



AFRICAN CARBON STANDARD

APPROVED METHODOLOGY

CC-M001-I

Inorganic Waste Recycling and Composting Projects

Collection, sorting and recycling of dry recyclable materials that would otherwise be disposed of to landfill or unmanaged waste streams.

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Draft for Consultation

Applicable to African Projects

Document Control

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Scope of application	African projects diverting dry recyclable / inorganic materials from landfill or unmanaged waste streams
Sectoral scope	Waste handling and disposal; material recovery and recycling
Guiding principle	AMPED — Additional, Measured, Permanent, Excellent Data

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1. Introduction and Scope

This methodology provides a guiding framework for projects seeking to register under the Credible Carbon standard. It applies to projects quantifying avoided greenhouse gas emissions from inorganic waste diverted from landfill and supplied into recycling or circular economy value chains. It applies to dry recyclable materials where the project can demonstrate the mass and material category of waste diverted and confirm that the material was sold, transferred or processed for recycling.

Eligible materials include plastics, glass, metals, paper and board, cartons, e-waste fractions where an appropriate factor exists, construction materials where auditable factors exist, and other non-organic recyclable materials approved by Credible Carbon. The methodology is intended to support, not remove, Credible Carbon's insistence that all projects be **AMPED — Additional, Measured, Permanent and supported by Excellent Data**. The emphasis on excellent data to support project claims remains a hallmark of all Credible Carbon projects and supersedes narrow compliance with methodologies.

2. Applicability Conditions

A project is eligible under this methodology where all of the following conditions are satisfied.

Condition	Requirement
Material type	The project must divert identifiable dry recyclable or inorganic materials by material category. Mixed waste may only be credited for the verified recyclable fraction.
Baseline route	The material would otherwise have been landfilled or burnt.
Recycling outcome	Material must be transferred to a recycler, processor, buyer or circular economy user; indefinite stockpiling is not eligible.
Data availability	Mass by material type must be measured or conservatively estimated from auditable transaction records.
No double counting	Waste generators, aggregators and downstream buyers must be informed that the carbon claim is made by the project, and the project must provide evidence that no overlapping carbon claim has been or is being made.

3. Physical Location and Project Boundary

The physical boundary includes collection routes under project control, buy-back centres, sorting facilities, baling or crushing equipment, storage areas, vehicles, electricity use and onward sale records up to the point where material leaves the project boundary. The PIN must provide the site address, GPS coordinates, facility description and, for multi-site projects, a site register.

The simplified boundary excludes downstream manufacturing by recyclers unless the emission factor used explicitly requires downstream processing assumptions. Transport used for material collection or distribution to downstream parties must be deducted from estimates of greenhouse gas savings.

4. Baseline Scenario

- A baseline year must be stipulated, noting that the baseline may not exceed three years prior to the date of project registration. A project may have a lifespan of a maximum of 21 years from its baseline year.
- The operational baseline is disposal of the recyclable material to landfill, open dumping or the general waste stream. In contexts with active informal recovery, the project must explain why the credited material would not otherwise have been recovered at the same volume, quality or value without the project.
- The baseline may assume that products manufactured from recycled material would otherwise have been manufactured from more conventional (virgin) material, creating the scope for further emissions savings.
- The baseline must be appraised and adjusted at least every three years via the PIN submission prior to verification.

Material category	Default baseline	Evidence required
Plastics: PET, HDPE, LDPE, PP, mixed plastics	Landfill, burning or unmanaged waste stream.	Material sales records, bale weights, category definitions, recycler receipts. Internationally accepted emission factors required. Factors based on local lifecycle analysis must be published in peer-reviewed literature or regulator gazettes.
Paper and board	Landfill and burning.	Paper/board tonnages by grade and buyer records. Internationally accepted emission factors required. Local-LCA factors must be published in peer-reviewed literature or regulator gazettes.
Glass	Landfill or unmanaged waste stream.	Tonnage records and buyer/recycler confirmations. Internationally accepted emission factors required. Local-LCA factors must be published in peer-reviewed literature or regulator gazettes.
Metals: aluminium, steel, mixed cans, scrap	Landfill or unmanaged waste stream; recycling displaces primary material production.	Scrap yard receipts, weighbridge records, buyer invoices. Internationally accepted emission factors required. Local-LCA factors must be published in peer-reviewed literature or regulator gazettes.
E-waste or specialised fractions	Disposal to landfill or informal treatment, subject to local legality.	Approved processor evidence, tonnage or estimated tonnage, and emission factor source.

