



The American Carbon Registry® Forest Carbon Project Standard

The American Carbon Registry's requirements and specifications for the quantification, monitoring, and reporting of forest project-based greenhouse gas emissions reductions and removals, methodological acceptance, verification, registration, and issuance of offsets.

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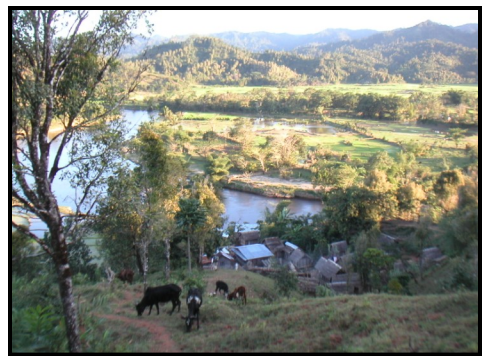


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Acronym List

ACR	American Carbon Registry®
AFOLU	Agriculture, Forestry and Other Land Use
AR	Afforestation/Reforestation
C	Carbon
CDM	Clean Development Mechanism
CH ₄	Methane
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
DNA	Designated National Authority
ERT	Emissions Reduction Tonne (ACR unit of exchange for verified offsets)
GHG	Greenhouse gas
GWP	Global warming potential
IFM	Improved Forest Management
IPCC	Intergovernmental Panel on Climate Change
IRR	Internal rate of return
ISO	International Organization for Standardization
N ₂ O	Nitrous oxide
NPV	Net present value
REC	Renewable Energy Credit
REDD	Reducing Emissions from Deforestation and Degradation
UNFCCC	United Nations Framework Convention on Climate Change
USEPA	United States Environmental Protection Agency
VCS	Voluntary Carbon Standard

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The *Forest Carbon Project Standard* builds on the work of the following organizations: the Clean Development Mechanism, for its baseline, additionality determination, and monitoring tools and methodologies; the International Organization for Standardization, for its greenhouse gas (GHG) accounting guidance under International Organization for Standardization (ISO) 14064 Parts 2 (project-level guidance) and 3 (verification); and the U.S. Environmental Protection Agency, for its sector and project tools and methodologies under the Climate Leaders Program.

Introduction

The American Carbon Registry® (ACR) is a voluntary, online greenhouse gas (GHG) registration and emissions tracking system used by members to transparently register verified, project-based emissions reductions and removals as serialized offsets; record the purchase, sale, banking and retirement of tradable offsets, branded as Emission Reduction Tons (ERTs); and optionally report, in a separate account, verified GHG inventories.

ACR was founded in 1997 by the Environmental Defense Fund and Environmental Resources Trust and joined the nonprofit Winrock International in 2007. As the first private voluntary GHG registry in the United States, ACR has set the bar for transparency and integrity that is the market standard today.

Winrock International works with people in the U.S. and around the world to empower the disadvantaged, increase economic opportunity, and sustain natural resources. Key to this mission is building capacity for climate change mitigation and adaptation and leveraging the power of environmental markets. Since the 1990s, Winrock has been a leader in developing science-based carbon measurement and monitoring protocols.

Purpose

The *Forest Carbon Project Standard* details ACR's requirements and specifications for the quantification, monitoring, and reporting of forest carbon project-based emissions reductions and removals, offset verification, registration, and issuance. This standard establishes the requirements that every forest project must meet in order for ACR to register its GHG emission reductions and removals as tradable environmental assets (ERTs) for voluntary and emerging pre-compliance carbon markets.

In this and all its standards, ACR aims to provide commercial flexibility for Project Proponents and encourage widespread participation by landowners, while maintaining environmental integrity and scientific rigor necessary to ensure that projects are recognized as being of the highest quality, whether used for voluntary or pre-compliance early action purposes. Forest project-based offsets developed according to this standard and associated methodologies will represent emissions reductions and removal enhancements that are real, measurable, in excess of regulatory requirements and common practice, additional to business-as-usual, net of leakage, verified by a competent independent third party, and used only once. The standard's requirements on permanence and risk

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mitigation provide flexibility to Project Proponents and landowners while ensuring that forest offsets, which have an inherent risk of reversal, are permanent and fully fungible with other offsets, emission reductions and allowances without the need for discounting.

Applicability

The *Forest Carbon Project Standard* includes requirements for afforestation and reforestation (AR), improved forest management (IFM), and reducing emissions from deforestation and degradation (REDD). Additional eligible forest carbon project types may be added in the future. The standard does not include guidance on agricultural, grazing land, or other land use projects, which will be addressed in separate ACR standards and methodologies.

Project Proponents wishing to develop a forest project for registration on ACR should follow this standard and the general guidance in the *ACR Standard*. All projects must apply an approved methodology, which may be an existing or modified methodology approved by ACR, an ACR-published methodology, or a new methodology. All new methodologies, whether proposed by a Proponent or published by ACR, require a rigorous public consultation and scientific peer review process. In the case of any conflict between an approved methodology and the *Forest Carbon Project Standard*, the standard shall govern.

GHG Project Plans will be reviewed by ACR against the *ACR Standard, Forest Carbon Project Standard* and the chosen methodology. A GHG Project Plan is certified once all requests for corrections and clarifications have been addressed and the Plan complies with all ACR requirements. All projects must be verified by a competent ACR-approved third-party verifier. The overall offset project development and registration process is detailed in Chapter 6 of the *ACR Standard*.

The *Forest Carbon Project Standard v2.0* amplifies and replaces version 1.0 of the same document. Project Proponents and other interested parties should refer to www.americancarbonregistry.org for the latest version of this standard, the *ACR Standard*, methodologies, tools, document templates, and other guidance.

The *Forest Carbon Project Standard* was published following public consultation and scientific peer review. The appropriate citation is American Carbon Registry (2010), *American Carbon Registry Forest Carbon Project Standard, version 2.0*. Winrock International, Little Rock, Arkansas.

CHAPTER 1: SCOPE

See the *ACR Standard*, Chapter 1, for ACR program description, goal, objectives, language, unit of measure, unit of exchange, prohibition on forward crediting, and conflict of interest policy. This chapter provides additional guidance for forest projects.

A. Geographic Scope

ACR accepts forest projects from locations worldwide.

B. Scope: Greenhouse Gases

See *ACR Standard* for the full list of GHGs within ACR's scope. Forest carbon projects generally enhance CO₂ removals and may reduce emissions of methane (CH₄) and/or nitrous oxide (N₂O).

C. Scope: Forest Project Types

ACR accepts any forest project applying an ACR-approved methodology¹ and meeting all requirements of the *ACR Forest Carbon Project Standard* and *ACR Standard*. ACR-approved methodologies include the following.

- Methodologies developed by ACR and approved through the public consultation and external scientific peer review process;

- Approved methodologies listed at www.americancarbonregistry.org;
- Methodologies approved under the Clean Development Mechanism (CDM);
- Methodologies approved under other GHG programs, provided such methodologies have been reviewed and approved by ACR;
- Modifications of existing methodologies, provided such modifications have been reviewed and approved by ACR;
- New methodologies developed by Project Proponents and approved by ACR through the public consultation and scientific peer review process.

The following broad categories are eligible. Within each category, the GHG Project Plan will outline specific activities undertaken to reduce GHG emissions and/or enhance removals.

- *Afforestation/Reforestation (AR)*, defined as activities to increase carbon stocks by establishing, increasing and restoring vegetative cover through the planting, sowing or human-assisted natural regeneration of woody vegetation. AR activities must target the eventual establishment of "forest" per the applicable definition.

In general, the term afforestation is applied to activities to establish forest on

¹ The process for approval of methodologies is detailed in Chapters 7 and 8 of the *ACR Standard*.

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lands that have been in another land use for some relatively long period, while reforestation is applied to activities to reestablish forest on lands that were in forest cover relatively recently. ACR does not make a specific distinction between afforestation and reforestation, since both are eligible.

