

VCS Methodology Template

This template is for developing methodologies and methodology revisions under the VCS Program.

Follow the instructions in this template to draft the methodology and ensure the methodology meets the rules and requirements in the *VCS Standard* and *VCS Methodology Requirements*. Refer to these documents when drafting the methodology.

Note that the instructions in this template serve as a guide and do not necessarily represent an exhaustive list of the information the preparer must provide under each template section.

INSTRUCTIONS FOR COMPLETING THE DRAFT METHODOLOGY

1. Complete all items in the box on the title page using Arial or Century Gothic 10.5 point, black, regular (non-italic) font. The cover page of this template is only for the draft version. Verra will prepare the final cover page (title) and second page (acknowledgment) for publication in case the methodology is approved.
2. Propose a clear and concise title using the following guidance:
	* Do not include words like “project” or “activities”
	* Preferably, do not include “methodology”
	* Do not include terms related to the quantification and monitoring method

Examples of appropriate titles are:

1. Afforestation, Reforestation and Revegetation
2. Carbon Capture and Storage

Rather than:

1. Methodology for Afforestation, Reforestation and Revegetation Project Activities
2. Methodology for Carbon Capture and Storage Projects Using a Standardized Method
3. Follow the instructions under each section heading in this template.
4. Use clear, logical, concise, and precise language to aid readability and ensure consistent application and interpretation.
5. Only include relevant procedures and requirements in the main sections of the methodology. Use appendices to provide detailed background information, explanation, and justification of key methodological components. You may include brief summaries of background information or explanations within the body or footnotes of the methodology if it is helpful for the reader to follow the logic of the methodology when applying the procedures.
6. The methodology must use the keywords “must,” “should,” and “may” appropriately:
	1. **must**: indicates a firm requirement
	2. **should**: indicates a (non-mandatory) recommendation
	3. **may**: indicates a permissible or allowable option
	4. **shall**: do not use ”shall” for methodologies. “Shall” is reserved for VCS Program documents.
7. Complete all sections using Franklin Gothic Book 10.5 point, black, regular (non-italic) font.
8. Use italic font to reference VCS Program documents, methodologies, or tools, e.g., “the latest version of the VCS Methodology Requirements.”
9. **Delete all instructions, including this introductory text, from the final document**.



Methodology TITLE

 *Methodology Under development*

|  |  |
| --- | --- |
| Title  | *Name of the methodology or methodology revision* |
| Version | *Version number of this document* |
| Date of Issue | *DD-Month-YYY this version of the document issued* |
| Type | [ ]  New Methodology[ ]  Methodology Revision |
| Sectoral Scope | *Sectoral scope(s) applicable to the methodology/revision.* *For AFOLU methodologies, indicate the applicable project category (ALM, ARR, IFM, REDD, WRC, ACoGS) and specific project type (e.g., ICM, LtPF, APDD, RWE, AUC)* |
| Developer | *Name of the organization that developed the methodology* |
| Contact information | *Physical address, telephone, email, website, 2-letter country code* |

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# Sources

Indicate key methodologies, modules, tools, guidance and other documents upon which the proposed methodology is based. For methodology revisions, identify the methodology and the associated GHG program, upon which the revision is based.

Identify any modules or tools used by the methodology. Include information on the author of the methodology, if desired.

Use italics for document names in the sources, as shown in the example below.

Example:

This methodology is based on the following methodologies:

* *VM0042 Methodology for Improved Agricultural Land Management, v2.0*

This methodology uses the latest versions of the following tools and modules:

* *VMD0053 Model Calibration, Validation, and Uncertainty Guidance for the Methodology for Improved Agricultural Land Management, v2.0*
* *CDM* *TOOL16: Project and leakage emissions from biomass*
* *CDM* *TOOL24: Common practice*

The following have also informed the development of the methodology:

* <Other sources, documents, etc.>

# Summary description of the Methodology

|  |
| --- |
| Additionality and Crediting Method |
| Additionality | <Project/Performance/Activity Method> |
| Crediting Baseline | <Project/Performance Method> |

Indicate using the above table whether the methodology uses a project, performance, or activity method for determining additionality, and a project or performance method for determining the crediting baseline (see the VCS Methodology Requirements for further information on these methods).

