Indicative simplified baseline and monitoring methodologies
for selected small-scale CDM project activity categories

TYPE III - OTHER PROJECT ACTIVITIES

Project participants shall take into account the general guidance to the methodologies, information on additionality, abbreviations and general guidance on leakage provided at http://cdm.unfccc.int/methodologies/SSCmethodologies/approved.html.

III.Y. Methane avoidance through separation of solids from wastewater or manure treatment systems

Technology/measure

1. This methodology comprises technologies and measures that avoid or reduce methane production from anaerobic wastewater treatment systems[1] and anaerobic manure management systems,[2] through removal of (volatile) solids from the wastewater or manure slurry stream. The separated solids shall be further treated, used or disposed in a manner resulting in lower methane emissions.

2. The project activity does not recover and combust biogas i.e., the baseline wastewater or manure treatment plant as well as the project system are not equipped with methane recovery. Project activities which recover and combust biogas from manure management systems shall consider AMS-III.D or AMS-III.R. Project activities which recover and combust biogas from wastewater treatment systems shall consider AMS-III.H. Project activities that substitute anaerobic wastewater treatment systems with aerobic wastewater treatment system shall consider AMS-III.I.

3. The technology for solids separation shall be one of the below or a combinations thereof so as to achieve a minimum dry matter content of separated solids larger than 20%:

(a) A pre-separation phase of chemical treatment by mixing flocculent chemicals with the wastewater, adopted to improve the efficiency of the subsequent mechanical solid-liquid separation process;

(b) Mechanical solid/liquid separation technologies (e.g., stationary, vibrating or rotating screens, centrifuges, hydrocyclones, press systems/screws), operated in-line with the inflowing freshly generated wastewater or slurry manure stream so as to avoid stagnation;

(c) Thermal treatment technologies that evaporate water content from the waste stream, either releasing vapour to the atmosphere or condensing it into a liquid fraction (condensate) containing negligible volatile solids or COD load, resulting in a solid fraction. Examples include evaporation and spray drying technologies[3].

[1] As defined in 2006 IPCC Guidelines for National Greenhouse Gas inventories, Volume 5, Chapter 6, Wastewater treatment and discharge, table 6.3 and 6.8.

[2] As defined in 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 4, Chapter 10, Emissions from livestock and manure management, Table 10.18, "Definitions of Manure Management Systems".

[3] Spray drying is a method of drying a liquid feed through a hot gas. A micro spray is produced in the turbulence zone of hot air, which evaporates the solvent.

Indicative simplified baseline and monitoring methodologies
for selected small-scale CDM project activity categories

III.Y. Methane avoidance through separation of solids from wastewater or manure treatment systems (cont)

4. The dry matter content of separated solids shall remain higher than 20% throughout until its final disposal, destruction or use (e.g., spreading on the soil). The total time interval for the separation process until 20% dry matter content is achieved shall be less than 24 hours.

5. Separation of solids using gravity (settlinger tanks/basins, ponds, or geotextile containers/bags) is not included in this methodology.

6. In case of animal manure management systems the following conditions apply:

(a) Animals shall be managed in confined conditions;

(b) No organic bedding material is used in the animal barns or intentionally added to the manure stream;

(c) If the baseline manure slurry was treated in an anaerobic lagoon or another liquid treatment system, the outflow liquid from the lagoon was recycled as flush water or used to irrigate fields; however it was not discharged into river/lake/sea. In the latter case, i.e., effluent discharge into river/lake/sea, the system is considered as a wastewater treatment system and not a manure management system;

(d) A minimum interval of six months was observed between each removal of the solids accumulated in the lagoon.

7. In case of wastewater treatment systems the following conditions apply:

(a) The baseline treatment systems do not include a fine solids separation process (i.e., grading smaller than 10 mm aperture, primary settlers, mechanical separation, etc.);

(b) In case the baseline treatment system was an anaerobic lagoon or a liquid system, a minimum interval of 30 days was observed between each removal of the solids accumulated in the lagoon.