5. Additionality

The project must show that the inorganic waste diversion is not a regulatory requirement in the applicable jurisdiction. The case for regulatory surplus can be supported by one or more of the other proofs listed below.

Additionality test	Specific evidence for inorganic recycling projects
Regulatory surplus	Regulatory surplus is the central proof of additionality under the Credible Carbon Standard. The project must show that activity is not required by law or bylaw in the project jurisdiction. Projects may apply an E+ principle, where laws or bylaws have been specifically introduced to reduce greenhouse gas emissions subsequent to the project country signing the Paris Accord. Similarly, the requirement for regulatory surplus should not eliminate projects that support the application of the laws or are listed in the country's Nationally Determined Contribution.
Financial barrier	The requirement of regulatory surplus may be supported by evidence of financial barriers to commencing and/or sustaining the project activity.
Common practice	The requirement of regulatory surplus may be supported by evidence that most comparable material in the area is still landfilled or treated through conventional disposal rather than recycled. Common practice refers to practices adopted by more than 50% of a particular industry or sector.
Waste picker / SME inclusion	Where informal collectors already recover some material, demonstrate that the project adds value through stable purchasing, safer aggregation, better prices, formalisation or access to buyers, and that it supports targets and policies aimed at waste reduction.

6. Emission Reduction Quantification

$$\text{Net emission reductions: } ER = BE - PE - LE$$

For recycling projects, BE is usually quantified using an avoided-emission factor per tonne of material recycled. The factor may include avoided virgin material production, avoided landfill emissions, or both, depending on the selected recognised source. The project must state exactly what the factor includes to avoid double counting.

Component	Inorganic waste calculation approach
Baseline / avoided emissions (BE)	Mass of material recycled by category × internationally recognised emission factor for that material. Material-specific factors are to be used unless mixed-waste composition is verified.

Component	Inorganic waste calculation approach
Project emissions (PE)	Electricity and fuel for collection and equipment, electricity for sorting/baling/crushing, and any other on-site energy use.
Leakage (LE)	Usually zero where project fuel and electricity are included. Deduct emissions from disposal of rejected residuals where material.
Net credits (ER)	Deduct project emissions and leakage. Do not include material that found its way back to landfill. Use conservative emission factors or peer-reviewed life-cycle analyses, and exclude uncertain categories.

7. Leakage and Conservativeness

Source	Treatment
Collection and sorting fuel	Include as project emissions using fuel receipts or conservative litres-per-tonne intensity.
Electricity or gas for balers, crushers and sorting lines	Include using kWh records or conservative energy intensity.
Rejected residuals disposed to landfill	Exclude from credited tonnage and include disposal emissions if material.
Downstream buyer transport	Excluded unless controlled by the project and material.
Material category uncertainty	Apply the lower emission factor or exclude the record where materials are mixed or indeterminate.

8. Poverty Impact and Sustainable Development

Inorganic recycling projects commonly generate poverty impacts through waste-picker income and local jobs in sorting and processing. Inorganic waste projects must show a discernible poverty impact that includes but goes beyond the creation of work. Relevant evidence includes expanded geographical reach of waste-picker programmes, improved income security for employees or workers in the value chain, staff revenue sharing, safer working conditions, SME participation, women and youth employment, and community clean-up benefits. The PIN must quantify the number of workers or collectors benefiting and the value of payments or support provided.

9. Source Data / Model Accepted

Data accepted	Preferred evidence
Mass by material category	Weighbridge tickets, scale records, recycler receipts, buyer invoices, bale weights, stock movement records.
Material classification	Sorting sheets, buyer grade definitions, photos of bales/material, contamination records.

Data accepted	Preferred evidence
Recycling outcome	Proof of sale or transfer to recycler, processor or circular economy buyer.
Fuel / electricity data	Fuel receipts, vehicle logbooks, equipment hours, electricity invoices.
Emission factors	DEFRA material recycling factors, national factors, EPA WARM-type factors, ecoinvent or other recognised auditable LCA databases, applied by material category and version.
Calculation model	Spreadsheet: tonnes by material × factor – project emissions – residual leakage.

