



**Verified Carbon
Standard**

VCS Methodology

VMR0008

RECOVERY AND RECYCLING OF MATERIALS FROM E-WASTE

Version 1.0

4 September 2023

Sectoral Scope 13

The original CDM methodology *AMS-III.BA. Recovery and recycling of materials from E-waste* was adopted on 11 May 2012. It has been further revised over time. Version 3.0 was adopted on 9 September 2021. This methodology revision must be used with the latest version of *AMS-III.BA* available on the CDM website.

Version 1.0 of this methodology revision was developed by Verra. It was approved on 4 September 2023.

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1 SOURCES

This methodology revision applies to CDM small-scale methodology *AMS-III.BA. Recovery and recycling of materials from E-waste*. Project proponents must use this methodology revision in conjunction with the latest version of AMS-III.BA.

This methodology uses the following sources:

- The latest version of the CDM small-scale methodology *AMS-III.BA. Recovery and recycling of materials from E-waste*

2 SUMMARY DESCRIPTION OF THE METHODOLOGY

Additionality and Crediting Method	
Additionality	Project Method
Crediting Baseline	Project Method

The CDM methodology AMS-III.BA. comprises activities for the collection and recycling of E-waste performed in dedicated facilities with the aim of recovering materials such as ferrous metals, nonferrous metals, and plastics. E-waste contains rare and precious metals that require specific technologies to extract and refine them. These materials are recovered and processed into secondary materials, thus displacing the production of virgin materials, resulting in energy savings and reduced greenhouse gas emissions.

This methodology revision integrates a discount factor to account for uncertainty about the displacement of production of virgin materials caused by the project activity.

This methodology must be used with the latest version of AMS-III.BA. The procedures and requirements of AMS-III.BA. must be applied unless indicated otherwise.

3 DEFINITIONS

The definitions in AMS-III.BA. and the latest version of the *VCS Program Definitions* apply for this methodology, unless this methodology or the *VCS Program Definitions* indicate otherwise.

4 APPLICABILITY CONDITIONS

All applicability conditions of latest version of AMS-III.BA. must be met.

5 PROJECT BOUNDARY

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

6 BASELINE SCENARIO

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

7 ADDITIONALITY

Additionality must be demonstrated following the procedure provided in the latest version of AMS-III.BA.

8 QUANTIFICATION OF 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-III.BA., replacing the equations as indicated in the following.

The following equation replaces Equation 2 of AMS-III.BA.:

$$BE_{metals,y} = \sum_f Q_{i,y} \times B_i \times SE_i \times (1 - DF) \quad (2)$$

Where:

- $BE_{metals,y}$ = Baseline emissions in year y associated with the recycling of metals (tCO_{2e})
 $Q_{i,y}$ = Quantity of metal type i recycled and sent to a processing or manufacturing facility in year y (t)
 B_i = Correction factor based on the share of the production in non-Annex I countries
 SE_i = Specific CO_{2e} emission factor for production of metal i , measured in tCO_{2e}/t. Use the values specified in Table 3 of AMS-III.BA.
 DF = Discount factor for upstream displacement (30%)

The following equation replaces Equation 3 of AMS-III.BA.:

$$BE_{plastics,y} = \sum_f Q_{i,y} \times L_i \times (1 - DF) \times (w_{i,in-country,y} \times SE_{i,in-country,y} + w_{i,imported,y} \times SE_{i,imported,y}) \quad (3)$$

Where:

- $BE_{plastics,y}$ = Baseline emissions for plastics recycling in year y (tCO₂/year)
 Q_i = Quantity of plastic type i recycled in year y (t/y)
 DF = Discount factor for upstream displacement (30%)
 L_i = Net to gross adjustment factor to cover degradation in material quality and material loss in the processing of the sorted material. Use 0.75 if the recycling facility includes only E-waste sorting; use 1 if the recycling facility includes both E-waste sorting and E-waste processing
 $w_{i,in-country,y}$ = Percentage of plastics produced in the host country out of total plastic consumed in year y (%)
 $SE_{i,in-country,y}$ = Specific emissions in the baseline for the production of virgin plastics type i in the host party in year y (tCO₂/t)
 $w_{i,imported,y}$ = Percentage of imported plastics out of total plastic consumed in year y (%)
 $SE_{i,imported,y}$ = Specific emissions in the baseline for virgin plastics type i imported in year y (tCO₂/t)

Project proponents may propose a methodology revision with a different discount factor for upstream displacement in accordance with the latest version of the *VCS Methodology Requirements*.

8.2 Project Emissions

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

8.3 Leakage Emissions

Leakage emissions must be determined following the procedures provided in the latest version of AMS-III.BA.

8.4 Estimated GHG Emission Reductions

The estimated GHG emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y - LE_y \quad (13)$$

Where:

ER_y	=	GHG emissions reductions in year y (tCO ₂ e)
BE_y	=	Baseline emissions in year y (tCO ₂ e)
PE_y	=	Project emissions in year y (tCO ₂ e)
LE_y	=	Leakage in year y (tCO ₂ e)

9 MONITORING

9.1 Data and Parameters Available at Validation

Project Proponent must follow the procedure provided in the latest version of AMS-III.BA.

9.2 Data and Parameters Monitored

Project Proponent must follow the procedure provided in the latest version of AMS-III.BA.

9.3 Description of the Monitoring Plan

Project Proponent must follow the monitoring plan and procedure provided in the latest version of AMS-III.BA.

APPENDIX 1: DOCUMENT HISTORY

Version	Date	Comment
v1.0	04 Sep 2023	Initial version