

Additional information on the proposed methodology

“Power generation and avoidance of landfill gas emissions through combustion of municipal solid waste (MSW)”

1. CH₄ emissions from combustion of waste associated with incineration

Project emissions of CH₄ from combustion of waste associated with incineration can be estimated by multiplying the quantity of MSW fed into an incinerator, the emission factor for CH₄ associated with incineration, and the global warming potential of CH₄ as shown in the following equation of the CDM approved consolidated baseline and monitoring methodology ACM0022 “Alternative waste treatment processes” (Version 02.0).

$$PE_{COM_CH4} = W_i \times EF_{CH4} \times GWP_{CH4} = W_i \times 1.21 \times 0.2 \times 10^{-6} \times 25 = W_i \times 6.05 \times 10^{-6}$$

* The emission factor above is for the case of continuous incineration of MSW in stoker furnace as shown in ACM0022.

As compared to the emissions of N₂O from combustion of waste, which are calculated in a similar way, the emissions of CH₄ are much less than those of N₂O and they are only about three thousandth of those of N₂O.

$$PE_{COM_N2O} = W_i \times EF_{N2O} \times GWP_{N2O} = W_i \times 1.21 \times 50 \times 10^{-6} \times 298 = W_i \times 18,029 \times 10^{-6}$$

* The emission factor above is for the case of continuous incineration of MSW.

In a planned project to which the proposed methodology is to be applied, for example, the expected emissions of CH₄ from combustion of waste is only 0.13 tCO₂e, which results in approximately 0.002% of estimated project emissions. Taking into consideration the amount of expected emissions, the CH₄ emissions from combustion of waste associated with incineration is negligible. Exclusion of CH₄ emissions also contributes to simplifying the calculation of project emissions.

2. Model correction factor to account for model uncertainties (φ)

The model correction factor “ φ ” accounts for uncertainty of the model to calculate CH₄ emissions from decomposition of MSW. The CDM Methodological Tool “Emissions from solid waste disposal sites” provides default values for the model correction factor to calculate baseline emissions as shown in the Table 1 below.

Table 1. Default values for the model correction factor

	Humid/wet conditions	Dry conditions
The CDM project activity avoids or involves the disposal of waste at a SWDS.*	0.85	0.80

* For example, MSW is treated with an alternative option, such as composting or anaerobic digestion, and is then prevented from being disposed in a SWDS.

Source: CDM Methodological Tool “Emissions from solid waste disposal sites” (Version 07.0)

Based on the application in the proposed methodology and the climate of Myanmar, it is appropriate to use 0.85 for the model correction factor in the proposed methodology, however, 0.80 is used to calculate reference emissions conservatively and assure net emission reductions.