Provide a brief summary description of the methodology, including a description of the project activity(s) to which the methodology applies. The summary should be kept concise.

# Definitions

Using the format in the example below, provide, in alphabetical order, definitions of key terms and acronyms that are used in the methodology. Ensure all defined terms are used in the methodology. Do not include terms already defined under the VCS Program.

**Logging slash**

Dead wood residues (including foliage) left on the forest floor after timber removal

**Logging slash**

Dead wood residues (including foliage) left on the forest floor after timber removal

# Applicability conditions

Describe the project activity(s) to which the methodology applies. Then, set out specific applicability criteria that define project eligibility, such as geographic location, technology type, historical land use, and any other conditions under which the methodology is applicable. Use a numbered list to make referencing to applicability conditions clearer.

Authors should keep the following in mind when writing the applicability conditions:

* Applicability conditions must be specified clearly, and in a manner that allows easy determination of whether an activity being undertaken by a potential project proponent is eligible.
* Applicability conditions must not contain procedures or obligations upon the project proponent. Rather, they must be conditions against which project eligibility can be determined at the time of validation and must not require the project proponent to undertake ongoing actions to ensure continued eligibility.
* For performance methods, this section must specify the technologies and/or measures (or examples of technologies and/or measures) that can be implemented (in order to achieve substantial performance improvement relative to the crediting baseline) under the methodology.
* For activity methods (i.e., methodologies using a positive list approach for additionality), the application conditions represent the positive list. The Additionality section of the methodology only needs to address the VCS regulatory surplus requirements.
* The list of applicability conditions may contain exclusions (i.e., may describe types of project activities to which the methodology does not apply).

This methodology applies to project activities that…

This methodology is applicable under the following conditions:

1. <Condition>
2. <Condition>
3. …

This methodology is not applicable under the following conditions:

1. <Condition>
2. …

# Project Boundary

*Describe the project boundary and identify the GHG sources, sinks and reservoirs (controlled by the project proponent, related to the project or affected by the project) included in or excluded from the project boundary. Specify where GHG sources, sinks and reservoirs are optional. Include any procedures and diagrams, as appropriate. Remove or include further row in Table 1 as needed. Leakage sources must not be included since they are not part of the project boundary.*

The spatial extent of the project boundary encompasses…

The greenhouse gases included in or excluded from the project boundary are shown in Table 1.

**Table 1: GHG Sources Included In or Excluded From the Project Boundary**

|  |  |  |  |
| --- | --- | --- | --- |
| Source | Gas | Included? | Justification/Explanation |
| Baseline | Source 1 | CO2 |  |  |
| CH4 |  |  |
| N2O |  |  |
| Other |  |  |
| Source 2 | CO2 |  |  |
| CH4 |  |  |
| N2O |  |  |
| Other |  |  |
| Project | Source 1 | CO2 |  |  |
| CH4 |  |  |
| N2O |  |  |
| Other |  |  |
| Source 2 | CO2 |  |  |
| CH4 |  |  |
| N2O |  |  |
| Other |  |  |

# Baseline Scenario

For methodologies applying a project method, describe the criteria and procedures for identifying alternative baseline scenarios and determining the most plausible scenario. This may be done within the methodology or through reference to other tools.

For AFOLU methodologies, describe the procedures for establishing land-use and land-cover change rates, identifying historical management practices, establishing common practice, and/or identifying current and/or historical ecological characteristics, as applicable.

For methodologies applying a standardized method, describe the most plausible baseline scenario or aggregated baseline scenario, including the technologies or measures that constitute this scenario. Note that the control data represents the most plausible baseline scenario for methodologies establishing a dynamic performance benchmark. Such methodologies must include requirements for control data's source(s), an approach to match control data with monitored data (including an acceptable range for matched data), and how frequently control data must be updated.

For methodologies applying a performance method for determining the crediting baseline, identify the level of the performance benchmark metric for the crediting baseline. Describe the data, analysis and process used to establish the benchmark in Appendix 1.

# Additionality

For methodologies applying a project method for demonstrating additionality, describe the criteria and procedures for assessing and demonstrating additionality. This may be done within the methodology or through reference to an additionality tool approved under the VCS Program or an approved GHG program.