Project Proponents shall document that AR project lands were not cleared of trees during the 10 years preceding the project Start Date in order to implement an AR project. This exclusion does not apply to natural disturbances, nor to removal of non-tree vegetation (e.g. heavy brush) in order to prepare the site for planting.

Project lands that already meet the applicable “forest” definition due to percent tree cover or other factors, and on which a Project Proponent wishes to implement activities to increase carbon stocks by increasing and restoring vegetative cover through the planting, sowing or human-assisted natural regeneration of woody vegetation, qualify under the IFM category.

- *Improved Forest Management (IFM)*, defined as activities to reduce GHG emissions and/or enhance GHG removals, implemented on lands designated, sanctioned or approved for

forest management (i.e. production of sawtimber, pulpwood, and fuelwood). Eligible IFM project activities include, but are not limited to: conversion from conventional logging to reduced impact logging, conversion of managed forests to protected forests (“stop logging”), extending rotation lengths in managed forest, conversion of low-productive forests to high-productive forests, increasing forest productivity by thinning diseased or suppressed trees, managing competing brush and short-lived forest species, increasing the stocking of trees on understocked areas (including lands not historically managed as forest but meeting the applicable “forest” definition due to percent tree cover or other factors), increasing carbon stocks in harvested wood products, improving harvest or production efficiency, and shifting from shorter- to longer-term wood products.

- *Reducing Emissions from Deforestation and Degradation (REDD)*, defined as the reduction in GHG emissions from the avoided conversion of forest to non-forest use (e.g. to cropland, grassland, settlement, or development) or avoided degradation of forests remaining as forests. Recognized REDD project activities include avoiding planned deforestation, avoiding unplanned/illegal deforestation, avoiding conversion from

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forest to non-forest use, preventing unsanctioned forest degradation through fuelwood collection or other practices, and preventing illegal timber harvest.²

Some activities not listed above may fall under this standard: for example, avoiding conversion of a peatland or wetland, if sufficiently forested to meet the applicable forest definition, could qualify as REDD. Urban forestry activities that meet the forest definition could qualify as AR, IFM or REDD depending on the specific activity. Project Proponents uncertain about eligibility of a planned activity may consult with ACR.

D. Forest Carbon Projects with a Biomass Energy Component

Forest carbon activities may include a biomass energy component if they provide biomass fuel for electricity generation, heating, or transportation fuels. Such projects occupy a unique GHG accounting niche in that they may have impacts on GHG emissions and removals in terrestrial ecosystems as well as the ability to

² In the international context REDD is understood to include reducing emissions from deforestation, improved forest management, and avoiding degradation through illegal or unsanctioned activities. Here for clarity we include under IFM only sanctioned activities carried out on lands designated for forest management. We include under REDD: all deforestation (conversion from forest to non-forest), whether planned/sanctioned or not; and all unplanned, unsanctioned or illegal activities, whether they cause deforestation (conversion to non-forest) or degradation (forest degrades but remains as forest per applicable definition). The categories are important since different activities have different Crediting Periods, and activities where the change in baseline conditions is relatively quicker are given a shorter Crediting Period.

displace GHG emissions from fossil fuels. Projects that combine an eligible forest carbon project activity with biomass production shall account for changes in GHG reductions and removals in forest carbon pools using the *Forest Carbon Project Standard* and appropriate forestry methodologies. Displacement of fossil fuel GHG emissions, if eligible, shall be accounted using appropriate energy sector methodologies and tools.

As noted in the *ACR Standard*, ACR's scope generally excludes grid-connected renewable electricity projects in the U.S. because of the lack of unambiguous and uncontested ownership of the emission reductions, potential for double-counting of offsets and Renewable Energy Credits (RECs) in markets where regulations do not clearly specify unbundling of RECs and GHG attributes, and potential for double-counting of offsets and entity-level emissions reductions. This exclusion may not apply to forest-derived biomass projects displacing *direct* emissions from fossil fuels (e.g., co-firing biomass with coal, biogas displacing natural gas, biofuels displacing gasoline or diesel), provided such projects meet all criteria in Chapter 1 Section F of the *ACR Standard* and the potential for double-counting has been eliminated. Project Proponents wishing to claim credit for reductions in direct emissions through displacement of fossil fuels with forest-derived biomass shall confirm that the project meets all these criteria and may consult with ACR on its eligibility.

CHAPTER 2: ACCOUNTING AND DATA QUALITY PRINCIPLES

Project Proponents should refer to the *ACR Standard*, Chapter 2, for general accounting and data quality principles. Additional guidance is provided here for forest projects. In general, the basis for ACR's accounting principles is ISO 14064 Part 2.

A. Boundary Selection

GHG project boundaries include a project's geographical implementation area, the types of GHG sources and sinks considered, the carbon pools considered, and the project duration.

The Project Proponent shall select, or establish criteria and procedures for the selection of, relevant GHG sources, sinks and reservoirs for regular monitoring or estimation. The Project Proponent shall justify in the GHG Project Plan the exclusion from regular monitoring of any relevant GHG source, sink or reservoir; see Section D of this Chapter.

In accordance with ISO 14064-2:2006, the Project Proponent shall select or establish criteria, procedures and/or methodologies for quantifying GHG emissions and/or removals for selected GHG sources, sinks and/or reservoirs. The Project Proponent shall quantify GHG emissions and/or removals separately for each relevant GHG for each GHG source, sink

and/or reservoir relevant for the project and for the baseline scenario.

The GHG Project Plan shall provide a detailed description of the geographic boundary of forest project activities. The project activity may contain more than one discrete area of land, but each area shall have a unique geographical identification and shall meet the land eligibility requirements of this standard. The Project Proponent shall provide maps, GIS shapefiles, or other relevant information to delineate the project boundary.

A project may include multiple eligible activities – e.g. REDD on some areas, AR on others – provided the activity boundaries are clearly delineated and each activity meets all requirements of this standard and associated approved methodologies.

For projects aggregating multiple forest landowners, the Project Proponent shall clearly define the boundaries of each land area on which project activities are to be implemented.

B. Project Baseline Scenario

The project baseline scenario is a long-term projection of the forest management practices or activities that would occur, or the absence thereof, within the project's physical boundaries

in the absence of the project. The baseline is a counterfactual scenario³ that depicts the likely stream of emissions or removals expected to occur if the Project Proponent does not implement the project. Change in carbon stocks or emissions of GHGs over time relative to the baseline is the basis for a project's Net Emission Reductions – the difference between emissions or removals in the project scenario vs. emissions or removals in the baseline scenario, less any deductions for leakage.

Guidance on project baselines specific to AR, IFM and REDD is provided in Chapter 6.

C. Precision and the Uncertainty Deduction

Project Proponents shall achieve a precision target of $\pm 10\%$ of the mean at 90% confidence, applied to the final calculation of emission reductions/removal enhancements, in order to report without an uncertainty deduction. If the Project Proponent cannot achieve precision of $\pm 10\%$ of the mean at 90% confidence, then the reportable amount shall be the mean minus the lower bound of the 90% confidence interval, applied to the final calculation of emission reductions/removal enhancements. The precision target is applied across the project, not within particular carbon pools, strata, or landowners (in the case of an aggregated project).

³ If applied to the project area; the option also exists of monitored baselines on proxy areas.

This approach will minimize the potential that measurement uncertainty causes an overestimation of net emission reductions/removal enhancements.

ACR leaves to the Project Proponent the decision whether the potential additional revenues from reporting the mean without an uncertainty deduction justify the additional costs of more intensive sampling to achieve the precision target.

Aggregated projects shall apply these guidelines at the level of the project overall, not at the level of each individual landholding in the project. When designing initial inventory, measurement and monitoring plans, the Project Proponent (aggregator) should pursue the $\pm 10\%$ of the mean at 90% confidence precision target at the level of the aggregated project. Stratification, as well as designing projects within a single geographic region and relatively similar forest types, will help make this target achievable at reasonable sampling costs. See Chapter 7.

