



Methodology for the Quantification, Monitoring, Reporting and Verification of Greenhouse Gas Emissions Reductions and Removals from

DOCUMENT Primary title

Version x.x

Month 2018



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ABOUT AMERICAN CARBON REGISTRY® (ACR)

A leading carbon offset program founded in 1996 as the first private voluntary GHG registry in the world, ACR operates in the voluntary and regulated carbon markets. ACR has unparalleled experience in the development of environmentally rigorous, science-based offset methodologies as well as operational experience in the oversight of offset project verification, registration, offset issuance and retirement reporting through its online registry system.

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Note to authors

The American Carbon Registry has created this template to ensure readability and consistency in all our protocols; **WE THANK TOU FOR YOUR ADHERENCE TO THIS TEMPLATE.**

Title Page – enter the methodology primary title here. This will auto populate page headers and footers and other locations where the title appears.

Header size, color and styles are pre-set. Please use the menu options available.

Font size (Arial 11 at minimum depending on text hierarchy), line spacing, and text color (green headers and black body, otherwise shown on tables, equations, or other parts of the text) footnotes and table styles are also pre-set. Examples of all appear at the end of this document. Tables, Figures and Equation boxes can be copied from here or inserted to achieve the pre-set styles.

Section titles and sub-titles that appear in this document must be maintained. In sections where no sub-titles are present, authors can create their own as suits their document.

Please contact ACR for further questions on how to use this document.

# ACKNOWLEDGEMENTS

 [Whom should be credited with authorship etc.?]

# ACRONYMS

|  |  |
| --- | --- |
| ACR | American Carbon Registry |
| Term 2 | Placeholder text for spelling out of acronym. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Maecenas porttitor congue massa. |
| Term 3 | Placeholder text for spelling out of acronym. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Maecenas porttitor congue massa. |

# METHODOLOGY DESCRIPTION

Provide a concise summary, in steps, of the proposed methodology. What broader project type/sector does this methodology fall under? What project activities is this methodology applicable to? How does the project activity reduce GHG emissions?

#  ELIGIBILITY CONDITIONS

In addition to satisfying the latest ACR program requirements, project activities must satisfy the following conditions for this methodology to apply:

[Provide a full, numbered list of testable requirements for use of the methodology. The list shall include:]

1. Conditions that are required and that if absent would negate the ability of projects to use the methodology;
2. Conditions that if in existence immediately exclude projects from use of the proposed methodology; and
3. Conditions related to geographic location, if any restrictions exist.
4. Any eligibility criteria that is specific to aggregated or programmatic development approach projects.

# 3 PROJECT BOUNDARIES

## 3.1 SPATIAL BOUNDARY

Outline the how the physical project area is defined. Note that if the project activity contains more than one discrete area of land each area must have a unique geographical identification, and that each site, facility, or parcel must meet the eligibility requirements of the ACR Standard. Include what types of information must be made available, such as maps and GIS shapefiles, to delineate the spatial boundary.

## 3.2 TEMPORAL BOUNDARY

Describe the temporal boundary of planned project activities. Include requirements for project start date, crediting periods, baseline renewal and project life, consistent with the ACR Standard.

### 3.2.1 START DATE

### 3.2.2 CREDITING PERIOD

### 3.2.3 PROJECT TERM

## 3.3 GHG ASSESSMENT BOUNDARY

Indicate and justify greenhouse gas emission sources included and excluded. If needed, specify if there are differences in the baseline and with-project case.

|  |  |  |  |
| --- | --- | --- | --- |
| **Gas** | **Source** | **Included / excluded** | **Justification / Explanation of choice** |
| CO2 |  |  |  |
|  |  |  |
|  |  |  |
| CH4 |  |  |  |
|  |  |  |
|  |  |  |
| N2O |  |  |  |
|  |  |  |
|  |  |  |

# 4 PERIODIC REVIEWS

Standard Text: ACR may require revisions to this Methodology to ensure that monitoring, reporting, and verification systems adequately reflect changes in the project’s activities. This Methodology may also be periodically updated to reflect regulatory changes, emission factor revisions, or expanded applicability criteria. Before beginning a project, the project proponent should ensure that they are using the latest version of the Methodology.

# 5 BASELINE DETERMINATION and additionality

## 5.1 Baseline determination

Delineate how the baseline scenario can be determined. This should include requiring why, among potential baseline candidates, this baseline scenario was chosen. The methodology should also specify whether it is allowable for different areas within the project boundary to contain different baseline scenarios (if necessary).