Where an additionality tool is referenced, it must be stated that the latest version of the tool must be used. The methodology may also include additional requirements, procedures and guidance to augment the tool and ensure it is applied appropriately within the context of the methodology.

For methodologies applying a standardized method (i.e., performance or activity method) for demonstrating additionality, address the VCS Program regulatory surplus requirements. This should be done by requiring the project proponent to demonstrate regulatory surplus in accordance with the requirements for methodologies set out in the latest version of the VCS Methodology Requirements. The regulatory surplus requirements themselves should not be copy and pasted out of the VCS Methodology Requirements into methodologies (rather, the methodology should refer to the VCS Program requirements, as in the examples below).

For methodologies applying a performance method for demonstrating additionality, identify and describe the performance benchmark metric that is used for the demonstration of additionality. Specify the level of the performance benchmark metric that will serve as the threshold for additionality. Describe the data, analysis and process used to establish the benchmark in the Performance Method Appendix provided.

For methodologies applying an activity method for demonstrating additionality, include a brief summary of the option (A, B or C) used to establish the positive list, using the appendix provided to give a full description of the data, analysis and process used. Also include a statement that the Applicability Conditions section of the methodology represents the positive list.

This methodology uses a project method for the demonstration of additionality.

<or>

This methodology uses a performance method for the demonstration of additionality.

**Step 1: Regulatory Surplus**

Project proponents must demonstrate regulatory surplus in accordance with the rules and requirements regarding regulatory surplus set out in the latest version of the VCS Methodology Requirements.

**Step 2: Performance Benchmark**

…

<or>

This methodology uses an activity method for the demonstration of additionality.

**Step 1: Regulatory Surplus**

Project proponents must demonstrate regulatory surplus in accordance with the rules and requirements regarding regulatory surplus set out in the latest version of the VCS Methodology Requirements.

**Step 2: Positive List**

The applicability conditions of this methodology represent the positive list. The project must demonstrate that it meets all of the applicability conditions, and in so doing, it is deemed as conforming with the positive list.

The positive list was established using the <activity penetration / financial viability / revenue streams> option (Option <A/B/C> in the VCS Methodology Requirements) …

# Quantification of ESTIMATED GHG Emission Reductions and Removals

## Baseline Emissions

*Describe the criteria and procedures, including relevant equations, for the quantification of GHG emissions and/or carbon stock changes for the selected GHG sources and carbon pools in the baseline scenario.*

*Trivial calculations such as averages may be excluded from the equations for simplicity. In such cases, they must be added as a monitoring parameter with clear indications for calculation and to avoid ambiguity (e.g., clarify whether a weighted average or a simple average is used)*.

*Include summary information to describe the context of equations and ensure clarity of the calculation approach.*

*Include concise procedures and requirements. Do not include background information, lengthy explanations, or justifications that are not relevant for the application of the methodology. Such additional information should be included in the appendices. Footnotes may also be used for brief additional information.*

*Use the example format below (copy and paste) for specifying equations and defining the associated parameters and variables:*

* Ensure all equations are numbered using captions to specify the equation number and enable cross-referencing.
* Introduce only one equation at a time, followed by the relevant parameter description.
* *Typically, introduce the main equation (higher level) at the beginning of this section and then introduce other equations (lower level) to facilitate understanding. For example:*
1. *Provide the main equation for BEy with the parameters, criteria and procedures.*
2. *Introduce the equation for BEFC,y with the parameters, criteria and procedures.*
3. *Introduce the equation for BEEC,y with the parameters, criteria and procedures.*
* *Ensure that parameters and variables are consistently applied throughout the equations in the methodology. Use short and logical abbreviations for parameters and use subindexes to specify periods (x, y, z), cases and subcases (i, j, k) and to differentiate baseline (B) from Project (P) if not in the abbreviation.*
* *Use the following main parameters:*
	+ *GHG emissions reductions in year y: ERy*
	+ *Carbon dioxide removals in year y: CRy*
	+ *Baseline emissions in year y:BEy*
	+ *Project emissions in year y: PEy,*
	+ *Carbon stock changes in year y: ΔBCSy (baseline) and ΔPCSy (project)*
	+ *Leakage emissions in year y: LEy*
* Use the “equation function” of MS Word for equations.
* *The parameters and descriptions are included in a hidden table (table with a white border) as in the example below. This is to ensure that the structure, formatting and indents are maintained. Copy and paste the table in the example below and delete rows that are not used or add additional rows as needed.*
* *Use normal font to write the parameters in the description below the equations. Do not use the “equation function” for the parameter in the description section.*
* *Include the unit of measure for each parameter using the International System of Units (IS).*
* *Describe the parameters clearly. Include in the description if they are totals, averages over x years, or any other relevant information.*
* *If default values are proposed, indicate whether they are optional and include the default values after the equation.*
* *Include the unit of each parameter in parentheses.*