8. This methodology is not applicable when the project treats solids removed from an existing lagoon, or sludge originated from settlers or from any other biologically active treatment device of the baseline animal manure management/wastewater treatment system.

9. The separated solids shall be further treated, emissions resulting from further treatment, storage, use or disposal shall be considered. If the solids are combusted for thermal or heat generation, that component of the project activity can use a corresponding methodology under type I. If the solids are mechanically/thermally treated to produce refuse-derived fuel (RDF) or stabilized biomass (SB) the relevant provisions in AMS-III.E shall be followed. If the solids are used as animal feeds (e.g., feed to cows, pigs), any emissions from enteric fermentation and

emissions from the manure, depending on the treatment system in those instances shall be considered as project emissions[4].

10. The liquid fraction from the project solid separation system shall be treated either in the baseline treatment facility or in a treatment system with a lower methane conversion factor (MCF) than the baseline system[5].

11. This methodology applies to situation where the baseline treatment systems have been operational at least 3 years before the date of the project starts. New facilities (Greenfield projects) and project activities involving a change of equipment resulting in an efficiency improvement or capacity addition of the wastewater or sludge treatment system compared to the designed capacity of the baseline treatment system are only eligible to apply this methodology if they comply with the requirements in the General Guidance for SSC methodologies[6] concerning these topics. In addition the requirements for demonstration of the remaining lifetime of the equipment replaced as described in the general guidance shall be followed.

12. In case flocculent is used in the project activities, project emissions and leakage from use of flocculent should be taken into account.

13. Measures are limited to those that result in emission reductions of less than or equal to 60 Kt CO_2 equivalent annually.

Boundary

14. The project boundary is the physical, geographical site:

(a) Where the animal waste would have been collected, stored and treated and the methane emission would have occurred in the absence of the proposed project activity;

(b) Where the wastewater treatment would have taken place and the methane emission would have occurred in the absence of the proposed project activity;

(c) Where the treatment of animal waste or wastewater through solids separation takes place;

(d) Where the storage, gainful use, destruction and/or land application of the separated solids takes place;

(e) The itineraries between them, where the transportation of separated solids occur.

[4] Project participants are encouraged to submit a request for revision to include guidance on how to consider project emissions in this instance taking into account the methods of 2006 IPCC Guidelines for National Greenhouse Gas Inventories.

[5] Thermal treatment systems are excluded as the condensate is expected to have negligible COD load.

[6] Refer to: "General guidance to Indicative simplified baseline and monitoring methodologies for selected small-scale CDM project activity categories".

Indicative simplified baseline and monitoring methodologies
for selected small-scale CDM project activity categories

III.Y. Methane avoidance through separation of solids from wastewater or manure treatment systems (cont)

Baseline

15. The baseline scenario is the situation where the solids separated from manure stream or from the wastewater would be treated in the wastewater treatment or manure management system within the project boundary, without methane recovery, and methane is emitted to the atmosphere.

16. In the determination of baseline emissions, historical records of at least one year prior to the project implementation shall be used[7]. In case one year of historical data are not available, the parameters shall be determined by a measurement campaign in the baseline wastewater systems of at least 10 days. The measurements should be undertaken during a period that is representative for the typical operation conditions of the systems and ambient conditions of the site (temperature, etc). Average values from the measurement campaign shall be used and the result shall be multiplied by 0.89 to account for the uncertainty range (30% to 50%) associated with this approach as compared to one-year historical data.