D. Relevance and Completeness

Project Proponents shall apply the guidance in ISO 14064 Part 2 and consider all relevant information that may affect the accounting and quantification of GHG reductions/removals, including estimating and accounting for any decreases in carbon pools and/or increases in GHG emission sources.

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Practical and cost concerns dictate that some GHG emission sources/sinks falling below an appropriate *de minimis* threshold may be excluded from ongoing measurement and monitoring. Project Proponents may omit any pool or emission source whose exclusion is conservative, i.e. the exclusion of which will tend to underestimate emission reductions/removal enhancements. If exclusion of a pool or source is not conservative, the pool or source may be excluded only if all combined pools and sources thus excluded represent less than 3% of the *ex ante* calculation of emission reductions/removal enhancements.

A pool or source not initially considered *de minimis* in *ex ante* calculations, but found to be *de minimis* in monitoring, may be omitted from subsequent monitoring and verification if the Project Proponent presents evidence that the pool or source is likely to remain indefinitely below the *de minimis* threshold (i.e., that the monitoring event in which an individual pool or source was *de minimis* was not merely a temporary condition with the pool or source likely to return to significant levels).

The following pools and sources are considered insignificant *a priori* for forest carbon projects.

Emissions sources:

- Fertilizer application
- Removal of herbaceous vegetation
- Transportation emissions from vehicles used in project visits, monitoring,

verification etc. This does not include emissions of harvest, processing, transport equipment. These emissions may be insignificant but are not insignificant *a priori*; the Proponent shall justify exclusion of such emissions.

- Collection of wood from non-renewable sources to be used for fencing of the project area
- Nitrous oxide (N₂O) emissions from decomposition of litter and fine roots from nitrogen-fixing trees

Carbon pools:

- Litter

Project Proponents may apply a significance tool⁴ to determine whether pools and sources not in the *a priori* list may be considered insignificant. Project Proponents may elect to account for a pool or source in the *a priori* list above. Sources and pools deemed significant and/or selected for accounting in the baseline scenario shall also be accounted in the project scenario.

E. Leakage

Leakage is the displacement of GHG emissions from the project's physical boundaries to locations outside of the project's boundaries as a result of the project action. Leakage includes

⁴ Such as the CDM Tool for Testing Significance of GHG Emissions in A/R CDM Project Activities, at http://cdm.unfccc.int/EB/031/eb31_repan16.pdf.

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both activity-shifting and market effects. ACR will register only those offsets from forest projects that account for leakage in the GHG Project Plan.

The specific types of leakage that must be accounted for and mitigated depend on the project type and design of the activity (e.g., IFM-extend rotations projects that increase yield of wood products are not likely to cause leakage). Specific requirements for quantification and mitigation of leakage are detailed in Chapter 6.

CHAPTER 3: ELIGIBILITY REQUIREMENTS

A. Forest Definition

Project Proponents shall use a nationally approved “forest” definition for the country where the activity occurs. For projects in the United States, Proponents shall use the U.S. definition in Annex 1, which is based on the U.S. Forest Service Forest Inventory & Analysis Program definition. For projects in Kyoto Protocol CDM countries, Proponents shall use the Kyoto Protocol definition in Annex 1, with the relevant Designated National Authority (DNA) selections for minimum land area, crown cover and tree height. If the project is in a country that has not yet designated a DNA, or whose DNA has not yet made these selections, the Proponent may propose another nationally approved forest definition.

The definition of forest shall apply in each eligible project category: i.e., AR activities must target the eventual establishment of a forest; IFM activities must be implemented in a forest remaining as forest; REDD activities must be implemented in a forest and prevent its conversion to non-forest or its degradation.

B. Eligible Land Ownership Types

ACR accepts projects on all land ownership types – private, public (municipal, county, state, federal, or other), and Tribal – provided the Project Proponent demonstrates that the land is eligible, documents clear land title and offsets title, the offsets contract is enforceable, and the project activity is additional and meets all other requirements of the *ACR Standard* and *Forest Carbon Project Standard*. Projects on public lands, like any other project, shall demonstrate that the activity is not required by regulations and meets other additionality criteria.

C. Eligibility Criteria

Table 1 details eligibility criteria for forest carbon projects, provides a definition of each criterion, and articulates ACR requirements. GHG Project Plans should address each of these criteria.⁵

⁵ A template for GHG Project Plans is available at <http://www.americancarbonregistry.org/carbon-accounting/tools-templates>.

Table 1 - Eligibility Criteria for Forest Carbon Offset Projects

Criterion	Definition	Requirement
<p>Start Date</p>	<p>The date by which the Project Proponent began the project activity on project lands.</p> <p>For AR projects, the Start Date is when the Project Proponent began planting or site preparation. For IFM, the Start Date is when the Project Proponent began to apply the land management regime to increase carbon stocks and/or reduce emissions relative to the baseline. For REDD, the Start Date is when the Project Proponent implemented the project action physically and/or legally.</p>	<p>Forest projects with a Start Date of November 1, 1997⁶ or later are eligible for registration. ACR may accept forest projects with an earlier start date on a case-by-case basis, provided the Project Proponent can document that GHG mitigation was an objective from project inception.</p> <p>The Start Date and the start of the Minimum Project Term shall be the same.</p> <p>The Start Date and the start of the first Crediting Period may be the same, or different if the Project Proponent presents an argument why it is logical and conservative for the Crediting Period (i.e. beginning of the project baseline scenario) to begin later than the Start Date.</p>
<p>Minimum Project Term</p>	<p>The minimum length of time for which a Project Proponent commits to project continuance, monitoring and verification.</p>	<p>Project Proponents shall commit to a Minimum Project Term of forty (40) years. The minimum term begins on the Start Date (not the first or last year of crediting). The rationale for the Minimum Project Term is addressed in Chapter 5.</p> <p>Note that the Minimum Project Term is a requirement of the Project Proponent, not necessarily of the landowner. ACR enters into legal agreements only with the Project Proponent. Agreements between Project Proponent and landowner may have a shorter term and/or a “buy-out” option, provided the Proponent commits to replace issued ERTs in the event of landowners opting to discontinue project activities. See</p>

⁶ The date of publication of Winrock’s *Guide to Monitoring Carbon Storage in Forestry and Agroforestry Projects* (K.G. MacDicken, Winrock International - Forest Carbon Monitoring Program, October 1997).

Criterion	Definition	Requirement
		<p>Chapters 5 and 7.</p> <p>Project Proponents and landowners may continue forest carbon activities beyond the Minimum Project Term, but ACR does not require monitoring or verification. At the end of the Minimum Project Term, if the Proponent does not renew for another Crediting Period and continue monitoring and verification, ACR conservatively assumes that the project activities have ceased and retires any remaining buffer contributions (if applicable).</p>
<p>Crediting Period</p>	<p>Crediting Period is the finite length of time for which a GHG Project Plan is valid, and during which a project can generate offsets against its baseline scenario.</p> <p>Crediting Periods are limited in order to require Project Proponents to reconfirm, at intervals appropriate to the project type, that the baseline scenario remains valid, project activity remains additional, and GHG accounting best practice is being used. This is important since once a project has demonstrated its additionality, it is not required to do so again until applying to renew the Crediting Period.</p>	<p>All AR projects, and all IFM projects except stop-logging projects, shall have a Crediting Period of twenty (20) years.</p> <p>Stop-logging IFM projects and all REDD projects shall have a Crediting Period of ten (10) years. The shorter Crediting Period for these activities is necessary due to potentially more rapid change in baseline conditions.</p> <p>A Project Proponent may apply to renew the crediting period by demonstrating additionality against then-current regulations, common practice and implementation barriers, complying with then-current ACR standards, and using ACR-approved baseline methods, emission factors, tools and methodologies in effect at the time of Crediting Period renewal. ACR does not limit the allowed number of renewals.</p> <p>Projects that are deemed to meet ACR additionality criteria are considered additional for the duration of their Crediting Period. If regulations or common practice change during the Crediting Period, this may make the project non-additional and thus ineligible for renewal, but does not affect its additionality during the current Crediting Period.</p>