Examples:

Baseline emissions are calculated as follows:

|  |  |
| --- | --- |
| $$BE\_{y}= \sum\_{i}^{}BE\_{FC,i,y}$$ | (1) |

Where:

|  |  |  |
| --- | --- | --- |
| $$BE\_{y}$$ | = | Baseline emissions in year y (tCO2e) |
| $$BE\_{FC,i,y}$$ | = | Baseline emissions from fossil fuel i consumed in year y (tCO2e) |
|  |  |  |

The baseline carbon stock change is calculated as follows:

|  |  |
| --- | --- |
| $$ΔBCS\_{y}= ΔAGB\_{BL,y}+ΔBGB\_{BL,y}+ΔDW\_{BL,y}$$ | (2) |

Where:

|  |  |  |
| --- | --- | --- |
| $$ΔBCS\_{y}$$ | = | Baseline carbon stock change in the project area in year y (tCO2e/yr) |
| $$ΔAGB\_{BL,y}$$ | = | Increase in aboveground biomass stocks in the project area in the baseline scenario in year y (tCO2e/yr) |
| $$ΔBGB\_{BL,y}$$ | = | Increase in belowground biomass stocks in the project area in the baseline scenario in year y (tCO2e/yr) |
| $$ΔDW\_{BL,y}$$ | = | Increase in dead wood stocks in the project area in the baseline scenario in the baseline scenario in year y (tCO2e/yr) |

## Project Emissions

*Describe the criteria and procedures, including relevant equations, for the quantification of GHG emissions, carbon stocks and/or carbon stock changes for the selected GHG sources, sinks and/or reservoirs for the project. Follow the instructions for equations provided in Section 8.1 (Baseline Emissions) above.*

*Where a methodology includes both emission reductions and removals, project emissions must specify whether they relate to the reductions, removals, or both as per the allocation principles in the latest version of the* Methodology Requirements*.*

*Apply the same instructions included in Section 8.1*

Examples:

The project carbon stock change is calculated as follows:

|  |  |
| --- | --- |
| $$ΔPCS\_{y}= ΔAGB\_{PR,y}+ΔBGB\_{PR,y}+ΔDW\_{PR,y}$$ | (3) |

Where:

|  |  |  |
| --- | --- | --- |
| $$ΔPCS\_{y} $$ | = | Project carbon stock change in the project area in year y (tCO2e/yr) |
| $$ΔAGB\_{PR,y}$$ | = | Increase in aboveground biomass stocks in the project area in the project scenario in year y (tCO2e/yr) |
| $$ΔBGB\_{PR,y}$$ | = | Increase in belowground biomass stocks in the project area in the project scenario in year y (tCO2e/yr) |
| $$ΔDW\_{PR,y}$$ | = | Increase in dead wood stocks in the project area in the project scenario in year y (tCO2e/yr) |

Project emissions related to only reductions are calculated as follows:

|  |  |
| --- | --- |
| $$PE\_{ER,y}= \sum\_{i}^{}PE\_{FC,i,y}$$ | (4) |

Where:

|  |  |  |
| --- | --- | --- |
| $$PE\_{ER,y}$$ | = | Project emissions related to only reductions in year y (tCO2e) |
| $$PE\_{FC,i,y}$$ | = | Project emissions from fossil fuel i consumed in year y (tCO2e) |
|  |  |  |

Project emissions related to both reductions and removals in year y are calculated as follows:

|  |  |
| --- | --- |
| $$PE\_{ERR,y }= PE\_{trans\_{y}}+ PE\_{EC\_{y}}$$ | (5) |

