



**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)*

<b>Date of SSC WG meeting:</b>	19–22 October 2010, SSC WG 28
<b>Title/Subject (give a small title or specify the subject of your submission, maximum 200 characters):</b>	Clarification on the applicability of AMS-III.I to vermicomposting project activities
<b>Indicative methodology to which your submission relates (refer the items of Appendix B of the Simplified Modalities and Procedures), if applicable.</b>	AMS-III.I “Avoidance of methane production in wastewater treatment through replacement of anaerobic systems by aerobic systems”
<b>Name of the authors of the query:</b>	Ana Carnal Institution: Zero Emissions Technologies SA <a href="mailto:ana.carnal@zeroemissions.abengoa.com">ana.carnal@zeroemissions.abengoa.com</a> , <a href="mailto:daniel.garcia@zeroemissions.abengoa.com">daniel.garcia@zeroemissions.abengoa.com</a> , <a href="mailto:elena.fernandez@zeroemissions.abengoa.com">elena.fernandez@zeroemissions.abengoa.com</a> , <a href="mailto:maria.garcia@zeroemissions.abengoa.com">maria.garcia@zeroemissions.abengoa.com</a>

**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:

Paragraph 1 of the methodology states that:

*“This methodology comprises technologies and measures that avoid the production of methane from biogenic organic matter in wastewaters being treated in anaerobic systems. Due to the project activity, the anaerobic systems<sup>1</sup> (without methane recovery) are substituted by aerobic biological systems<sup>2</sup>. The project activity does not recover or combust methane in wastewater treatment facilities (unlike AMS-III.H)”.*

Footnote n°2 refers to “Systems using oxygen and microbial action to treat wastewaters”.

The composting process is considered in the methodology only for the generated sludge, taking into account that composting is usually applied on solid or semi-solid matter.

However, there are other techniques which directly apply the composting process on wastewater when organic matter and dry matter in wastewater are high enough. One of these techniques is “vermicomposting”, based on the ability of certain kinds of worms to metabolize the organic matter in wastewater aerobically.

Obviously, this composting treatment cannot be considered a microbial action since it is made by worms. The treatment would consist on the following:

1. Wastewater with high organic matter content is applied over a (sawdust-worm) bed by sprinkles.
2. The bottom floor of the chamber recedes through a slide slope for collection of excess organic wastewater which is reused sprayed on earthworm.

The wastewater is sprayed on the worm-sawdust bed directly, without being previously treated or concentrated to increase the dry matter content. Hence, it is not sludge. And it is not a microbial action that takes place.

However, this treatment concludes with an aerobic water treatment which avoids methane generation and release to the atmosphere.

The Project Proponent's question is whether AMS.III.I could be applicable to this kind of technology, taking into account that the treatment process is applied directly on wastewater and that it results in a composting treatment by worms.

#### **Recommendation by the SSC WG:**

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

Please refer to paragraph 11 of the meeting report of the SSC WG 28  
<[http://cdm.unfccc.int/Panels/ssc\\_wg](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 agreed to clarify that the following issues have to be clarified by the project proponent before further considering the underlying technology/measure (vermicomposting):

1. Methane emissions associated with possible anaerobic zones in the treatment process shall be taken into account and can only be neglected when aerobic conditions can be clearly evidenced with monitored data, e.g. methane emissions during composting can be set to zero when monitored oxygen content of the composting process is above 8% (please refer to paragraph 24, AMS-III.F "Avoidance of methane emissions through controlled biological treatment of biomass" version 8). Similarly, for vermicomposting, it needs to be clarified that the methane emissions from possible anaerobic pockets in the vermicomposting bed/filter have been considered, and if such emissions are deemed to be negligible, justification (e.g. based on monitoring requirements) needs to be provided;
2. In assessing this submission, it was noted by the SSC WG from the literatures such as a study by A.M. Hobson et al. (CH<sub>4</sub> and N<sub>2</sub>O from mechanically turned windrow and vermicomposting systems following in-vessel pre-treatment) that more N<sub>2</sub>O is generated during the vermicomposting process, compared with the well-controlled windrow turning composting process. This effect needs to be clarified/addressed. The project proponent is welcome to provide other substantive evidences (e.g. studies, report, etc.) to justify if this possible emission source is deemed to be negligible.

Signed by the Chair, Mr. Peer Stiansen

Date: 22/10/2010

Signed by the Vice-Chair, Mr. Hugh Sealy

Date: 22/10/2010

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

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