Criterion	Definition	Requirement
		<p>If, before the conclusion of the Minimum Project Term, ACR cannot renew a project’s Crediting Period – e.g. because the project activity no longer passes additionality tests or a baseline cannot be demonstrated – this is not treated as an intentional reversal requiring the Proponent to replace issued ERTs. The project simply concludes without penalty, but since monitoring and verification are no longer required, the project’s remaining buffer contributions are treated per Chapter 5 Sections F and G.</p>
<p>Real</p>	<p>A real offset is the result of a project action that yields after-the-fact, quantifiable and verifiable GHG emissions reductions and/or removals.</p>	<p>GHG reductions and removals shall exist prior to issuance. ACR will not forward issue nor forward register a projected stream of future offsets.</p>
<p>Direct Emissions</p>	<p>An emission or removal is direct if it originates from sources or sinks over which the Project Proponent has control.</p>	<p>The Project Proponent is the individual or entity that undertakes, develops, and/or owns a project. The Project Proponent and forest landowner owner may be the same or different entities.</p> <p>The Project Proponent shall document that effective control exists over the GHG sources and/or sinks from which the reductions/removals originate. The Project Proponent need not own the forest lands or GHG sinks thereon, provided the Project Proponent can document that control over GHG sources and sinks, land title, and offset title is clear, unique, and uncontested.</p>
<p>Offset Title</p>	<p>Offset title is a legal term representing rights and interests in an offset, a future stream of offsets, or a project delivering offsets.</p>	<p>Project Proponent shall provide documentation and attestation of undisputed title to all offsets prior to registration, including chain of custody documentation if offsets have ever been sold in the past. Title to offsets shall be clear, unique, and uncontested.</p>

Criterion	Definition	Requirement
<p>Land Title</p>	<p>Land title is a legal term representing rights and interests in project lands.</p>	<p>For projects in the U.S., Project Proponent shall provide land ownership documentation and attestation of clear, unique, and uncontested land title. For international projects, Proponent shall provide documentation and/or attestation of land title, and ACR may require a legal review by an expert in local law.</p> <p>Land title is often held by a person or entity other than the Project Proponent. The Proponent need only document that land title (and control over GHG sources and sinks and offset title) is clear, unique, and uncontested.</p>
<p>Land Eligibility</p>	<p>Land eligibility restrictions may apply to certain types of offset projects.</p>	<p>For AR projects, Project Proponents shall provide documented evidence in the GHG Project Plan that no project areas have been cleared of trees within the ten (10) years prior to the project Start Date in order to establish an AR project; or if project lands have experienced loss of forest cover within the last ten years, this loss was caused by fire or natural disturbance. Loss of forest cover due to fire or natural disturbance does not disqualify an AR project.</p> <p>Some reforestation projects require removal of non-tree vegetation in order to prepare the site and establish trees. An example is the removal of heavy brush from areas where brush has invaded after fire and prevented or significantly slowed the return of trees due to competition, water limitations, lack of a nearby seed source or other factors. Brush removal for site preparation does not disqualify a reforestation project. Emissions from brush removal must be accounted for in the GHG Project Plan if they exceed the <i>de minimis</i> threshold.</p>

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Criterion	Definition	Requirement
Additional	GHG emission reductions/ removal enhancements are additional if they exceed those that would have occurred in the absence of the project activity and under a business-as-usual scenario.	Every project shall use <i>either</i> an ACR-approved performance standard and pass a regulatory surplus test, <i>or</i> pass a three-pronged test of additionality in which the project must: 1) exceed regulatory/legal requirements; 2) go beyond common practice; and 3) overcome at least one of three implementation barriers: institutional, financial or technical. See Chapter 4.
Permanent	Permanence refers to the longevity of an emissions reduction/removal and the risk of reversal, i.e. the risk that atmospheric benefit will not be permanent. Fire, disease, pests, and other natural disturbances may cause unintentional reversals. The decision to discontinue project activities before the Minimum Project Term is an intentional reversal.	Project Proponents shall assess general and project-specific risk factors using an ACR-approved risk assessment tool. Project Proponents shall mitigate reversal risk by contributing ERTs from the project itself to the ACR buffer pool; contributing ERTs of another type or vintage to the ACR buffer pool; providing evidence of sufficient insurance coverage with an ACR-approved insurance product to recover any future reversal; or using another ACR-approved risk mitigation mechanism. See Chapter 5.
Net of Leakage	Leakage is an increase in GHG emissions or decrease in sequestration outside the project boundaries that occurs because of the project action.	Project Proponents shall assess, account for, and mitigate certain types of leakage, as described in Chapter 6. Project Proponents shall deduct leakage that significantly reduces the GHG emissions reduction and/or removal benefit of a project.
Independently Verified	Verification is the independent assessment by a qualified and impartial third party of GHG emission reductions and removals. The outcome is a verification statement that provides an opinion on the	ACR requires third-party verification, by an ACR-approved verifier, at specified intervals in order to issue new ERTs. Verifiers must use transparent and replicable verification methods against the <i>ACR Standard</i> , relevant sector standard, and <i>ACR Verification Standard for GHG Projects</i> . ACR requires verifiers to provide a reasonable (as

Criterion	Definition	Requirement
	<p>relevance, completeness, accuracy, reliability, and transparency of the quantification data and methods.</p>	<p>opposed to limited) level of assurance that the GHG assertion is without material discrepancy. ACR’s materiality threshold is ±5%.</p> <p>At each request for issuance of new ERTs (usually annually, but may be more or less frequent at Project Proponent’s request), Project Proponents shall submit a verification statement from an approved verifier based on a desk audit.</p> <p>At least once every five years, Proponents shall submit a verification statement based on verification including a field visit to the project site and such measurements as the verifier requires in order to provide a reasonable level of assurance that the GHG assertion is without material discrepancy.</p>
<p>Community & Environmental Impacts</p>	<p>Projects have the potential to generate both positive and negative community and environmental impacts.</p>	<p>ACR requires community and environmental impacts to be net positive overall. Project Proponents shall document in the GHG Project Plan a mitigation plan for any foreseen negative community or environmental impacts, and shall disclose in their Annual Attestations any negative environmental or community impacts or claims (by community members only, not external stakeholders) of negative environmental and community impacts.</p> <p>ACR’s requirements for evaluation and mitigation of community and environmental impacts are addressed in more detail in the <i>ACR Standard</i>. ACR requires community and environmental impact assessment, and provides tools that may be used to assist in that assessment, but does not mandate a particular process or tool be used.</p>

CHAPTER 4: ADDITIONALITY

GHG reductions and removals from forest carbon projects are additional if they exceed those that would have occurred under current forestry laws and regulations, current forest industry practices, and under a business-as-usual scenario. ACR provides Project Proponents two paths to fulfill the additionality requirement: projects may *either* use an ACR-approved performance standard and show that the activity is surplus to regulations, *or* pass a three-prong additionality test as described below.

A. Start Date

ACR generally recognizes as eligible forest projects with a Start Date after November 1, 1997.⁷ If this requirement is met, ACR requires Project Proponents to demonstrate additionality but does not require any explicit documentation of GHG mitigation as an original project objective.

ACR recognizes that companies and organizations have been implementing forest carbon projects for GHG mitigation and/or in anticipation of GHG regulations since earlier than 1997. Projects with a Start Date earlier than November 1, 1997 may be approved on a case-by-case basis; Project Proponents shall provide documentation that GHG mitigation was an objective from project inception, in addition to demonstrating additionality.

