennium Development Goal for this area, but is also an amount that is already familiar to a large amount of the population. More importantly, through the use of the water treatment systems, this quantity of water will be substantially better than the surface water sources currently used.

The 20-liter basic requirement forms the cornerstone of the United Nation's Millennium Development goal to "halve the proportion of people who are unable to reach or to afford safe drinking water by 2015" (UN 2007). According to the WHO, "basic access" to water is defined as an improved water source within 100 and 1000 meters of the household (WHO 2003). Based on the time and distance needed to retrieve water from this source, the average quantity of water retrieved would be approximately 20 lppd. This amount of water would be expected to meet basic consumption needs and provide for basic domestic and personal hygiene activities. The incremental increase in health benefits of water quantity up to this amount has been shown to be beneficial, but benefits beyond this level are not as widely known (Esrey and Habicht 1986).

Once collected, the 20 liters of water meets the physiological needs for clean drinking water as well as the amount of water traditionally used in this region for personal and domestic hygiene. For drinking and cooking, a minimum of 7.5 liters is needed each day to meet these consumption needs (WHO 2003). This minimum amount of water is based on the amount required by adults performing moderate activity in high ambient temperatures (4.5 liters per day). When

considering the increased needs of lactating women, the daily water requirement increases to 5.5 liters per day. In addition to the drinking water requirement, another 2 liters of clean water is required for food preparation (WHO 2003). The final 7.5-liter guideline correlates well with the average amount of water already used in this area. In this region of Africa, the average amount of water used for drinking and cooking was 3.8 lppd during the period of 1997-1999 (Thompson, I et al. 2001). This amount was fairly constant between both piped households (4.2 liters) and unpiped households (3.8 liters).

The quality of the water for cooking should also be of the best quality available. Waterborne illnesses are transmitted by direct ingestion of organisms in the drinking water. Ideally, the total absence of bacteria would be the goal, but such a quality is not practical in developing nations. Instead, "a quality that represents a tolerable level of risk" is the primary guideline for drinking water quality (WHO 2003). Likewise, bacteria present in low doses in food preparation water may incubate and multiply in the food, allowing infectious dose of organism to be produced (Esrey and Habicht 1986). Given this possible transmission in food, the water for food preparation should be of the same quality as drinking water.

Based on the background provided above, the project proponent advocates that the maximum volume of water available for crediting under AMS-III.AV be increased from 5.5 liters per person per day to 20 liters per person per day.



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#### **References:**

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