

Annex 3

III. E Avoidance of methane production from biomass decay through controlled combustion**Technology/measure**

91. This project category comprises measures that avoid the production of methane from biomass or other organic matter that would have otherwise been left to decay as a result of anthropogenic activity. Due to the project activity, decay is prevented through controlled combustion and less methane is produced and emitted to the atmosphere. The project activity does not recover or combust methane (unlike III D). Measures shall both reduce anthropogenic emissions by sources, and directly emit less than 15 kilotonnes of carbon dioxide equivalent annually.

Boundary

92. The project boundary is the physical, geographical site where the treatment of biomass takes place.

Baseline

93. The baseline scenario is the situation where, in the absence of the project activity, biomass and other organic matter is 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 or organic waste treated in the project activity. IPCC default emissions factors are used.

$$\text{CH}_4\text{_{IPCCdecay}} = (\text{MCF} * \text{DOC} * \text{DOC}_F * F * 16/12)$$

where,

$\text{CH}_4\text{_{IPCCdecay}}$	IPCC CH_4 emission factor for decaying biomass in the region of project activity (tonnes of CH_4 /tonne of biomass or organic waste)
MCF	methane correction factor (fraction) (default is 0.4) ¹
DOC	degradable organic carbon (fraction, see equation below or default is 0.3)
DOC_F	fraction DOC dissimilated to landfill gas (default is 0.77)
F	fraction of CH_4 in landfill gas (default is 0.5)

For DOC, the following equation may be used instead of the default:

$$\text{DOC} = 0.4 (A) + 0.17 (B) + 0.15 (C) + 0.30 (D)$$

where,

A	per cent waste that is paper and textiles
B	per cent waste that is garden waste, park waste or other non-food organic putrescibles
C	per cent waste that is food waste
D	per cent waste that is wood or straw

$$\text{BE}_y = Q_{\text{biomass}} * \text{CH}_4\text{_{IPCCdecay}} * \text{GWP}_{\text{CH}_4}$$

where,

BE_y	Baseline methane emissions from biomass decay (tonnes of CO_2 equivalent)
Q_{biomass}	Quantity of biomass treated under the project activity (tonnes)
$\text{CH}_4\text{_{GWP}}$	GWP for CH_4 (tonnes of CO_2 equivalent/tonne of CH_4)

Baseline emissions shall exclude methane emissions that would have to be removed to comply with national or local safety requirement or legal regulations.

Leakage

94. No leakage calculation is required.

¹ IPCC default for unmanaged shallow < 5 meters waste sites.

Monitoring

95. The amount of biomass and / or other organic matter combusted (Q_{biomass}) by the project activity in a year shall be monitored. Emissions of CH_4 and N_2O will be determined using the most recent IPCC default values.

$$PE_y = Q_{\text{biomass}} * E_{\text{biomass}} (\text{CH}_4\text{bio_comb} * \text{CH}_4_GWP + \text{N}_2\text{Obio_comb} * \text{N}_2\text{O_GWP})/10^6$$

where,

PE_y	Project activity emissions (kilotonnes of CO_2 equivalent)
Q_{biomass}	Quantity of biomass treated under the project activity (tonnes)
E_{biomass}	Energy content of biomass (TJ/tonne)
$\text{CH}_4\text{bio_comb}$	CH_4 emission factor for biomass and waste (which includes dung and agricultural, municipal and industrial wastes) combustion (kg of CH_4 /TJ, default value is 300)
CH_4_GWP	GWP for CH_4 (tonnes of CO_2 equivalent/tonne of CH_4)
$\text{N}_2\text{Obio_comb}$	N_2O emission factor for biomass and waste (which includes dung and agricultural, municipal and industrial wastes) combustion (kg/TJ, default value is 4)
$\text{N}_2\text{O_GWP}$	GWP for N_2O (tonnes of CO_2 equivalent/tonne of NO_2)

96. Total annual project activity related emissions will be monitored and should be less than or equal to 15 kt of CO_2 equivalent. If at the renewal of the crediting period the project emissions are higher than the 15 Kt of CO_2 equivalent the project ceases to be a small-scale CDM project and has to use an approved methodology.