B. The Three-Prong Additionality Test

For Project Proponents choosing the project-based (rather than performance standard) approach to additionality, the Proponent shall demonstrate in the GHG Project Plan that, as of the project Start Date, the project activities exceed currently effective and enforced laws and regulations, exceed common practice in the relevant geographic region and forest type, and face at least one of three implementation barriers – financial, technological, or institutional. See Table 2 and the guidance that follows.

⁷ The date of publication of *Winrock's Guide to Monitoring Carbon Storage in Forestry and Agroforestry Projects* (K.G. MacDicken, Winrock International - Forest Carbon Monitoring Program, October 1997).

Table 2 – The Three-Prong Additionality Test

Test	Key Questions
Regulatory Surplus	<p>Is there an existing law, regulation, statute, legal ruling, or other regulatory framework in effect as of the Start Date that effectively requires the forest carbon project activity and its associated GHG emissions reductions/removal enhancements?</p> <p style="text-align: center;">Yes = Fail; No = Pass</p>
Common Practice	<p>In the project’s geographic region and forest type, is there widespread deployment of activities similar to the project activity, by similar landowners, as evidenced by forest management plans or independent forestry consultant opinions?</p> <p style="text-align: center;">Yes = Fail; No = Pass</p>
<p>Implementation Barriers</p> <p style="text-align: center;"><i>Choose one (1) of the following three (3):</i></p> <p>Financial</p> <p>Technological</p> <p>Institutional</p>	<p>Does the project face capital constraints that carbon revenues can potentially address; or is carbon funding reasonably expected to incentivize the project’s implementation; or are carbon revenues a key element to maintaining the project action’s ongoing economic viability after its implementation?</p> <p style="text-align: center;">Yes = Pass; No = Fail</p> <p>Does the project face significant technological barriers such as R&D deployment risk, uncorrected market failures, lack of trained personnel and supporting infrastructure for technology implementation, or lack of knowledge on practice/activity, and are carbon market incentives a key element in overcoming these barriers?</p> <p style="text-align: center;">Yes = Pass; No = Fail</p> <p>Does this project face significant organizational, cultural, or social barriers to implementation, and are carbon market incentives a key element in overcoming these barriers?</p> <p style="text-align: center;">Yes = Pass; No = Fail</p>
<p><i>If the project passes the Regulatory Surplus and Common Practice tests, and at least one Implementation Barrier test, ACR considers the project additional.</i></p>	

ACR recommends application of an additionality tool to assist in making the three-

prong additionality demonstration. Project Proponents may use ACR’s *Tool for the*

Demonstration and Assessment of Additionality in Forest Carbon Project Activities or a similar CDM tool.⁸ The GHG Project Plan must present a credible demonstration, acceptable to ACR and the verifier, that the project passes the three-prong test.

C. Regulatory Surplus Test

To apply the regulatory surplus test, the Project Proponent shall evaluate existing laws, regulations, statutes, legal rulings, or other regulatory frameworks that directly or indirectly affect GHG emissions associated with a project action or its baseline candidates, and which require technical, performance, or management actions. National, state or local forest management/forest practice rules may require managing operations according to a certain set of criteria.

In determining whether an action is surplus to regulations, Project Proponents should not consider voluntary practices, proposed laws or regulations, optional guidelines, or general government policies. Only mandated forest management practices, not actions left to landowner discretion, shall be considered in the regulatory surplus test. Voluntary practices, if they have become established as part of a landowner's business-as-usual land management, may be considered part of the baseline scenario, but are not part of the

⁸ See for example <http://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-01-v2.pdf>.

regulatory surplus test.

Projects that are deemed to be regulatory surplus are considered surplus for the duration of their Crediting Period. If regulations change during the Crediting Period, this may make the project non-additional at the time of an application for Crediting Period renewal, but does not affect its additionality during the current Crediting Period.

D. Common Practice Test

To apply the common practice test, the Project Proponent shall evaluate the predominant forest industry technologies and practices in the project's geographic region, as determined by the degree to which those technologies or practices have been adopted in that region, regulatory framework, forest type, and by similar landowners.⁹ The Project Proponent shall demonstrate that the proposed project activity exceeds the common practice of similar landowners managing similar forests in the region.

The common practice component of the three-prong test is different from a performance standard reflecting average stocking levels or average emissions per unit of output. Proponents choosing the project-level approach to additionality and therefore the three-prong

⁹ E.g. common practice for large industrial and small non-industrial private landowners may be different. The Proponent shall demonstrate and document what is common practice for similar landowners.

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test shall provide evidence to document what is common practice forest management for similar landowners of similar forests in that region, e.g., through management plans of other landowners or alternatively the opinions of established forestry consultants.

Projects that are deemed to go beyond common practice are considered beyond common practice for the duration of their Crediting Period. If common practice adoption rates of a particular practice change during the Crediting Period, this may make the project non-additional and thus ineligible for renewal, but does not affect its additionality during the current Crediting Period.

E. Implementation Barriers Test

An implementation barrier represents any factor or consideration that would prevent the adoption of the practice/activity proposed by the Project Proponent. Generally, there are no barriers to the continuation of current activities, with the exception of regulatory or market changes that force a shift in a project activity.

Under the implementation barriers test, Project Proponents shall choose at least one of three barrier assessments: i) financial, ii) technological, and iii) institutional. Project Proponents may demonstrate that their project faces more than one implementation barrier.

- *Financial* - Financial barriers can include high costs, limited access to capital, or

an internal rate of return in the absence of carbon revenues that is lower than the Proponent's established minimum acceptable rate. Financial barriers can also include high risks such as unproven technologies or business models, poor credit rating of project partners, and project failure risk. If electing the financial implementation barrier test, Project Proponents shall provide solid quantitative evidence such as net present value (NPV) and internal rate of return (IRR) calculations, documentation such as appraisal documents, etc.

- *Technological* - Technological barriers can include R&D deployment risk, uncorrected market failures, lack of trained personnel and supporting infrastructure for technology implementation, and lack of knowledge on practice/activity.
- *Institutional* - Institutional barriers can include institutional opposition to technology implementation, limited capacity for technology implementation, lack of management consensus, aversion to upfront costs, and lack of awareness of benefits.

Project Proponents are referred to ACR's *Tool for the Demonstration and Assessment of Additionality in Forest Carbon Project Activities* for guidance in documenting implementation

barriers.

F. Performance Standard Approaches

In lieu of the three-prong test for demonstrating project-level additionality, ACR also recognizes the “performance standard” approach in which additionality is demonstrated by showing that a proposed project activity is (1) surplus to regulations, and (2) exceeds a performance standard benchmark representing the emissions and removals associated with typical forest management within the region and forest type in which the project takes place. Any project that is regulatory surplus and exceeds the performance benchmark is considered additional to what would be expected under a business-as-usual scenario.

The baseline, in a classic performance standard, is measured in terms of emissions per unit output (e.g. tCO₂e per MWh), and any activity with lower emissions per unit output than the benchmark is recognized as additional and credited for this difference. In practice, performance standards tend toward some over-crediting (crediting business-as-usual activities that happened to have lower emissions per unit output than the benchmark), balanced by under-crediting (not crediting activities that are in fact additional). The performance standard approach is highly desirable for efficiency and scalability. As the volume of projects and total emission reductions/removals increases, and provided all projects use the performance

standard, under-crediting will tend to balance over-crediting.

This standard does not attempt to delineate a performance standard for various regions and forest types, which can only realistically be done in a methodology, but offers the following guidance for methodology development and acceptance.

The regulatory surplus component of this additionality demonstration shall be the same as that described in Section C of this Chapter.

For the performance standard component ACR *will not approve*:

- Performance standards based purely on forest carbon stocks, assigning credits to projects whose carbon stocks happen to exceed a regionally defined average carbon stock, due to the significant potential for crediting business-as-usual practices without atmospheric benefit;
- Approaches that do not provide an appropriate balance of over- and under-crediting;
- Performance standards that assign credit without requiring a change in practice from the business-as-usual;
- Approaches that provide credits vs. a base year, rather than a project-level baseline or appropriate industry-level performance standard.