Where:

|  |  |  |
| --- | --- | --- |
| $$PE\_{ERR,y }$$ | = | Project emissions related to both reductions and removals in in year y (tCO2e) |
| $$PE\_{FC\_{y}}$$ | = | Project emission from transport in year y (tCO2e) |
| $$PE\_{EC\_{y}}$$ | = | Project emissions from electricity consumption in year y (tCO2e) |

## Leakage Emissions

*Describe the criteria and procedures, including relevant equations, for the quantification of GHG emissions for the selected GHG sources, sinks and/or reservoirs for leakage. Apply the same instructions included in Section 8.1.*

*Where a methodology includes both emission reductions and removals, the methodology must specify whether each leakage emissions parameter relates to the reductions, removals, or both as per the allocation principles in the latest version of the* Methodology Requirements*.*

Example:

Leakage emissions related to both reductions and removals in year y are calculated as follows:

|  |  |
| --- | --- |
| $$LE\_{ERR,y }= LE\_{trans,y}$$ | (6) |

Where:

|  |  |  |
| --- | --- | --- |
| $$LE\_{ERR,y }$$ | = | Leakage emissions related to both reductions and removals in in year y (tCO2e) |
| $$LE\_{trans,y}$$ | = | Project emission from transport in year y (tCO2e) |

## Estimated GHG Emission Reductions and Carbon Dioxide Removals

Describe the procedure for quantifying net GHG emission reductions, *carbon stocks and/or carbon stock changes*, as a function of baseline emissions, project emissions and leakage. *Follow the instructions for equations in Section 8.1 (Baseline Emissions) above. Where relevant, include equations for estimating uncertainty.*

*Methodologies shall include separate equations for total net GHG emission reductions and total carbon dioxide removals, considering the allocation principles in the latest version of the* Methodology Requirements*.*

Example:
A project that has both reductions and removals and all project emissions sources are applicable to both the reduction and removal activities. The baseline condition also has an increase in carbon stocks but to a lesser degree.

The net carbon stock increase in the project area in year y is calculated as follows:

|  |  |
| --- | --- |
| $$ΔCS\_{y}= ΔPCS\_{y}-ΔBCS\_{y}$$ | (7) |

Where:

|  |  |  |
| --- | --- | --- |
| $$ΔCS\_{y}$$ | = | Net carbon stock increase in the project area in year y (tCO2e/yr) |

The project emissions related to both reductions and removals are allocated proportionally to the removals as follows:

|  |  |
| --- | --- |
| $$PE\_{ERR,CR,y}= PE\_{ERR,y}×\frac{ΔCS\_{y}}{ΔCS\_{y}+BE\_{y}-PE\_{ER,y}}$$ | (8) |

Where:

|  |  |  |
| --- | --- | --- |
| $$PE\_{ERR,CR,y}$$ | = | Project emissions related to both reductions and removals allocated to removals in year y (tCO2e/yr) |

The leakage emissions related to both reductions and removals are allocated proportionally to the removals as follows:

|  |  |
| --- | --- |
| $$LE\_{ERR,CR,y}= LE\_{ERR,y}×\frac{ΔCS\_{y}}{ΔCS\_{y}+BE\_{y}-PE\_{ER,y}}$$ | (9) |

Where:

|  |  |  |
| --- | --- | --- |
| $$LE\_{ERR,CR,y}$$ | = | Leakage emissions related to both reductions and removals allocated to removals in year y (tCO2e/yr) |

The carbon dioxide removals are calculated as follows:

|  |  |
| --- | --- |
| $$CR\_{y}= ΔCS\_{y}-PE\_{ERR,CR,y}-LE\_{ERR,CR,y}$$ | (10) |

Where:

|  |  |  |
| --- | --- | --- |
| $$CR\_{y}$$ | = | Carbon dioxide removals in year y (tCO2e/yr) |

The GHG emission reductions are calculated as follows:

|  |  |
| --- | --- |
| $$ER\_{y}= BE\_{y}-PE\_{ER,y}-(PE\_{ERR,y}-PE\_{ERR,CR,y})-(LE\_{ERR,y}-LE\_{ERR,CR,y})$$ | (11) |

Where:

|  |  |  |
| --- | --- | --- |
| $$ER\_{y}$$ | = | GHG emissions reductions in year y (tCO2e/yr) |

# Monitoring

## Data and Parameters Available at Validation

Complete the table below for all data and parameters that will be determined or available at validation and remain fixed throughout the project crediting period (copy the table for each data/parameter). Data and parameters monitored during the operation of the project are included in Section 9.2 (Data and Parameters Monitored) below.