17. In the case of manure stream baseline emissions shall be calculated based on the total mass of the volatile solids separated as below:

$$BE_y = (B_{o,w,y} * M_{ss,y} * VS_{ss,y} * UF_b * GWP_{CH4} * D_{CH4} / 1000) * \sum_i \left(MS_{Bl,i} * MCF_{b,i}\right) \quad \textbf{(1)}$$

Where:

BE_y	Baseline emissions in year y (tCO_2e)
$B_{o,w,y}$	Weighted methane-producing potential of the volatile solids separated by the project in year y (m^3 CH_4 per kg of VS)
$M_{ss,y}$	Mass (dry matter basis) of total separated solids in year y (kg)
$VS_{ss,y}$	Volatile solids content of the separated solids in year y on a dry matter basis (kg/kg)
UF_b	Model correction factor to account for model uncertainties (0.94)[8]
GWP_{CH4}	Global Warming Potential of methane (value of 21)
D_{CH4}	Conversion factor of m^3 CH_4 to kilograms (0.67 kg per m^3 at 20°C and 1 atm pressure)
i	Index for baseline anaerobic manure management system

[7] In case of wastewater it may include COD removal efficiency of the wastewater treatment systems, amount of dry matter in sludge, amount of final sludge generated per tonne of COD treated, power and electricity consumption per m^3 of wastewater treated, and all other parameters required for determination of baseline emissions.

[8] Reference: FCCC/SBSTA/2003/10/Add.2, page 25.

Indicative simplified baseline and monitoring methodologies
for selected small-scale CDM project activity categories

III.Y. Methane avoidance through separation of solids from wastewater or manure treatment systems (cont)

$MS_{Bl,i}$	Fraction of manure handled in the baseline anaerobic manure management system *i* (fraction, mass basis), based on historical information from previous 3 years before project. If historical information is not available, the capacity (tonne/day) of each baseline management system shall be verified before the project start. During the project, it would be assumed that the management systems with lower MCFs would be used up to their full capacity, and only thereafter the systems with larger MCF would be used. The value of $MS_{Bl,i}$ is '1.0' if only one type of treatment system was used in the baseline.
$MCF_{b,i}$	Methane conversion factor for the baseline anaerobic manure management system *i* as per 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 4, Chapter 10

18. The weighted methane-producing potential of the volatile solids separated from manure stream are calculated as follows:

$$B_{o,w,y} = \sum_{LT}\left(B_{0,LT} * N_{LT,y} * VS_{LT,y}\right) / \sum_{LT}\left(N_{LT,y} * VS_{LT,y}\right) \quad \textbf{(2)}$$

Where:

LT	Index for livestock type
$B_{0,LT}$	Maximum methane-producing potential of manure generated by animal type LT, as per 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 4, Chapter 10 (m^3 CH_4 per kg of VS excreted by animal type LT)
$N_{LT,y}$	Number of animals of livestock type LT for the year *y* (number)
$VS_{LT,y}$	Annual amount of volatile solids excreted by one animal of livestock type LT managed by the management system in year *y*, as per 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 4, Chapter 10 (kg per year of VS excreted by animal type LT)

19. In case of wastewater treatment systems, the baseline emissions BE_y, shall be calculated based on the COD removal efficiency of the solids separation device, as follows:

$$BE_y = UF_b * Q_{y,ww} * (COD_{y,in} - COD_{y,out}) * B_{o,ww} * MCF_{ww,treatment} * GWP_{CH_4} / 1000 \quad \textbf{(3)}$$

Where:

$Q_{y,ww}$	Volume of wastewater entering the solid separation device in year *y* (m^3)
$COD_{y,in}$	Chemical oxygen demand of the wastewater entering the solid separation device (kg/m^3)
$COD_{y,out}$	Chemical oxygen demand of the wastewater leaving the solid separation device (kg/m^3)

Indicative simplified baseline and monitoring methodologies
for selected small-scale CDM project activity categories

III.Y. Methane avoidance through separation of solids from wastewater or manure treatment systems (cont)