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ACR will approve:

- Performance standard methodologies based on rates of net sequestration and emissions, or on emissions intensity, per unit output (e.g. per unit harvested wood products), similar to performance standards in other sectors.

One acceptable approach is a performance standard that accounts for net emissions from timber removals, wood processing and net sequestration to provide a benchmark in tCO₂ per unit production for different regions and forest types. Baseline emissions derived from the performance standard factor can be compared to actual with-project emissions and sequestration, measured/modeled *ex ante* and monitored over time, to give net GHG emission reductions/removals creditable to the project activity (with appropriate deductions for leakage and risk mitigation). This approach is less subject to gaming and less prone to crediting business-as-usual practices than a stocks-based approach.

It has the added benefit of not requiring Project Proponents to forecast business-as-usual forest management into the future (since the performance standard, periodically updated, is simply applied to actual harvested volume year-by-year). Any activities that increase sequestration, decrease or delay timber removals, reduce emissions from slash, improve milling efficiency, or shift from shorter to longer-term wood products will yield lower emissions per unit output than the performance standard baseline.

ACR may publish its own and/or approve performance standard methodologies developed by others, in either case using the public consultation and scientific peer review process described in the *ACR Standard*, Chapter 8.

CHAPTER 5: PERMANENCE AND RISK MITIGATION

Permanence refers to the longevity of an emissions reduction/removal and the risk of reversal, i.e. the risk that atmospheric benefit will not be permanent. Terrestrial and geologic sequestration projects have the potential for GHG reductions and removals to be reversed when a project has exposure to risk factors, including unintentional reversals (e.g., fire, flood, insect infestation etc.) and intentional reversals (e.g., landowners choosing to discontinue project activities). Forest offsets are inherently at some risk of reversal, but this risk can be assessed and mitigated and the offsets thus made fungible with other offsets and allowances.

A. Permanence vs. Risk Mitigation and Fungibility

AFOLU carbon protocols sometimes confuse permanence with the length of time for which a Project Proponent or landowner must commit to maintain, monitor and verify the project activity. In fact, no length of time short of perpetual is truly permanent, nor is there a sound scientific basis for any arbitrary number of years. Instead, protocols make a policy decision on the length of required project maintenance, monitoring and verification, balancing atmospheric integrity with the effort to encourage widespread landowner participation. Setting too long a required project term may pose barriers to many landowners,

limiting market participation even while not providing permanence.

ACR requires Project Proponents to commit to a Minimum Project Term of 40 years for project continuance, monitoring and verification. ACR views forest and other AFOLU activities as a “bridge” strategy to achieve near-term reductions cost-effectively over the period from now through 2050 – the timeframe over which U.S. legislative frameworks and international negotiations propose effective de-carbonization of major emitting sectors, with reductions of around 80% below current GHG emissions. Requiring Project Proponents to commit to 40 years ensures these activities will continue over the relevant timeframe, or if they or their landowners choose to discontinue activities, that any credited ERTs will be replaced. Not requiring a longer Minimum Project Term, executing agreements only with the Project Proponent, and providing flexibility mechanisms for Project Proponents to design shorter landowner contracts, will incentivize participation by a broad range of landowners, ultimately leading to a greater supply of forest offsets.

While the first component of ACR’s approach focuses on balancing Minimum Project Term with landowner participation, the second component focuses on the risk assessment and mitigation measures required to make forest

offsets fully fungible with other offsets and allowances without resort to temporary credits or discounting. Assessment and mitigation of reversal risk ensures that any losses of sequestration (increases in atmospheric GHG concentrations), whether occurring through an unforeseen natural disturbance or through a Project Proponent or landowner's choice to discontinue forest carbon project activities, are quickly compensated and the atmosphere "made whole."

ACR views the accurate assessment of unintentional and intentional reversal risk, and effective and immediate mitigation of reversals such that any losses are made whole, as more effective permanence measures than Minimum Project Term alone. Only risk mitigation can make forest offsets effectively permanent and fungible.

The fungibility of forest offsets is crucial in voluntary and especially in compliance markets. To avoid being discounted relative to other offset types, forest carbon projects must fully mitigate reversal risk such that the regulated entity is not left with an uncertain liability. If the mechanism for dealing with impermanent offsets is temporary crediting or discounting, then low prices for forest offsets will translate into weaker incentives for landowners to adopt these practices and fewer of the economic and environmental co-benefits they uniquely provide.

B. Assessment of Risk

To assess the risk of reversal, Project Proponents shall conduct a risk assessment addressing both general and project-specific risk factors. General risk factors include risks such as financial failure, technical failure, management failure, rising land opportunity costs, regulatory and social instability, and natural disturbances. Project-specific risk factors vary by project type.

Project Proponents shall conduct their risk assessment using the *ACR Tool for Risk Analysis and Buffer Determination*. Only until the release of this tool, Project Proponents shall use the most updated version of the VCS Tool for AFOLU Non-Permanence Risk Analysis and Buffer Determination.¹⁰

The output of either tool is an overall risk category for the project, translating into a number of offsets that must be deposited in the ACR buffer pool to mitigate the risk of reversals (unless the Proponent elects another ACR-approved risk mitigation mechanism).

The Project Proponent shall conduct this risk assessment and propose a corresponding buffer contribution (if applicable). The risk assessment, overall risk category, and

¹⁰ See the tool at <http://www.v-c-s.org/docs/Tool%20for%20AFOLU%20Non-Permanence%20Risk%20Analysis%20and%20Buffer%20Determination.pdf> and update at <http://v-c-s.org/docs/VCS%20Program%20Update,%20AFOLU%20Risk%20Tool%20Clarification,%2013APR2010.pdf>.

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proposed buffer contribution shall be included in the GHG Project Plan. ACR evaluates the proposed overall risk category and corresponding buffer contribution (if applicable). The verifier evaluates whether the risk assessment has been conducted correctly.

If no reversals occur, the project's risk category and buffer percentage (if applicable) remain unchanged for five years. An exception is in the event of a reversal, in which case the project baseline, risk category and buffer contribution (if applicable) shall be re-assessed and re-verified immediately.

C. Mitigation of Risk via the ACR Buffer Pool

Proponents of projects with a reversal risk shall choose a risk mitigation mechanism. For Project Proponents choosing the ACR buffer pool, the Proponent contributes either a portion of the project's own offsets, or an equal number of ERTs of another type and vintage, to a buffer account held by ACR in order to replace unforeseen losses in carbon stocks. ACR has sole management and operational control over the offsets in the buffer pool. In the event of a reversal, ACR retires from the buffer an adequate number of offsets to compensate for the reversal.

The risk assessment determines the number but not the source of buffer ERTs. Proponents may contribute buffer ERTs from the project itself; or if they prefer to market all the offsets

from their project, may make the buffer contribution in ERTs of any type and vintage. Through adherence to ACR standards all ERTs are fungible, i.e. one metric ton GHG reduction or removal from any project is of equal benefit to the atmosphere as any other project. Thus a Proponent may purchase and bank ERTs from another registered project against the future risk of unintentional reversals or landowners discontinuing project activities.

ACR manages the buffer pool to mitigate reversals, whether unintentional or intentional. Buffer pool management is based on conventional insurance, in which a premium (buffer percentage) is determined based on assessed risk, and in the case of a covered event the insurance company pays damages above a deductible amount.

First unintentional reversal

For the first unintentional reversal from a project (or phase of a project, or subset of project lands in the case of aggregated projects), ACR mitigates the loss by retiring from the buffer pool the corresponding number of tons. This will require quantification of carbon stocks after the reversal, at the Project Proponent's expense, to ascertain how many tons have been lost. Fees for retirement of ERTs following a reversal will be charged to the Project Proponent at published per-ton rates.¹¹

¹¹ See www.americancarbonregistry.org.