10. Monitoring and Verification

Parameter	Frequency	Method
Mass by material type	Per transaction; monthly summary	Scale/weighbridge/buyer invoice; reconcile stock in/out.
Material destination	Per sale/transfer	Recycler receipt, buyer invoice, delivery note.
Fuel consumption	Per purchase or monthly	Receipts or intensity ratio from verified period.
Electricity consumption	Monthly	Utility invoice or metered record.
Collector/worker benefits	At least annually	Payment records, payroll, collector register, revenue and benefit-sharing evidence.

11. Minimum PIN Checklist

- Facility/site location and operational boundary provided.
- Material categories and baseline disposal route justified.
- Tonnage records by material type and recycler/buyer evidence provided.
- Emission factor source, version and included lifecycle stages stated.
- Fuel and electricity project emissions included or conservatively justified.
- Additionality, ownership, no-double-counting and poverty impact addressed.
- Calculation spreadsheet attached with tonnes, factors, PE, LE and ER by year.
- Data sources for monitoring and verification identified.

12. Data and Evidence Hierarchy

Credible Carbon applies an evidence hierarchy when assessing whether project data is sufficiently robust for credit issuance. The verifier should use the best available evidence and apply conservative exclusions or discounts where data quality is weak.

Tier	Evidence type	Project-specific examples
1	Primary transaction records	Weighbridge tickets, recycler receipts, buyer invoices, bale weights, accounting system exports.
2	Corroborating records	Delivery notes, stock movement logs, photos of sorted/baled material, bank statements, collector registers.
3	Documented estimates	Conservative conversions from container counts or bale counts where weights are partially missing.
4	Operator declaration	Accepted only for isolated minor gaps where sales and stock records support the claim.

13. Community Engagement and Stakeholder Consultation

The project must demonstrate that adequate stakeholder engagement has been conducted before third-party verification. The PIN should include a public notice or equivalent local communication, a comment period or consultation opportunity, a record of material issues raised, and a functioning grievance channel.

- Identify directly affected stakeholders, including workers, customers, waste generators, land users, neighbours, community organisations or off-takers as relevant.
- Record the engagement method, date, participants, issues raised and project response.
- Keep evidence such as notices, attendance registers, photos, meeting notes, emails, messaging-app notices or letters of support.
- Explain how stakeholder feedback was addressed and how grievances can be submitted during the crediting period.

14. Verification Requirements

Third-party verification is required before credits are issued. The verifier must answer the Credible Carbon assessment questions and confirm that the project is real, operational, conservatively quantified, additional, monitored and poverty-positive.

Verification area	Minimum requirement
Site visit	Verifier observes sorting, storage, baling/crushing equipment and record keeping.
Material data review	Verifier reconciles claimed tonnes by material type to receipts, invoices and stock records.
Emission factor review	Verifier confirms material-specific factor source, version and lifecycle boundary.
Residual waste review	Verifier confirms contamination and residual disposal are excluded or deducted.

Verification area	Minimum requirement
Poverty impact	Verifier reviews evidence of waste-picker income, payroll, SME participation or revenue sharing.
Legal ownership of credits	Verifier must establish that the audited legal entity is the rightful owner of the credits and that no other party in the waste stream is claiming, or intends to claim, credits from the same material.

15. Worked Example of Project Emissions

The following illustrative example shows how net emission reductions are assembled for a single reporting year. Figures are indicative only and must be replaced with audited, project-specific data and emission factors.

Line item	Basis	Value (tCO ₂ e)
Avoided emissions — recycled PET	120 t × emissions factor	+ 180
Avoided emissions — recycled metals	40 t × emissions factor	+ 95
Project emissions — collection fuel	diesel litres × factor	– 14
Project emissions — sorting/baling electricity	kWh × grid factor	– 9
Leakage — residual disposal	rejected fraction	– 6
Net emission reductions (ER)	BE – PE – LE	246

Use conservative, internationally recognised emission factors and state, for each factor, the source, version and lifecycle stages included.