



**Approved baseline and monitoring methodology /
methodological tool clarification response form
(Version 03.0)**

INFORMATION TO BE COMPLETED BY THE SECRETARIAT OR PANEL / WG

Date and number of Panel / WG meeting:	N/A
Title/Subject of the request for clarification:	Clarification on the applicable equations and parameters for manure management systems with organic bedding in AMS-III.Y.
Reference number of the request for clarification:	SSC_779
Exact reference (number, title and version) of the methodology or methodological tool to which the request for clarification applies:	AMS-III.Y.: Methane avoidance through separation of solids from wastewater or manure treatment systems --- Version 4.0
Fast track or Regular track:	<input checked="" type="checkbox"/> Fast track <input type="checkbox"/> Regular track

Summary of the request for clarification

Original text from Stakeholder:

We would like to have clarification of 3 points in the AMS-III.Y Small-scale methodology: Methane avoidance through separation of solids from wastewater or manure treatment systems Version 04.0 Sectoral scope(s): 13

1) Are equations 1 and 2 reversed?

It is not clear from the description of the methodology if farms that use bedding are allowed to use the methodology but can't include the added organic material in the estimate of baseline emissions, or if the practice is allowed and the added organic material from bedding can be accounted for. If this latter is the case, are equations 1 and 2 reversed?

Paragraph 24: "when organic bedding material is used in the animal barns or added to the manure stream, baseline emissions shall be calculated as follows":

$BE_y = (Bo_{w,y} \times \sum (NLT_{y,y} \times VSLT_{y,y} \times PLT_{y,y} \times EFFSS_{p,y}) LT \times UFb \times GWPC_{H4} \times DCH4/1000) \times \sum (MSBL_{i,i} \times MCFb_{i,i})$ Equation (2) is based exclusively on the number of animals and the volatile solids (VS) produced by each animal. The equation doesn't allow the addition of bedding material.

However, **paragraph 23** "in the case of a manure stream where the barns do not use any organic bedding materials, baseline emissions shall be calculated based on the total mass of the volatile solids separated as below"

Equation (1) $BE_y = (Bo_{w,y} \times Mss_{y,y} \times VSss_{y,y} \times UFb \times GWPC_{H4} \times DCH4/1000) \times \sum (MSBL_{i,i} \times MCFb_{i,i})$

This equation would allow the addition of the bedding material that ends up in the anaerobic lagoon as it is based on the amount of the VS component of the total mass separated, independently from its origin.

2) Paragraph 25. Could, in case of manure management systems, the $EFFSS_{p,y}$ - the efficiency in separating the solids - be based on the removal of volatile solids and not total solids? The inorganic part of the manure doesn't contribute to CH₄ emissions. The equations and emission factors in the methodology for manure management are based on VS.

Why $EFFSS$ is not used in equation 1 and 8? If a project applies equations 1 and 8 it is not necessary to monitor the efficiency of the separation?

3) Is "x Vs" missing in the project manure emission equation 8?

In **paragraph 30.** $PE_{y,ss} = MCF_{s,y} \times UFp \times Bo_{w,y} \times Mss_{y,y} \times GWPC_{H4} \times DCH4/1000$ Equation (8)

In equation 8, MCF and Bo are applied to Mss (defined in equation 1 as Mass (dry matter basis of total separated solids in year y (kg)). However, in baseline equations 1 and 2 for manure management systems only the volatile component of the mass of separated solids is considered. In equation 1 Mss is multiplied by the Vs component of the separated solids. Equation 2 includes only the animal produced VS. To consider the separated total mass for project conditions would increase disproportionately project emissions compared to baseline condition. More importantly, in the IPCC guidelines, 2006, MCF and Bo were determined and applied to the VS component only of the total solids.

Clarification by the secretariat or Panel / WG

The Methodologies Panel (MP) of the CDM Executive Board would like to thank the author for the submission.

The MP agreed to clarify as follows:

- 1) As stated in paragraphs 23 and 24 of the methodology, for barns that do not use any organic bedding materials, baseline emissions shall be calculated as per equation 1, and when organic bedding material is used in the animal barns or added to the manure stream, baseline emissions shall be calculated as per equation 2, which conservatively excludes the organic bedding materials.
- 2) Paragraph 25 applies to mechanical separation technologies (as defined in paragraph 4b) and requires for simplicity, that the separation efficiency of the project separation system is determined at the time of commissioning (and annually thereafter) as the ratio of total separated solids over the total solids of the influent, by simultaneous sampling and measurement of total solids content of the influent and effluent liquid streams. Equations 1 and 8 are based on the mass of separated solids ($M_{ss,y}$), which is measured by direct weighing of all separated solids, and measuring its dry matter content through representative sampling.
- 3) As paragraph 30 refers to project emissions from the storage of separated solids, it is calculated conservatively based on the mass of total separated solids (dry basis) in year y. Therefore, applying the volatile component (VS) would result in less conservative estimations.

The MP further clarifies that the submitter may choose to propose a revision to the approved methodology, in accordance with section 6 of the procedure: "Development, revision and clarification of baseline and monitoring methodologies and methodological tools" v02.1, or seek guidance from the Board on the acceptability of a deviation from the approved methodology, in accordance with section 4.7 of the "CDM project cycle procedure for project Activities" v02.

Version(s) of the approved methodology / methodological tool to which the clarification is applicable:

AMS-III.Y.: Methane avoidance through separation of solids from wastewater or manure treatment systems --- Version 4.0

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Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
03.0	13 May 2016	Revised to include the row "Version(s) of the approved methodology / methodological tool to which the clarification is applicable"
02.0	18 July 2013	Revised to remove the row "Date and signature of the chair and vice chair of Panel/WG (in case of clarification by Panel/WG)"

<i>Version</i>	<i>Date</i>	<i>Description</i>
01.	4 July 2013	<p>Initial publication. This document supersedes and replaces the following documents:</p> <ul style="list-style-type: none">• Recommendation Form for Small Scale Methodologies (F-CDM-SSCwg) (Version 01.1)• Recommendation Form for Small Scale A/R Methodologies and Procedures (F-CDM-SSC-AR) (Version 01.1)
<p>Decision Class: Regulatory Document Type: Form, Clarification Business Function: Methodology Keywords: applying methodologies and tools</p>		