UF_b	Model correction factor to account for model uncertainties (0.89)[9]
$MCF_{ww,treatment}$	Methane correction factor for the baseline anaerobic wastewater treatment system
$B_{o,ww}$	Methane producing capacity of the wastewater (IPCC default ~~lower~~ value ~~for domestic wastewater~~ of 0.25~~1~~ kg CH_4/kg COD or 0.6 kg CH_4/kg BOD)[~~10~~]

20. The Methane Correction Factor ($MCF_{ww,treatment}$) shall be determined based on the following table:

Table III.Y.I. IPCC default values[11] for Methane Correction Factor (MCF)

Type of wastewater treatment and discharge pathway or system	MCF value
Anaerobic reactor without methane recovery	0.8
Anaerobic shallow lagoon (depth less than 2 metres)	0.2
Anaerobic deep lagoon (depth more than 2 metres)	0.8
Septic system	0.5

21. In case of thermal treatment technologies the above approach for baseline emissions shall be followed, however $COD_{y,out}$ shall be taken as zero.

Project Activity Emissions

22. Project activity emissions consist of:

(a) Any methane emissions from storage, use, disposal or destruction of solids separated;

(b) Emissions from electricity and fossil fuel use by the solid separation technology including pumping of slurry manure and heat supply for spray drying/evaporation, calculated as per the methods of AMS-I.D;

(c) Emissions from the combustion of flocculent used in the pre-separation phase;

(d) Incremental CO_2 emissions due to increased transportation ($PE_{y,transp}$):

I Transportation of solids to sites where it will be treated further or gainfully used (within the project boundary);

II Transportation of solids from and to treatment facilities to storage sites (within the project boundary);

[9] Reference: FCCC/SBSTA/2003/10/Add.2, page 25.

[~~10~~] ~~The IPCC default value of 0.25 kg CH_4/kg COD was corrected to take into account the uncertainties. For domestic waste water, a COD based value of $B_{o,ww}$ can be converted to BOD_5 based value by dividing it by 2.4 i.e., a default value of 0.504 kg CH_4/kg BOD can be used.~~

[11] Default values from chapter 6 of volume 5. Wastewater Treatment and Discharge in *2006 IPCC Guidelines for National Greenhouse Gas Inventories.*

Indicative simplified baseline and monitoring methodologies
for selected small-scale CDM project activity categories

III.Y. Methane avoidance through separation of solids from wastewater or manure treatment systems (cont)

III Transportation of solids to disposal site.

$$PE_y = PE_{y,ss} + PE_{y,power} + PE_{y,floc,combustion} + PE_{y,trans} \quad \textbf{(4)}$$

Where:

$PE_{y,ss}$	Project emissions from storage, use, destruction or disposal of solids separated in year y (tCO_2e)
$PE_{y,power}$	Project emissions from energy use for pumping and/or operating the separation device in year y (tCO_2e), calculated as per AMS-I.D methods
$PE_{y,floc,combustion}$	Project emissions from combustion of flocculent in year y (tCO_2e)
$PE_{y,trans}$	Project emissions for incremental transportation of solids in the project scenario, beyond the emissions for transportation of solids in the baseline scenario (tCO_2e)

23. In case of manure management systems, project emissions from storage of separated solids are calculated as follows:

$$PE_{y,ss} = MCF_s * UF_p * B_{o,w} * M_{ss,y} * VS_{ss,y} * GWP_{CH4} * D_{CH4} / 1000 \quad \textbf{(5)}$$

Where:

MCF_s	Methane conversion factor for solid storage as per 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 4, Chapter 10, Table 10.17.
UF_p	Model correction factor to account for uncertainties (1.06)[12]

24. In case of wastewater the amount of separated solids ($M_{ss,y}$, dry basis) will be used to calculate the project emissions for the treatment and disposal of the solids, using the procedures for sludge management, according to AMS-III.H, as follows:

$$PE_{y,ss} = \sum_j (PE_{y,s,treatment,j}) + PE_{y,s,final} \quad \textbf{(6)}$$

Where:

j	Index for solids treatment system
$PE_{y,s,treatment,j}$	Methane emissions from solids treatment system j of the project activity, not equipped with biogas recovery, in year y (tCO_2e)

[12] Reference FCCC/SBSTA/2003/10/Add.2, page 25.