The parameters must be introduced in order of appearance in Section 8 “GHG quantification”.

Ensure that data sources are appropriate and conform with VCS Program rules and requirements. Likewise, ensure that rules and requirements for models and default factors are adhered to.

Ensure that all data and parameters used in the equations for quantification of GHG emission reductions and removals in the methodology are included in this section (Data and Parameters Available at Validation) or the following section (Data and Parameters Monitored).

Where the methodology establishes default factors which may become out of date (i.e., default factors that do not represent physical constants or otherwise would be expected to change significantly over time), make note of same in the Comments field.

|  |  |
| --- | --- |
| Data / Parameter |  |
| Data unit | *Indicate the unit of measure* |
| Description | *Provide a brief description of the data/parameter* |
| Equations | *List the equation(s) that use this data/parameter**Use cross-references* |
| Source of data | Indicate the source(s) of data |
| Value applied | Provide the default value applied if applicable |
| Justification of choice of data or description of measurement methods and procedures applied | Justify the choice of data source, providing references where applicable. Where values are based on measurement, include a description of the measurement methods and procedures applied (e.g., what standards or protocols have been followed), indicate the responsible person/entity that undertook the measurement, the date of the measurement and the measurement results. More detailed information may be provided in an appendix. |
| Purpose of Data | Indicate one of the following: * Determination of baseline scenario (AFOLU projects only)
* Calculation of baseline emissions
* Calculation of project emissions
* Calculation of leakage
 |
| Comments | Provide any additional comments |

 *Example:*

|  |  |
| --- | --- |
| Data / Parameter | $$NCV\_{FF,i}$$ |
| Data unit | GJ/tonne |
| Description | Net calorific value of fossil fuel i used in the baseline scenario |
| Equations | (1) |
| Source of data | Use values from 2006 IPCC Guidelines for National Greenhouse Gas Inventories |
| Value applied | N/A |
| Justification of choice of data or description of measurement methods and procedures applied | The IPCC Guidelines for National Greenhouse Gas Inventories is internationally recognized and the data provided in the guidelines is peer reviewed |
| Purpose of Data | Calculation of baseline emissions |
| Comments | N/A |

## Data and Parameters Monitored

Complete the table below for all data and parameters that will be monitored during the project crediting period (copy the table as necessary for each data/parameter). Data and parameters determined or available at validation are included in Section 9.1 (Data and Parameters Available at Validation) above.

Ensure that data sources are appropriate and conform with VCS Program rules and requirements. Likewise, ensure that rules and requirements for models and default factors are adhered to.

Parameters that are not directly monitored themselves (i.e., are calculated, using monitored data/parameters and the equations provided in the methodology) do not need to be included in this section.

|  |  |
| --- | --- |
| Data / Parameter: |  |
| Data unit: | *Indicate the unit of measure* |
| Description: | *Provide a brief description of the data/parameter* |
| Equations | *List the equation(s) that use this data/parameter* |
| Source of data: | *Indicate the source(s) of data* |
| Description of measurement methods and procedures to be applied: | *Specify the appropriate measurement methods and procedures and any standards or protocols that must be followed. Include any relevant information regarding the accuracy of the measurements (e.g., accuracy associated with meter equipment or laboratory tests).* |
| Frequency of monitoring/recording: | *Specify measurement and recording frequency* |
| QA/QC procedures to be applied: | *Describe the quality assurance and quality control (QA/QC) procedures to be applied, including the calibration procedures where applicable* |
| Purpose of data: | *Indicate one of the following:* * Determination of baseline scenario (AFOLU projects only)
* Calculation of baseline emissions
* Calculation of project emissions
* Calculation of leakage
 |
| Calculation method: | *Describe any method to derive the value, such as average, value at standard conditions, etc.* |
| Comments: |  Provide any additional comments |