## 5.2 ADDITIONALITY ASSESSMENT

Describe whether the methodology requires projects to use ACR’s three-pronged additionality test: beyond regulatory requirements, beyond common practice, and facing at least one of three implementation barriers (financial, technological, or institutional) OR if it requires projects to demonstrate that the activity is beyond regulatory requirements and exceeds an approved performance standard.

### 5.2.1 REGULATORY SURPLUS TEST

Example text: To pass the regulatory surplus test, a project must not be mandated by existing laws, regulations, statutes, legal rulings, or any other regulatory frameworks that directly or indirectly affect the GHG emissions associated with a project. The project proponent must demonstrate that there is no existing law, regulation, statute, legal ruling, or other regulatory framework that mandates the project or effectively requires the GHG emission reductions associated with the project activity.

### 5.2.2 PERFORMANCE STANDARD (if applicable)

Provide a description of the performance standard, how it was derived (an in depth version can be provided in an appendix), and what requirements must be met in order to be eligible to use the performance standard, in addition to demonstrating that there is no existing law, regulation, statute, legal ruling, or other regulatory framework that mandates the project or effectively requires the GHG emission reductions associated with the project activity.

### 5.2.3 THREE-PRONGED ADDITIONALITY TEST (if applicable)

Provide a description of how to apply the Three-Prong Additionality Test, any specific requirements that pertain to this methodology, and any additional tools that may be required or suggested.

# 6 STRATIFICATION (if applicable)

Describe the steps required for the division of the project area in the with-project case into subpopulations or strata with lower variation than the entire area. This section may not be necessary for non-AFOLU project types.

# 7 USE OF MODELS FOR ESTIMATING EMISSIONS (if applicable)

Describe the eligible models and the methods that shall be used to generate GHG emission reductions and removals. Full descriptions of the models and their development can be included in an appendix. Please note, models must be published in a peer-reviewed journal and approved by ACR prior to use in an ACR methodology.

#  QUANTIFICATION OF GHG EMISSIONS REDUCTIONS

Describe the quantification method in the sections below for estimating baseline and project emissions. Include all applicable equations, citations, or references. Add or subtract additional baseline and project emission categories as necessary.

## 8.1 BASELINE NET GHG EMISSIONS (add additional SSR sub-sections as necessary)

### 8.1.1 ACCOUNTING BASELINE EMISSIONS FROM [ADD RELEVANT SSR NAME]

8.2 PROJECT SCENARIO NET GHG EMISSIONS (add additional SSR sub-sections as necessary)

### 8.2.1 ACCOUNTING PROJECT EMISSIONS FROM [ADD RELEVANT SSR NAME]

## 8.3 LEAKAGE

Establish whether leakage must be considered for the proposed project type including why or why not. Describe the methods used to monitor leakage over time.

### 8.3.1 DESCRIPTION OF LEAKAGE

### 8.3.2 QUANTIFICATION OF LEAKAGE DEDUCTION

Provide a quantification method to account for leakage, if necessary.

## 8.4 NET GHG EMISSIONS

Provide a quantification method to account for the difference in GHG emissions between the baseline and with-project scenarios, including leakage.

## 8.5 UNCERTAINTY

Establish how each relevant source of uncertainty should be assessed. The following equation is mandatory for all methodologies that requires sampling:

****

Where:

*UNC* Total Project Uncertainty, in %

*UNCBSL* Baseline uncertainty, in %

*UNCWP* With-project uncertainty, in %

*UNC* will be set to zero if the project achieves ACR’s precision requirement of within 10% of the mean with 90% confidence.

## 8.6 PERMANENCE AND REVERSAL RISK (if applicable)

### 8.6.1 ASSESSMENT OF REVERSAL RISK (if applicable)

### 8.6.2 MITIGATION OF REVERSAL RISK (if applicable)

### 8.6.3 BUFFER POOL CONTRIBUTIONS (if applicable)

# 9 MONITORING AND DATA COLLECTION

Provide an overview of the data or other parameters that will need to be monitored during the lifetime of the project either for the purposes of calculation or demonstrating additionality. In Section 11.1, outline each parameter needed to meet the requirements of the methodology, the units (if applicable), a description of the parameter, what section or equation it is relevant to, the source of the data, and the frequency of the measurement.