Indicative simplified baseline and monitoring methodologies
for selected small-scale CDM project activity categories

III.Y. Methane avoidance through separation of solids from wastewater or manure treatment systems (cont)

$PE_{y,s,final}$ Methane emissions from anaerobic decay of the final solids produced in the year *y*. If the solids are controlled combusted, disposed in a landfill with biogas recovery, or used for soil application in aerobic conditions in the project activity, this term shall be neglected, and the solids treatment and/or use and/or final disposal shall be monitored during the crediting period (tCO_2e)

25. Methane emissions from solids treatment system *j* are determined using the methane generation potential of the solids considered as sludge:

$$PE_{y,s,treatment,j} = M_{ss,j,y} * MCF_{s,treatment,j} * DOC_s * UF_{PJ} * DOC_F * F * 16/12 * GWP_{CH4} / 1000 \quad \textbf{(7)}$$

Where:

$M_{ss,j,y}$ Amount of dry matter in the solids treated by the treatment system *j* in year *y* (kg)

$MCF_{s,treatment,j}$ Methane correction factor for the solids treatment system *j* (MCF values as per table III.H.1)

DOC_s Degradable organic content of the solids generated in the year *y* (fraction, dry basis). Default values of 0.5 for solids separated from domestic wastewater and 0.257 for solids separated from industrial wastewater[13] shall be used.

UF_{PJ} Model correction factor to account for model uncertainties (1.06)

DOC_F Fraction of DOC dissimilated to biogas (IPCC default value of 0.5)

F Fraction of CH_4 in biogas (IPCC default of 0.5)

26. Methane emissions from final disposal of solids separated from wastewater are determined as follows:

$$PE_{s,final,y} = M_{SS,final,y} * DOC_s * UF_{PJ} * MCF_{s,final} * DOC_F * F * 16/12 * GWP_{CH4} / 1000 \quad \textbf{(8)}$$

Where:

$M_{SS,final,y}$ Amount of dry matter in the final solids delivered for final disposal in the year *y* (kg)

DOC_s Degradable organic content of the final solids generated in the year *y* (fraction, dry basis). Default values of 0.5 for solids separated from domestic wastewater and 0.257 for solids separated from industrial wastewater[14] shall be used.

[13] The IPCC default values of 0.05 for domestic sludge (wet basis, considering a default dry matter content of 10 percent) or 0.09 for industrial sludge (wet basis, assuming dry matter content of 35 percent), were adopted, and corrected for dry basis.

Indicative simplified baseline and monitoring methodologies
for selected small-scale CDM project activity categories

III.Y. Methane avoidance through separation of solids from wastewater or manure treatment systems (cont)

UF_{PJ}	Model correction factor to account for model uncertainties (1.06)
$MCF_{s,final}$	Methane correction factor of the disposal site that receives the final solids, estimated as per the procedures described in AMS-III.G

27. In case the solids separated from manure or from wastewater are composted, the following formula shall be applied:

$$PE_{s,composting,y} = M_{SS,composting,y} * EF_{composting} * GWP_{CH4} / 1000 \quad \textbf{(9)}$$

Where:

$PE_{s,composting,y}$	Methane emissions from composting of solids separated by the project activity in year y (tCO_2e)
$M_{SS,composting,y}$	Amount of dry matter in the solids treated by composting in year y (kg)
$EF_{composting}$	Emission factor for composting of organic waste (t CH_4/ton waste treated). Emission factors can be based on facility/site-specific measurements, country specific values or IPCC default values (table 4.1, chapter 4, Volume 5, 2006 IPCC Guidelines for National Greenhouse Gas Inventories). IPCC default value is 0.01 t CH_4/ t sludge treated on a dry weight basis. $EF_{composting}$ can be set to zero for the portions of $M_{SS,composting,y}$ for which the monitored oxygen content of the composting process is above 8%. This can be done via sampling with a maximum margin of error of 10% at a 90% confidence level. For this purpose a portable oxygen meter can be used with lancets of at least 1 m length. In the case of forced aerated in-vessel and forced aerated pile composting systems continuous measurements may also be done using online sensors.