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If the reversal is less than the Project Proponent's net buffer contributions up to that time – i.e. the Proponent's own contributions net of refunds can cover the reversal – then the buffer provides the ERTs retired to mitigate the reversal. If the reversal exceeds the Proponent's buffer contributions to date net of refunds, the Project Proponent shall pay a “deductible” of 10% of the reversal, and the buffer pool covers the remainder. The deductible may be paid using ERTs of any type and vintage.

Following the first unintentional reversal, the Proponent is not required to replenish the buffer, but the project is considered a greater risk and the assessed buffer percentage (premium) will increase. The baseline must also be re-assessed.

Subsequent unintentional reversals

For subsequent unintentional reversals in an amount less than the Proponent's cumulative net buffer contributions less refunds and retirements, the buffer again provides the ERTs retired to mitigate the reversal. However, projects with repeated small reversals will have a continually increasing risk category and required buffer percentage (high premium to insure a risky project).

If the subsequent unintentional reversal exceeds the Proponent's cumulative buffer contributions to date net of refunds and retirements – i.e. the same project has relied

more than once on the buffer contributions of other projects – ACR treats this reversal differently. The Proponent is required to cover the full extent of the reversal rather than only a deductible amount, i.e. to make the buffer whole by replenishing all those ERTs retired to compensate the reversal. The Project Proponent shall make the buffer whole before any further ERT issuance will occur. As with the original buffer contribution, this deposit may be made using ERTs of any type and vintage. Project Proponents may choose to bank ERTs and/or futures at the start of a project to hedge this risk.

Intentional reversals

ACR recognizes there are circumstances in which a Project Proponent or participating landowner, despite having initially intended to continue project activities for the Minimum Project Term or longer, will encounter changed circumstances that make it desirable to discontinue project activities. Likewise, ACR recognizes that some landowners may not be willing to commit to activities for the Minimum Project Term ACR requires of Project Proponents.

For both of these scenarios, ACR provides the flexibility of a “buy-out option” in which a Project Proponent may discontinue the project, or a participating landowner may drop out, provided the loss of carbon sequestration is fully mitigated and the atmosphere “made whole.”

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This buy-out option requires the Proponent to replace all ERTs issued up to the time the option is exercised. The mitigation responsibility in all cases rests with the Project Proponent. The Proponent may have contractual arrangements with landowner(s) to ensure the Proponent is made whole, and may consider options (banking ERTs in escrow, investing in futures, insurance products etc.) to hedge the risk of a portion of landowners choosing to discontinue project activities.

In the case of an intentional reversal by a Project Proponent (or subset of the landowners in an aggregated project), ACR conservatively considers the cumulative sequestration of that portion of the project to be lost, whether or not the Proponent or landowner actually liquidates carbon stocks. ACR retires from the buffer pool the number of ERTs issued from the start date up to the time of the intentional reversal. If only a subset of landowners in an aggregated project discontinue participation, ACR only retires ERTs issued to date for that subset of landowners.

The Project Proponent is then required to deposit the same number of ERTs, i.e. all those issued since the start date for offsets attributed to landowners that discontinued participation. As with the original buffer contribution, this deposit may be made using ERTs of any type and vintage.

If a Proponent does not replenish the buffer in a timely manner, ACR retains the right to freeze the Proponent's project account and use any existing ERTs as needed in order to compensate for the reversal. Forest carbon ERTs transferred to the buffer to compensate for an intentional reversal may be refunded to the Proponent if the Proponent replaces them with other ERTs.

Since the withdrawal of one or more landowners also changes the project baseline, in addition to retiring buffer tons the Project Proponent shall re-calculate the baseline (the method used to determine the baseline will generally remain constant) and re-verify.

Timber harvest included in the Project Plan is not considered an intentional reversal. Only the decision to discontinue forest carbon project activities, monitoring and verification is treated as an intentional reversal.

If, before the conclusion of the Minimum Project Term, ACR cannot renew a project's Crediting Period – e.g. because the project activity no longer passes additionality tests or a baseline cannot be demonstrated – this is not treated as an intentional reversal requiring the Proponent to exercise the “buy-out” option. The project simply concludes without penalty; since monitoring and verification are no longer required, the project's remaining buffer contributions are treated per Sections F and G of this Chapter.

D. Landowners Exercising Buy-Out Option but Re-enrolling Project

It is conceivable that some Project Proponents will terminate in advance of the Minimum Project Term, not in order to discontinue the project or liquidate carbon stocks, but rather re-enroll the project in another voluntary, or state or federal compliance program.

ACR provides the option, in the *ACR Standard* Chapter 10, for any project to de-list tons at published fees in order to register them with another program; and the buy-out option to discontinue project activities before the Minimum Project Term. However allowing Project Proponents an option to discontinue activities without replacing all issued ERTs, because of the Proponent's stated intent not to reverse but rather to re-enroll the project, would require ACR to track and enforce the actions of a Proponent who may no longer have any legal relationship to ACR.

ACR recognizes the need for registry flexibility and on a case-by-case basis, may discuss with Proponents options for mutual dissolution and re-enrollment of a project. At present it is not feasible to state a general policy on this issue because of the difficulty of tracking and enforcing Project Proponents' actions on leaving the registry.

E. Refund of Buffer Contribution over Time if No Reversals

Most forest projects will never experience an unintentional or intentional reversal, and thus will not require retirement of ERTs contributed to the buffer. Buffer ERTs not used to compensate for a reversal will be refunded over time to the Project Proponent, at the rate of 5% for each five-year interval with no reversal. At each five-year verification, if a project has experienced no reversals, ACR will refund 5% of the cumulative buffer contributions, net of any buffer retirements or prior refunds. This does not affect the project's buffer percentage, which is based on an assessment of general and project-specific risk factors, re-assessed every five years. It is a simple refund of buffer tons earlier deposited.

F. Treatment of Remaining Buffer at End of Project Life

Any buffer ERTs that have not been retired to compensate for a reversal, or refunded, at the end of a project's life (e.g. 40 years if the Proponent chooses not to renew crediting) will be retained and retired by ACR. Since ACR does not require monitoring and verification beyond the minimum project term, Project Proponents choosing not to renew for another Crediting Period are conservatively assumed to have discontinued project activities and thus ACR retires any remaining buffer contributions. Project Proponents who do renew crediting will continue to contribute to the buffer pool and

continue to have the buffer refunded to them if no reversals occur.

G. Option to Document Continuance and Continue Refunds

Project Proponents who elect not to renew the Crediting Period at the end of the Minimum Project Term may continue sustainable management even if they choose not to incur the cost of monitoring, verifying and registering a project. ACR thus offers Proponents the option to provide, no less frequently than every five years, ground-based photos and/or satellite imagery documenting project continuance. Proponents must provide ACR advance notice that they intend to exercise this option. No further credits will be issued, since ACR does not issue ERTs without the required attestations, monitoring and verification, but this documentation of project continuance will allow the periodic refund of buffer contributions to continue.

H. Reassessment of Risk and Buffer Contribution over Time

The assessment of general and project-specific risk factors described in Section B shall be conducted by the Project Proponent every five years, prior to the full verification including field visit by the verifier, in order to assess whether risk has remained the same, increased, or decreased. The Proponent should use the *ACR Tool for Risk Analysis and Buffer Determination* to assess general and project-specific risk

factors, derive an overall risk category, and propose a buffer contribution (if applicable).

Over time as a project continues and is periodically monitored and verified, the Project Proponent may demonstrate that overall risk has decreased, and decrease its contribution to the ACR buffer pool. If in addition the project experiences no actual reversals, the Proponent will receive periodic buffer refunds per Section E. Thus a project with no reversals and declining risk will receive both refunds and a declining buffer contribution (if applicable).

