

## Input to the EB about the new methodology SSC-III.AV "Low greenhouse gas emitting water purification systems"

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CDM Executive Board  
Martin Luther King Strasse 8  
P.O. Box 260124  
D-53153

Dear Members of the Executive Board of the CDM,

We, consultants at Perspectives, South Pole, Geres and Pöyry are currently working on a DFID mandate to develop standardized methodologies that would be especially suitable for LDCs. We support the effort of bringing services to the poorest and making more development projects feasible thanks to carbon finance, yet these efforts have to be balanced with the need to preserve the environmental integrity of the CDM.

**We think that the new methodology SSC-III.AV is significantly non-conservative and undermines the environmental integrity of this project type.**

### 1. Appropriateness of the maximum volume of purified water per person per day set at 5.5 liters

We strongly feel that a cap of 5.5 liters is at the upper limit of what is defensible and no cap (as in case 1) is significantly non-conservative and undermines the environmental integrity of this project type. To illustrate we use a hypothetical project example:

- Baseline: 20% of all families boil on average 2 liters of water per person per day using 50% non-renewable biomass. Average size of family: 5.
- Project: 90% of families get a household water purifier that has the capacity to purify 100 litres per day.

Table 1 shows how many CERs would be awarded to a hypothetical water purification project under the different methodologies. (Please refer to Annex 1 for all assumptions used in this example.) Under case 1 of the current methodology CER generation is well over 3 times higher than the exact same project would be under case 2. It is 60 times higher than the actually achieved emissions reductions if suppressed demand is not taken into account.

**Table 1 CERs awarded under different methodologies using a hypothetical water purification project**

Methodology	Suppressed demand taken into account	Cap	CERs per year
AM0086	no	Maximum credits calculated based on historical fuel consumption	954
AMS.III.AV case 2	yes	Maximum Credits capped at 5.5 l/p/d	16,397
AMS.III.AV case 1	yes	Maximum Credits not capped, based on maximum manufacturer's specified capacity, assumed to be 20 l/p/d	59,624

Boiling larger quantities of safe water (for uses beyond drinking water) is unrealistic because of high costs (for fuel). If larger quantities of water are purified, most families are very likely to use non-boiling techniques such as chlorine or filtering treatment. It is therefore non-conservative to allow for quantities beyond 5.5 litres per person

per day to receive credits.<sup>1</sup> Furthermore, assuming that the maximum manufacturer's specified capacity of the distributed water purification system is the actual amount that is purified in each household that received such a device is in most cases unrealistic and non-conservative.

It is important to keep in mind that limiting the amount of creditable water is not the same as limiting the amount of clean drinking water that is made available. **In no way do we want to suggest that people have only the right to 5.5 litres of clean water.** We argue instead that it is unrealistic to assume people would purify more than 5.5 litres per person per day through boiling. A cap is realistic and preserves the environmental integrity of this project type.

## **2. Appropriateness of the threshold proportion of rural population using an improved drinking source.**

We recommend that the requirements be the same for rural as for urban areas as many urban slum areas also are in need of water purification programs. In our methodology revision, we do not give preference to rural areas over and slum areas.

Thank you for giving us the opportunity to comment on methodology SSC-III.AV

Sincerely yours,

Anja Kollmuss, South Pole Carbon Asset Management  
Nicolas Müller, Perspectives  
Randall Spalding-Fecher, Pöry Management Consulting

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<sup>1</sup> Even the assumption that people would boil 5.5. liters per day per person is generous: several clean drinking water experts have pointed out that the amount in the field is usually well below that figure. One study estimated that fuel costs would consume 10-24% of a households income in Bangladesh, if all drinking water (only drinking water) was boiled, Gilman and Skillcorn (1985).

## Annex 1

### Assumptions of the hypothetical water purification project

- **Historical consumption:**  
Before the project, 20% of the population boiled an average of 2 litres per person per day.
- **Project population: 35,000**  
7,000 households that have received the water purification device. Each household has an average of a 5 people. The population size was chosen so that AMS.III.AV case 1 would stay within the SSC limit of 60,000 CERs per year.
- **f<sub>NRB</sub> = 0.8**  
The amount of for non –renewable biomass used in the baseline for boiling water is assumed to be 90%
- **η<sub>wb</sub> = 0.1**  
The stove efficiency is based on a simple three stone stove.
- The example assumes a zero emissions project assumption.

The table below lists all the parameters used in the calculations. Please note that for AM86 the same emissions factor (EF) was assumed as for all other cases. If the methodology was followed strictly, the EF would be lower (63 tCO<sub>2</sub>/TJ) and total CER generation would be 737.

Parameters	AM0086	AMS.III.AV case 2	AMS.III.AV case 1	unit
<b>Baseline emissions during the year y in (tCO<sub>2</sub>e)</b>				
f <sub>NRB</sub>	80%	80%	80%	
EF	81.6	81.6	81.6	tCO <sub>2</sub> /TJ
<b>BE</b>	<b>954</b>	<b>16,397</b>	<b>59,624</b>	<b>tonCO<sub>2</sub>/y</b>
<b>Specific energy consumption required to boil one litre of water (SEC)</b>				
WH	4.186	4.186	4.186	kJ/L °C
T <sub>f</sub>	100	100	100	°C
T <sub>i</sub>	20	20	20	°C
WHE	2260	2260	2260	kJ/L °C
η	10%	10%	10%	
<b>SEC</b>	<b>3574.8</b>	<b>3574.8</b>	<b>3574.8</b>	<b>kJ/L</b>
<b>Eligible quantity of purified water in year y (QPWy)</b>				
cap	2	5.5	20	l/p/d
P <sub>i</sub>	7,000	35,000	35,000	p
<b>QPWy</b>	<b>5,110,000</b>	<b>70,262,500</b>	<b>255,500,000</b>	<b>l/y</b>