28. Project activity emissions from electricity or fossil fuel consumption ($PE_{y,power}$) are determined as per the procedures described in AMS-I.D. The energy consumption of all equipment/devices installed by the project activity, *inter alia* all equipment to separate solids (including energy used for spray drying and evaporation) shall be included. For project activity emissions from fossil fuel consumption the emission factor for the fossil fuel shall be used (tCO_2/tonne). Local values are to be used, if local values are difficult to obtain, IPCC default values may be used. If recovered methane is used to power auxiliary equipment of the project it should be taken into account accordingly, using zero as its emission factor.

[14] The IPCC default values of 0.05 for domestic sludge (wet basis, considering a default dry matter content of 10 percent) or 0.09 for industrial sludge (wet basis, assuming dry matter content of 35 percent), were adopted, and corrected for dry basis.

Indicative simplified baseline and monitoring methodologies
for selected small-scale CDM project activity categories

III.Y. Methane avoidance through separation of solids from wastewater or manure treatment systems (cont)

29. In case of combustion of separated solids, the CO_2 emissions from the combustion of the non-biomass (i.e., fossil) carbon content of the flocculent shall be considered. In such a case, a default value of 0.2 tCO_2e per tonne of flocculent may be used.

30. Project activity emissions from trucks for incremental transport activities of solids shall be calculated as follows:

$$PE_{y,transp} = Q_{y,transp} / CT_y * DT_y * EF_{CO2} \quad \textbf{(10)}$$

Where:

$Q_{y,transp}$	Quantity of solids transported in year *y* (tonnes)
CT_y	Average truck capacity for transportation (tonnes/truck)
DT_y	Average incremental distance for transportation of separated solids (km/truck)
EF_{CO2}	CO_2 emission factor for the fuel used for transportation (tCO_2/km, IPCC default values or local values)

Leakage

31. If the solid separation technology is equipment transferred from another activity leakage effects are to be considered.

32. When flocculent is used and if the flocculent includes ingredients that were manufactured and not a waste product, then leakage emissions must be addressed for that portion of the flocculent. A default emission factor of 7.9 tCO_2e / t may be applied based on the amount of the flocculent that is manufactured (i.e., excluding the portions that obtained from waste sources).

Emission Reductions

33. The emission reductions achieved by the project activity will be calculated as baseline emissions minus project emissions minus leakage.

$$ER_y = BE_y - PE_y - Leakage_y \quad \textbf{(11)}$$

Where:

ER_y	Emission reductions

Monitoring

34. Historical information confirming that the operational conditions of the baseline manure management or wastewater treatment system shall be validated:

Indicative simplified baseline and monitoring methodologies
for selected small-scale CDM project activity categories

III.Y. Methane avoidance through separation of solids from wastewater or manure treatment systems (cont)

(a) The animals are managed in confined conditions, no organic bedding material is used in the barns or added to the manure stream, the overflow of the anaerobic lagoon is not discharged into river/lake/sea, and a minimum interval of 6 months between each consecutive solids removal operation;

(b) The wastewater treatment system has no fine solids separation process, a minimum interval of 30 days between each consecutive settled solids removal operation;

(c) Evidence of the minimum retention time of solids shall be provided through registers of the previous removal procedures, and/or checking for consistency the volume capacity of the lagoon/system, compared with the amount of solids expected to be accumulated during this time interval;

(d) If more than one manure management system *i* were used in the baseline, the one-year historical information ~~(previous 3 years)~~ of the amount of manure managed in each system ($MS_{Bl,y,i}$).

