



VCS Methodology

VMR0011

**SWITCH FROM NON-RENEWABLE
BIOMASS FOR THERMAL APPLICATIONS
BY THE USER**

Version 1.0

02 July 2024

Sectoral Scope 1

The original CDM methodology *AMS-I.E. Switch from non-renewable biomass for thermal applications by the user*, v1.0 was adopted on 01 February 2008. It has been further revised over time. Version 13.0 was adopted on 08 September 2022. This methodology revision must be used with the latest version of AMS-I.E. available on the CDM website.

Version 1.0 of this methodology revision was developed by Verra.

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1 SOURCES

This methodology revision applies to the CDM small-scale methodology *AMS-I.E Switch from non-renewable biomass for thermal applications by the user*. Project proponents must use this methodology revision in conjunction with the latest version of AMS-I.E.

This methodology uses the following CDM methodologies and tools as sources:

- *AMS-I.I Biogas/biomass thermal applications for households/small users*
- *AMS-II.G Energy efficiency measures in thermal applications of non-renewable biomass*
- *AMS-III.F Avoidance of methane emissions through composting*
- *AMS-III.G Landfill methane recovery*
- *AMS-III.H Methane recovery in wastewater treatment*
- *AMS-III.BG Emission reduction through sustainable charcoal production and consumption*
- *TOOL03 Tool to calculate project or leakage CO2 emissions from fossil fuel combustion*
- *TOOL05 Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation*
- *TOOL16 Project and leakage emissions from biomass*
- *TOOL30 Calculation of the fraction of non-renewable biomass*
- *TOOL33 Default values for common parameters*
- *Standard: Sampling and surveys for CDM project activities and programme of activities*

2 SUMMARY DESCRIPTION OF THE METHODOLOGY

Additionality and Crediting Method	
Additionality	Activity Method
Crediting Baseline	Project Method

The CDM methodology AMS-I.E applies to the generation of thermal energy by introducing renewable energy technologies for end users that displace the use of non-renewable biomass, including cookstoves using renewable biomass, biogas stoves, bio-ethanol stoves, and electric cookstoves powered by renewable energy.

This methodology revision (VMR0011) includes the following updates:

- An uncertainty deduction is added when applying the procedures of CDM TOOL30 or an approved standardized baseline to determine the fraction of non-renewable biomass (fNRB).
- The leakage adjustment factor, which accounts for leakage related to the use of non-renewable woody biomass saved by the project activity is now fixed at validation.

VMR0011 must be used with the latest version of AMS-I.E. The procedures and requirements of AMS-I.E must be applied unless indicated otherwise.

3 DEFINITIONS

The definitions in AMS-I.E and the latest version of the *VCS Program Definitions* apply for this methodology unless indicate otherwise.

4 APPLICABILITY CONDITIONS

All applicability conditions of the latest version of AMS-I.E must be met.

5 PROJECT BOUNDARY

The project boundary must be determined following the procedure provided in the latest version of AMS-I.E.

6 BASELINE SCENARIO

The baseline scenario must be determined following the procedure provided in the latest version of AMS-I.E.

7 ADDITIONALITY

Additionality must be demonstrated following the procedure provided in the latest version of AMS-I.E.

8 QUANTIFICATION OF ESTIMATED GHG EMISSION REDUCTIONS AND REMOVALS

8.1 Baseline Emissions

The baseline emissions must be determined following the procedures provided in the latest version of AMS-I.E, replacing the equations as indicated in the following.

The following equation replaces Equation 1 of AMS-I.E:

$$BE_y = B_y \times Adj_{LE} \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected_fossil_fuel} \times (1 - u_d) \quad (1)$$

Where:

BE_y	=	Baseline emissions in the year y (tCO ₂ e)
B_y	=	Quantity of woody biomass that is substituted or displaced in year y (tonnes)
Adj_{LE}	=	Adjustment factor to account for leakage related to the non-renewable woody biomass saved by the project activity (fraction)
$f_{NRB,y}$	=	Fraction of woody biomass used in the absence of the project activity in year y that can be established as non-renewable biomass (fraction or %)
$NCV_{biomass}$	=	Net calorific value of the non-renewable woody biomass that is substituted (TJ/tonne)
$EF_{projected_fossil_fuel}$	=	Emission factor of fossil fuels projected to substitute non-renewable woody biomass by similar consumers (tCO ₂ e/TJ)
u_d	=	Uncertainty deduction for $f_{NRB,y}$ (%)

8.2 Project Emissions

Project emissions must be determined following the procedures provided in the latest version of AMS-I.E.

8.3 Leakage Emissions

Projects must apply an adjustment factor to account for leakage related to the non-renewable woody biomass saved by the project activity (Adj_{LE}). For simplification, the adjustment factor is

included in the calculation of baseline emissions (Equation (1)). The leakage emissions must be determined following the procedures provided in the latest version of AMS-I.E.

8.4 Estimated GHG Emission Reductions

No change from AMS-I.E.

9 MONITORING

Project proponents must follow the monitoring procedures of the latest version of AMS-I.E. and apply the changes indicated in this section.

9.1 Data and Parameters Available at Validation

Data / Parameter	u_d
Data unit	%
Description	Uncertainty deduction for f_{NRB}
Equations	(1)
Source of data	Estimated based on uncertainty requirements
Value applied	The following uncertainty deduction must be applied, depending on the procedure for f_{NRB} used from AMS-I.E.: 1) If the default value for f_{NRB} from TOOL33 is applied: $u_d = 0$ 2) If f_{NRB} is calculated as per TOOL30: $u_d = 26\%$ 3) If f_{NRB} from an approved standardized baseline is applied: $u_d = 26\%$
Justification of choice of data or description of measurement methods and procedures applied	Conservative discount factor based on uncertainty for f_{NRB}
Purpose of Data	Calculation of baseline emissions
Comments	-

Data / Parameter	Adj_{LE}
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Data unit	fraction
Description	Adjustment factor to account for leakage related to the non-renewable woody biomass saved by the project activity
Equations	(1)
Source of data	The procedures from the latest version of AMS-I.E. must be applied.
Value applied	-
Justification of choice of data or description of measurement methods and procedures applied	Procedure of underlying methodology AMS-I.E.
Purpose of Data	Calculation of baseline emissions
Comments	Parameter fixed at validation

9.2 Data and Parameters Monitored

Project proponents must follow the procedure provided in the latest version of AMS-I.E.

9.3 Description of the Monitoring Plan

All monitoring requirements of AMS-I.E. must be followed, unless otherwise indicated in VMR0011. In case a survey is conducted, the project proponents should use the non-binding survey questionnaire of the latest version of AMS-I.E.

10 REFERENCES

Not applicable.

DOCUMENT HISTORY

Version	Date	Comment
v1.0	02 Jul 2024	Initial version