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)

Date of SSC WG meeting:	31 August - 1 September 2006
Title/Subject (give a small title or specify the subject of your submission, maximum 200 characters):	Request for revision of AMS-III.F to include the avoidance of methane production from anaerobic treatment of wastewater through composting
Indicative methodology to which your submission relates (refer the items of Appendix B of the Simplified Modalities and Procedures), if applicable.	AMS III.F.
Name of the authors of the query:	Michel Buron for Inversiones de Dessarrollo S.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.

Inversiones de Dessarrollo S.A. suggests changing the scope of AMS III.F, including the methane avoidance from wastewater treatment through composting, when wastewater is added as a source of moisture and possibly nutrients in a composting facility. A draft PDD of a project activity with this approach is presented, together with a draft proposal for the revision of AMS III.F.

Recommendation by the SSC WG:

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

Please refer to Paragraph 13 of the meeting report of the SSC WG 07 (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 scope of AMS III.F is the *"Avoidance of methane production from biomass decay through composting"*. This technology is obviously only applicable to solid wastes, since composting is a solid/air contacting process, with an aerobic stabilisation of the biomass. Nevertheless, moisture content of the solid waste, and its nutrients content for the biologic activity are very important parameters to the process, besides temperature, aeration, and others. Moisture is a limiting parameter, both at its lowest values, where the biological activity diminishes, and at the highest ones, where the aeration and oxygen diffusion are affected, anaerobic conditions appear and odours (and methane) are generated.

The project activity described by the author is applicable to the composting of solid waste consisting of empty fruit bunches (EFB) generated in a palm oil extraction industry. The process will use palm oil mill effluent (POME), as a source of moisture and nutrients. In the baseline, POME is treated in anaerobic lagoons without methane recovery, and in the project scenario the composting process will use approximately 75% of this untreated wastewater, eliminating the need for two of the three existing anaerobic lagoons.

The PDD does not explain how the ratio of use of POME/EFB can be calculated. The wastes are disposed in windrows (1.3 m high, 80 m length), covered by an air-permeable plastic sheet, that contributes to accelerate the decomposition by maintaining the temperature and moisture inside the windrows and also by preventing drenching or leaching during heavy rain. It is mentioned that every 3 days POME will be sprayed in a ratio of

3.64 m3/ton EFB, during the composting process, which lasts for 12 weeks. It is also mentioned that the moisture content of the composting environment should be maintained at 65%, and will be monitored daily (the monitoring plan in the PDD does not include this monitoring procedure and also the proposed amendment to AMS III.F does not address this issue).

The unclear questions are:

(1) The proposal can be considered as changing the scope of the methodology using the composting technology to avoid methane from solid waste as well as wastewater. Proposing a new category for the intended project activity may be more appropriate.

(2) A procedure to estimate and control the ratio of application of wastewater to the solid waste to maintain optimum moisture levels in the compost is not clearly presented. This will be a critical aspect for this activity: A formula or method for estimating ex-ante the amount of wastewater to be treated by the process should also be proposed and the procedure to monitor the moisture content during the composting time. The same applies to the control of bulk density and free air space of the compost when different kind of wastes are composted. In many applications of AMS-III.F, the solid waste to be composted will already show high moisture content or low field capacity (i.e., the capacity to accept water without becoming saturated) and will have only limited capacity to accept the irrigation procedure. The varying weather conditions (in spite of the use of the plastic sheet, see the point below) will also strongly affect the maximal amount of wastewater that can be added to the composting environment in each application. If a project operator, in order to achieve the consumption of the amount of wastewater that is necessary to avoid the use of the anaerobic lagoon, is tempted to apply more wastewater than reasonable, the process will become anoxic or even anaerobic, and methane will be released.

(3) The role of the plastic sheet used for covering the windrows is also unclear. The plastic sheets themselves are not described in the methodology. They are declared as air-permeable, apparently permeable to water vapour released by the composting environment, but impermeable to water from rainfall. A technical specification of the cover material is necessary. It seems to be the key for achieving the double activity of the composting facility, stabilizing both the solid waste and wastewater, with high loss of water vapour to the atmosphere, high diffusion of oxygen across it for the aerobic process, but low intake of rainwater.

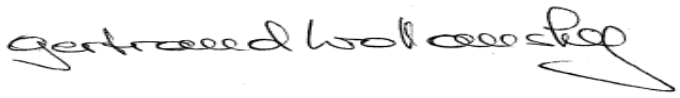
(4) It is also unclear how the composting windrows will accomplish biological stabilization of the organic content of the wastewater applied to them. Untreated wastewaters show usually a high COD and BOD content (the value for POME is not presented in the PDD), and can be fast or slow decaying, according to its composition. Since the project activity will spray 3.64 m3/ton of fresh wastewater every 3 days during 12 weeks, it is not guaranteed that the COD content of the wastewater in the last applications will be stabilized in the short time remaining to the conclusion of the composting. Also, the final moisture content of the compost produced is not specified in the PDD. The compost to be stocked in piles (or packed in bags, as described in the PDD) must have limited moisture content, in order to prevent the further biological activity, under anaerobic conditions, especially if it was sprayed with untreated wastewater shortly before the end of the composting process. Perhaps the application of wastewater should be restricted to the initial phases of the composting procedure, especially in case of very high COD content and/or slow decaying wastewater. Also, a limit to the moisture content in the final compost (lower than the moisture content for the biological activity) can be explicitly included as a clause, in order to prevent the further decay under anoxic conditions.

(5) The proposal mentions that the project activity will use 75% of the untreated wastewater, eliminating the need of two of three existing lagoons. Nevertheless, the PDD and proposed methodology don't include the verification of complete deactivation of the anaerobic lagoons in the project scenario. Indeed, in order to achieve the methane avoidance, the anaerobic lagoons must be deactivated fully, and this must be documented by monitoring. In addition the methodology could include measurement and recording of the wastewater flow treated by the remaining lagoon in the project scenario. Sampling and analysis of the COD content of the wastewater to compare with the baseline conditions for the flow and COD needs to be included in order to calculate the emission reductions.

(6) Finally, the submission mentions that the project scenario should include the additional emissions "due to the transport of the wastewater", that "can be estimated by $PE_{y,power}$ or $PE_{y,transport}$ methods depending

on how it is transferred (e.g. pumping or tanking)". The estimation procedure for this source of emission is nevertheless not included either in the methodology or in the PDD.

The SSC-WG-7 considers therefore that the proposed changes cannot be accepted as presented as revising the approved methodology on those grounds could result in severe imprecision and uncertainty in the baseline and project monitoring. The project participants are welcome to evaluate the above questions and make new submissions to the SSC WG.



Signature of SSC WG Chair ……..
Date: 06/ 09 /06 *(Gertraud Wollansky)*

Signature of SSC WG Vice-Chair ……..
Date: 06/ 09 /06 *(Richard Muyungi)*

Information to be completed by the secretariat	
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