35. The following parameters shall be monitored and recorded during the crediting period using peer-reviewed methods[15]. Peer reviewed methods, frequency of monitoring for each parameter shall be described in the project design document and shall assure the statistical confidence level required in the general guidance for monitoring of small scale project activities:

(a) Mass of separated solids ($M_{ss,y}$), measured by direct weighing of all separated solids, and measuring its dry matter content through representative sampling. If the dry matter content of a sample is lower than the minimum value of 20%, no emission avoidance will be assigned to the amount of separated solids from which the sample is representative;

(b) Amount of fossil fuel and/or electricity used to power separation equipment;

(c) In case of use of flocculent, amount of manufactured ingredients of flocculent used and the total amount of the flocculent used;

(d) Parameters related to transport: amount of solids transported, average transport capacity of trucks and average incremental distance ($Q_{y,transp}$, CT_y, DT_y);

(e) Leakage as required.

36. For manure management systems the following parameters shall be monitored as well:

(a) Number of animals of type LT expressed in numbers ($N_{LT,y}$), and their individual annual volatile solids excretion ($VS_{LT,y}$);

(b) Volatile solids content of the separated solids ($VS_{SS,y}$).

37. For wastewater treatment systems the following parameters shall be monitored as well:

[15] Such as Standard Methods for the Examination of Water and Wastewater, 20th Edition (Clesceri, Greenberg, Eaton. 1998).

Indicative simplified baseline and monitoring methodologies
for selected small-scale CDM project activity categories

III.Y. Methane avoidance through separation of solids from wastewater or manure treatment systems (cont)

(a) Flow of wastewater entering the solid separation device shall be monitored continuously to determine the annual volume ($Q_{y,ww}$);

(b) The COD load of the wastewater entering and leaving the solid separation device using peer reviewed methods and representative sampling to determine $COD_{y,in}$ and $COD_{y,out}$;

(c) For each treatment step "j" the amount treated ($M_{SS,j,y}$), for the final disposal the amount ($M_{SS,final,y}$) will be monitored. The characteristics of the disposal site (such as to confirm the applicable value for $MCF_{s,final}$) will be validated/verified by the DOE.

38. In case of composting of separated solids, the amount ($M_{ss,composting,y}$) will be monitored, and the emission factor (if the default value is not used) will be verified by the DOE.

39. Proper storage and gainful use or appropriate composting conditions, as well as the soil application/disposal of separated solids shall be ensured and monitored.

40. The operation of the solids separation facilities will be documented in a quality control program, which shall monitor the conditions and procedures that ensure the consistent efficiency of solids removals efficiency within the separation process.

Project activity under a programme of activities

The following conditions apply for use of this methodology in a project activity under a programme of activities:

41. In case the project activity involves the replacement of equipment, and the leakage effect of the use of the replaced equipment in another activity is neglected, because the replaced equipment is scrapped, an independent monitoring of scrapping of replaced equipment needs to be implemented. The monitoring should include a check if the number of project activity equipment distributed by the project and the number of scrapped equipment correspond with each other. For this purpose scrapped equipment should be stored until such correspondence has been checked. The scrapping of replaced equipment should be documented and independently verified.

- - - - -

Indicative simplified baseline and monitoring methodologies
for selected small-scale CDM project activity categories

III.Y. Methane avoidance through separation of solids from wastewater or manure treatment systems (cont)

History of the document

Version	Date	Nature of revision
02	EB 50, Annex # 16 October 2009	The applicability conditions are expanded to allow the use of flocculent in the pre-separation phase to improve the subsequent mechanical solid-liquid separation efficiency. The guidance on emissions from flocculent has been included in the methodology accordingly.
01	EB 44, Annex 18 28 November 2008	Initial adoption.
Decision Class: Regulatory **Document Type**: Standard **Business Function**: Methodology		