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

TYPE III - OTHER PROJECT ACTIVITIES

Follow the link to find General guidance / Abbreviations

III.F. Avoidance of methane production from biomass decay through composting

Technology/measure

1. This project category comprises measures to avoid the production of methane from biomass or other organic matter that would have otherwise been left to decay anaerobically in a solid waste disposal site without methane recovery. Due to the project activity, decay is prevented through aerobic treatment by composting and proper soil application of the compost. The project activity does not recover or combust methane (unlike III G), and does not undertake controlled combustion of the waste (unlike III E). Measures shall both reduce anthropogenic emissions by sources, and directly emit less than 15 kilo tonnes of carbon dioxide equivalent annually.

Boundary

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

(a) where the solid waste would have been disposed and the methane emission occurs in absence of the proposed project activity,

(b) where the treatment of biomass through composting takes place,

(c) where the soil application of the produced compost takes place,

(d) and the itineraries between them (a, b and c), where the transportation of waste or compost occurs.

Project Activity Direct Emissions

3. Total annual project activity related emissions shall be less than or equal to 15 kilo tonnes of CO_2 equivalent. Project activity emissions consist of

(a) Incremental CO_2 emissions due to incremental distances between the collection points to the composting site and to the baseline disposal site as well as transportation of compost from composting site to soil application sites.

(b) CO_2 emissions related to the power used by the project activity facilities. Emission factors for grid electricity or diesel fuel use as the case may be shall be calculated as described in category I.D.

$$PE_y = PE_{y,transp} + PE_{y,power}$$

where:

PE_y: project activity emissions in the year "y" (tonnes of CO_2 equivalent)
$PE_{y,transp}$ emissions through incremental transportation in the year "y"
$PE_{y,power}$ emissions through electricity or diesel consumption in the year "y"

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III.F. Avoidance of methane production from biomass decay through composting (cont)

4. Project activity emissions from trucks for incremental waste collection and compost delivering activities will be estimated and considered as project activity emissions.

$$PE_{y,transp} = (Q_y/CT_y) * DAF_w * EF_{CO2} + (Q_{y,comp}/CT_{y,comp}) * DAF_{comp} * EF_{CO2}$$

where:

Q_y	quantity of waste composted in the year "y" (tonnes)
CT_y	average truck capacity for waste transportation (tonnes/truck)
DAF	average incremental distance for waste transportation (km/truck)
EF_{CO2}	CO_2 emission factor from fuel use due to transportation ($kgCO_2$/km, IPCC default values or local values can be used).
$Q_{y,comp}$	quantity of compost produced in the year "y" (tonnes)
$CT_{y,comp}$	average truck capacity for compost transportation (tonnes/truck)
DAF_{comp}	average distance for compost transportation (km/truck)

Baseline

5. The baseline scenario is the situation where, in the absence of the project activity, biomass and other organic matter are left to decay within the project boundary and methane is emitted to the atmosphere. The baseline emissions are the amount of methane from the decay of the biomass content of the waste treated in the project activity. The Yearly Methane Generation Potential is calculated using the first order decay model based on the discrete time estimate method of the IPCC Guidelines as described in category AMS III.G. Baseline emissions shall exclude methane emissions that would have to be removed or combusted to comply with national or local safety requirement or legal regulations.

$$BE_y = MB_y * GWP\_CH_4 – MD_{y,reg} * GWP\_CH_4$$

where,

MB_y	methane generation potential in the year "y" (tonnes of CH_4), estimated as in AMS III-G
$MD_{y, reg}$	methane that would be destroyed or removed in the year "y" for safety or to comply with regulation
CH_4_GWP	GWP for CH_4 (value of 21 is used for the first commitment period)

Leakage

6. If the composting technology is equipment transferred from another activity or if the existing equipment is transferred to another activity, leakage effects are to be considered.

Monitoring

7. The emission reduction achieved by the project activity will be measured as the difference between the baseline emission and the sum of the project emission and leakage.

$$ER_y = BE_y – (PE_y + Leakage_y)$$

where:

ER_y	Emission reduction in the year "y" (tonnes of CO_2 eq.)

8. The amount of waste composted in the project activity in each year (Q_y) will be measured and recorded, as well as its composition through representative sampling, to provide information for

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III.F. Avoidance of methane production from biomass decay through composting (cont)

estimating the baseline emissions. The total quantity of waste (Q_y) and compost ($Q_{y,comp}$) processed each year, and the average truck capacity (CT_y) will be measured to provide information for estimating the project activity emissions through transportation. The power consumption will be measured and registered. The monitoring will also record the distance for which the waste is transported in the baseline and the project scenario including transport of the compost to the soil application sites.

9. The operation of the composting facilities will be documented in a quality control program, monitoring the conditions and procedures that ensure the aerobic condition of the waste during the composting process.

10. Soil application of the compost in agriculture or related activities will be monitored by documenting the sales or delivery of the compost produced by the project activity, and undertaking an in situ verification of the proper soil application of the compost in a representative sample of the users in order to ensure the aerobic conditions of the decay process.

11. The project participants will demonstrate annually that the amount of waste composted in the project activity facilities would have been disposed in a solid waste disposal site without methane recovery in the absence of the project activity.