 *Example:*

|  |  |
| --- | --- |
| Data / Parameter: | $$EC\_{P,y}$$ |
| Data unit: | MWh/yr |
| Description: | Quantity of electricity consumed by project facility from the grid in year y  |
| Equations | (2), (5) |
| Source of data: | Measurements at project facility  |
| Description of measurement methods and procedures to be applied: | Use calibrated electricity meters from the grid supplier.  |
| Frequency of monitoring/recording: | Data must be monitored continuously and recorded on a monthly basis or with the frequency applicable according to the grid supplier. |
| QA/QC procedures to be applied: | The consistency of metered electricity consumption should be cross-checked with receipts from electricity bills where applicable |
| Purpose of data: | Calculation of project emissions |
| Calculation method: | Electricity meter is cumulative. The monthly electricity consumption is the difference between initial and final reading within one month. |
| Comments: | N/A |

## Description of the Monitoring Plan

*Describe the criteria and procedures for obtaining, recording, compiling and analyzing monitored the data and parameters set out in Section 9.2 above.*

# References

Include any references relevant to the methodology. Follow the style of the following examples:

Aynekulu, E. Vagen, T-G., Shephard, K., Winowiecki, L. (2011). *A protocol for modeling, measurement and monitoring soil carbon stocks in agricultural landscapes*. Version 1.1. World Agroforestry Centre, Nairobi.

Beem-Miller, J.P., Kong A.Y.Y., Ogle S. & Wolfe D. (2016). *Sampling for soil carbon stock assessment in rocky agricultural soils*. Soil Science Society of America Journal. 80: 1411–1423.

IEA (2005). *Energy statistics manual*. IEA. Available at: https://www.iea.org/reports/energy-statisticsmanual-2

# APPENDIX X: Performance Method

Where the methodology applies a performance method for determining additionality and/or the crediting baseline, complete the sections below. For all other methodologies, delete this appendix.

The purpose of this appendix is to provide background information on the performance method and to provide transparency with respect to the rigor and appropriateness of the performance method. The main body of the methodology should be kept clear of such background information. The sections below provide instructions on the information required, though the instructions are not exhaustive. Additional information must be added where required by the VCS Program rules and should be added where this would help to establish the rigor and appropriateness of the performance method.

## Applicability Conditions

Provide information with respect to how the applicability conditions ensure the following:

* The methodology, to the extent practicable, excludes those classes of project activities that it can be reasonably assumed will be implemented without the intervention created by the carbon market.
* Projects implement technologies and/or measures that cause performance improvement relative to the crediting baseline and what is achievable within the sector.
* The methodology or performance benchmark is only applicable to the geographic area for which data are available, or that data from one geographic area are representative of another or that it is conservative to apply data from one geographic area to another.

## Baseline Scenario

Provide the following information with respect to the baseline scenario:

* For static performance benchmarks and autonomous improvement factor performance benchmarks, provide the following information:
	+ A description and analysis of the current distribution of performance within the group of emitters to which the methodology and performance benchmark is applicable, including current trends in performance.
	+ Describe the alternative baseline scenarios that were identified and the process followed to determine the most plausible baseline scenario or an aggregate baseline scenario for the project activity.
* For dynamic performance benchmarks, provide the following information:
	+ *Procedure that projects must follow to set out the baseline scenario based on control data including the required source(s) for control data, the approach for projects to match control data with monitored data (including an acceptable range for matched data) and the frequency with which projects must update the control data.*
	+ *Justification for how and why the identified source(s) of control data represent the most plausible baseline scenario.*

## Performance Benchmark

Provide the following information with respect to the performance benchmark:

* For static performance benchmarks and autonomous improvement factor performance benchmarks:
	+ Provide a discussion and evaluation of the tradeoff between false negatives and false positives in selecting the level of the performance benchmark metric. Describe objectively and transparently the evidence used, experts consulted, assumptions made, and analysis (including numerical analysis) and process undertaken in determining the selected level of the performance benchmark metric. Include a summary of the expert consultation process noting that the full expert consultation report must be attached as a separate document or provided in an appendix.
	+ Explain and justify the appropriateness of data sources used to establish the performance benchmark metric.
* *For dynamic performance benchmarks, explain and justify:*
	+ *The level of the performance benchmark metric in comparison to the control data (e.g., X% above average unit of input, output, sequestration or carbon stock change).*
* Where proxy metrics or conditions for the performance benchmark metric are used, demonstrate that they are strongly correlated with the performance benchmark metric and that they can serve as an equivalent or better method (e.g., in terms of reliability, consistency or practicality) to determine whether performance is achieved to a level at least equivalent to that of the performance benchmark metric.