## 9.1 PARAMETERS

Use the table below when listing each parameter.

Acronyms: State the variable or term that may be used in an equation or shorthand within the methodology.

Unit: Designate the unit that the parameter should be reported or converted to.

Parameter: Provide a succinct name and a description of the parameter, if necessary.

Potential Evidence: Stipulate a list of suggested evidence types that may be used to satisfy any monitoring requirements.

Source: Provide the source of where potential evidence may be found. If using a default emission factors, provide the source of the emission factor here.

Applicable to Baseline or Project: State whether the parameter pertains to the baseline or project, or both.

Frequency of Monitoring: State the frequency with which the parameter needs to be monitored. This can be once during the crediting period, annually or not at all for default emission factors.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Acronym | Unit | Parameter | Potential Evidence | Source | Baseline or Project? | Frequency of Monitoring |
|   |   |   |   |   |   |   |
|   |   |   |   |   |   |   |
|   |   |   |   |   |   |   |

# 10 VALIDATION AND VERIFICATION

Describe any specific validation or verification requirements, frequency with which verification is required, or guidance specific to the audit process for projects using this methodology.

# DEFINITIONS

*Standard Text*: If not otherwise defined here, the current definitions in the latest version of the American Carbon Registry Standard apply.

Add other sector and project-specific definitions here-

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# APPENDIX A: DEVELOPMENT OF PERFORMANCE STANDARD (if applicable)

# APPENDIX B: DEFAULT EMISSION FACTORS (if applicable)

# APPENDIX C: BACKGROUND AND SUPPORTING INFORMATION (if any)

###### APPENDIX D: REFERENCES

Use American Psychological Association (APA) style for references and citations.

APA format structure for article found in print

Author, A.A.. (Publication Year). Article title. *Periodical Title, Volume*(Issue), pp.-pp.

Example

Nevin, A. (1990). The changing of teacher education special education. *Teacher Education and Special Education: The Journal of the Teacher Education Division of the Council for Exceptional Children, 13*(3-4), 147-148.

APA format structure for article found online

Author, A.A.. (Publication Year). Article title. *Periodical Title*, Volume(Issue), pp.-pp. doi:XX.XXXXX or Retrieved from journal URL

Example

Jameson, J. (2013). E-Leadership in higher education: The fifth “age” of educational technology research. *British Journal of Educational Technology, 44*(6), 889-915. doi: 10.1111/bjet.1210

FORMATTING STYLE EXAMPLES

* Footnotes: The following is an example of the formatting of a footer[[1]](#footnote-1).
* Hyperlinks. The following is an [example of a hyperlink](http://americancarbonregistry.org/). The one exception is for the ACR website in the copyright page and footer, which are in ACR green.
* Highlights. The following is an example of highlighted text.
* Citations and references. Use American Psychological Association (APA) style for references and citations. This is the structure of an in-text citation (Author Last Name, Publication Year). For example, (Smith et, 1998).
* Bullet level 1
* Bullet level 2
	+ Bullet level 3
		- Bullet level 4
1. Sequential element
2. Sequential element
3. Sequential element
4. Level one
	1. Level two
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			1. Level four
				1. Level five

Table : Title of Horizontal Table

If applicable, add here a brief explanatory sentence describing the table.

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| Term 3 | Lorem ipsum dolor sit amet, consectetuer adipiscing elit.  |

Placeholder for caption.

Table : Title of Vertical Table

If applicable, add here a brief explanatory sentence describing the table.

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Figure : Title of Figure

If applicable, add here a brief explanatory sentence describing the figure.



Placeholder for caption.

Equation : Title of Equation

If applicable, add here a brief explanatory sentence describing the equation.

|  |
| --- |
| $$BE\_{y}=\sum\_{i}^{}{\left[\left(Q\_{BR,j,i} × ERA\_{REF,j}\right)\right]}/{1000} × GWP\_{REF,j}] $$ |
| WHERE |  |
| Equ. | Placeholder for definition with components in equation style like i and j. |
| Equ. | Placeholder for definition with components in equation style like i and j. |

1. Sample of footnote. The number is in ACR green and in superscript. The first letter of the hanging line (second line) is meant to align vertically with the first letter in the first line. Further indentation adjustments might be needed beyond single digit footers (starting with 10).

	* Example of primary bullet specific for the footer
	* Example of primary bullet specific for the footer [↑](#footnote-ref-1)