# APPENDIX X: Activity Method

Where the methodology applies an activity method for determining additionality, complete the sections below. For all other methodologies, delete this appendix.

The purpose of this appendix is to provide background information on the activity method and to provide transparency with respect to the rigor and appropriateness of the activity method. The main body of the methodology should be kept clear of such background information. The sections below provide instructions on the information required, though the instructions are not exhaustive. Additional information must be added where required by the VCS Program rules and should be added where this would help to establish the rigor and appropriateness of the activity method.

## Applicability Conditions

Provide information with respect to how the applicability conditions ensure the following:

* The methodology, to the extent practicable, excludes those classes of project activities that it can be reasonably assumed will be implemented without the intervention created by the carbon market.
* There is similarity across the sub-areas of the geographic scope (to which the methodology is applicable) in factors such as socio-economic conditions, climatic conditions, energy prices, raw material availability and electricity grid emission factors, as such factors relate to the baseline scenario and additionality.

## Baseline Scenario

Provide the following information with respect to the baseline scenario:

* Provide a description and analysis of the current distribution of performance within the group of emitters to which the methodology is applicable, including current trends in performance.
* Describe the alternative baseline scenarios that were identified and the process followed to determine the most plausible baseline scenario or an aggregate baseline scenario for the project activity.

## Positive List

Provide the following information with respect to the positive list:

* Identify the option selected for establishing the positive list (Option A, B or C) and provide a detailed description to demonstrate how each of the steps and associated requirements for the selected option have been addressed.
* Explain and justify the appropriateness of data sources used to establish the positive list.

# APPENDIX X: BACKGROUND INFORMATION

Include detailed background information, explanations, and justifications of key methodological components in this appendix to keep the main sections of the methodology concise and focused on the relevant procedures and requirements.

Include different appendices to separate information as needed. Adapt the title of each appendix based on the content.

# APPENDIX X: justification for upstream displacement discount factor

*Where the methodology credits upstream displacement activities and uses a discount factor other than the default value provided in the latest version of the* VCS Methodology Requirements, *include the justification as an appendix. For all other methodologies, delete this appendix.*

*The justification of the discount factor must use one of the following options:*

1. *An analysis of at least three peer-reviewed publications in reputable journals that are listed in the Web of Science: Science Citation Index (SCI; available at https://mjl.clarivate.com); or*
2. *A market analysis of supply and demand elasticities associated with, or analogous to, the considered activity, product, or service.*

# APPENDIX X: Document History

Include the document history with a brief history of revisions to the methodology.

Example:

|  |  |  |
| --- | --- | --- |
| **Version** | **Date** | **Comment** |
| v1.0 | 19 Oct 2020 | Initial version  |
| V1.1 | 07 Feb 2021 | Minor revision, including the following changes:* Clarifications to applicability conditions in Section 4
* Correction of Equation 7 including indices i and j in parameter P0,i,j
 |
| v2.0 | 30 May 2023 | Major revisions, including the following changes:* Introduction of a baseline control sites option to allow for direct SOC measurement under Quantification Approach 2
* Update of Section 8.6 on uncertainty assessment to clarify statistical procedures and align with the *VCS* *Methodology Requirements*
* Introduction of guidance on the use of proximal sensing technologies to estimate SOC content in Appendix 4
* Introduction of an applicability condition allowing for one-time land conversion from grassland to cropland or vice versa to restore degraded lands in Section 4 and Appendix 2
* Introduction of a requirement and procedures to account for emissions associated with use of agricultural limestone in Section 8.2.4
* Introduction of a requirement to account for leakage from diversion of biomass residues used for energy applications in the baseline scenario
* General improvements, errata and clarifications
 |