I. Alternate Risk Mitigation Mechanisms

In lieu of making a buffer contribution in project ERTs or purchased ERTs of other type or vintage, Project Proponents may propose an insurance product for ACR approval as an alternate risk mitigation mechanism. Insurance may be a financial product based on an actuarial analysis of project risk, considering the region, forest type, threats, mitigating factors etc., similar to the assessment done for property insurance or timber insurance.

The Project Proponent may provide insurance, bonds, letters of credit or other financial assurances to ACR in amounts, and in form and substance, satisfactory to ACR in ACR's sole and absolute discretion. Such financial assurances must be sufficient to provide ACR with sufficient funds, in the event a forest carbon project suffers an unintentional or

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intentional reversal of sequestered carbon during the Minimum Project Term, to purchase and retire a number of ERTs sufficient to offset such reversal. There may be no hidden costs, exclusions, or unanticipated liabilities to ACR. ACR must approve the proposed alternative following due diligence by ACR at the Project Proponent's or insurance provider's expense.

ACR may approve additional alternate risk mitigation mechanisms in the future. Once approved, these mechanisms may be used in lieu of buffer contributions or insurance.

CHAPTER 6: BASELINES AND LEAKAGE

This Chapter provides guidance on baselines and leakage for the three broad categories of eligible forest carbon project activities.

A. Baselines: AR

The AR baseline scenario is the carbon stock present shortly prior to site preparation, or the most likely carbon stock in the absence of project implementation. If trees are present within the project boundary at the project start, Project Proponents may only count sequestration in pre-existing trees as offsets if growth of the trees is also projected in the baseline. If the Project Proponent does not intend to project growth of pre-existing trees in the baseline scenario, they should be excluded from the project boundary.

If re-growth of forest cover is occurring or is likely to occur absent the project action, but the project action (planting, seeding and/or the human-induced promotion of natural regeneration) accelerates the return to forest, then Project Proponents should include the natural re-growth rates in the baseline scenario.

Project Proponents must quantify any removals using forest management project accounting methods. Removals of live and dead biomass as part of site preparation should be included if these exceed the *de minimis* threshold.

B. Baselines: IFM

The IFM baseline scenario shall quantify and justify harvest and forest growth in the absence of a carbon project.

For project-specific baselines, Project Proponents shall determine the baseline scenario by identifying credible alternative forest management scenarios to the proposed project activity, including historical and common practice forest management in the region, using the approach in an approved methodology.

Performance standard baseline approaches are allowed but shall not be based on a single carbon stock by region or region/forest type. Performance standards must provide evidence of real atmospheric benefit, and that application will lead to minimal over-crediting of project activities. Performance standards must also provide evidence of a change in management to decrease emissions and/or enhance sequestration. Credit cannot be given for a particular landowner simply having higher carbon stocks than the performance standard baseline for that region, or than a base year. Performance standards based on net sequestration and emissions, or emission intensity per unit output, are encouraged (see Chapter 4).

For decomposition of logging slash, stumps, and roots in the baseline scenario, Project Proponents may for simplicity assume these pools to be immediately emitted following harvest or loss of aboveground standing biomass. This approach is conservative and greatly simplifies accounting. Alternately, Project Proponents may calculate a rate of decomposition of logging slash, stumps and roots and account for these pools over time. The latter approach is more challenging but provided it can be justified to ACR and the verifier, will be accepted.

Wood products must be accounted for in an IFM baseline scenario, as excluding these would tend to exaggerate emissions in the baseline and thus over-estimate reductions. While it is possible to track annual emissions through retirement, burning and decomposition, ACR accepts the simpler approach of considering all stocks still in use or landfilled after 100 years to be permanently sequestered, with the balance considered as an immediate emission.¹²

¹² For forest projects in the U.S., see for example the Forestry Appendix of the Technical Guidelines for the US Department of Energy's Section 1605(b) Voluntary Reporting of Greenhouse Gases Program. (<http://www.eia.doe.gov/oiaf/1605/Forestryappendix11.pdf>; also available as a US Forest Service General Technical Report at http://www.fs.fed.us/ne/durham/4104/papers/ne_gtr34_3.pdf). Table 1.6 provides, for different regions and timber types, proportions of extracted timber still in use or sequestered in a landfill 100 years after production. An analogous approach applicable globally is in Winjum,

C. Baselines: REDD

A differentiation exists for REDD projects between planned legally sanctioned deforestation and illegal unsanctioned deforestation. Baseline scenarios for planned deforestation and U.S. avoided conversion of forest to non-forest can be directly calculated, while unplanned deforestation must be modeled.

Avoiding deforestation displaces some use of the forest, often clearing of land for market or subsistence agriculture, or for developed uses such as buildings and roads. Therefore activity-shifting leakage must always be considered for REDD projects. Typically, deforestation is not the result of removal of wood for wood products, but it is possible for timber harvest to facilitate deforestation or forest degradation. Utilization of wood products may be ancillary to deforestation, however if timber products would have been produced as a result of deforestation, market effects leakage must be considered.

For unplanned deforestation, to determine the appropriate scale for setting a baseline, Project Proponents shall consider the cause of deforestation that the project will address, then consider the geographic range over which that activity is occurring. The goal is to determine potential leakage emissions from deforestation

J.K., Brown, S. and Schlamadinger, B. 1998. Forest harvests and wood products: sources and sinks of atmospheric carbon dioxide. *Forest Science* 44: 272-284.

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that have occurred across the entire area in which the project might have an effect.

For planned deforestation and avoided conversion of forest to non-forest, Project Proponents shall consider the probability of conversion as well as the carbon stock of the post-deforestation/conversion land use. The baseline agent of deforestation/conversion (or at a minimum a class of agent) must be identified, and the methodology must address activity-shifting leakage emissions.

D. Leakage: AR

If an AR project displaces people or activities, the Project Proponent shall survey a sample of displaced people and their activities, or use other appropriate means to determine whether activities have been shifted to new locations in ways that displace emissions. The Project Proponent shall apply to the project the observed rate of displacement of emissions. If the project displaces people, and the Project Proponent does not complete a survey, ACR assumes that displaced people are continuing their pre-project activities on other forested locations. The geographic scope of AR activity-shifting leakage assessment should be constrained to the area in which the AR activity can reasonably be expected to have displaced people or activities.

ACR does not generally require accounting of market effects leakage for AR projects. If AR project activities cause a decrease in supply of

emitting goods, given uncertainty about the accuracy of econometric modeling, ACR does not apply modeled market leakage rates. If there are multiple, peer-reviewed studies on market leakage rates that establish certainty within the industry and demonstrate that leakage likely exceeds the *de minimis* threshold, ACR may approve a methodology and adopt those leakage rates as part of a future iteration of this standard.

If AR project activities cause an increase in supply of emitting goods, ACR does not require Project Proponents to assess market leakage.

E. Leakage: IFM

If an IFM project, over a Crediting Period, results in constant or increasing yield of wood products, the project is not reducing the supply of goods produced from project lands. Even if there is some shifting of production in time, and some change in the types of products produced, ACR does not require Project Proponents to assign leakage to IFM projects that maintain or increase wood production.

If an IFM project decreases harvesting beyond the *de minimis* threshold, then the Project Proponent shall quantify the leakage. If an IFM project reduces production of wood products beyond the *de minimis* threshold, averaged over the minimum life of the project, the Project Proponent must apply to the project leakage provisions for reduced timber production in the project area. Project Proponents are referred to

ACR-approved IFM methodologies or the VCS *Tool for AFOLU Methodological Issues* for assessing and deducting IFM leakage when timber production is decreased.¹³

F. Leakage: REDD

To establish and quantify activity-shifting leakage for REDD projects avoiding unplanned deforestation, the Project Proponent shall first establish the cause of the conversion to non-forest use. Second, the Proponent shall determine the scale at which displacement is likely to occur. For subsistence use, the range of likely displacement might be only a few miles or few tens of miles. If the likely agents of deforestation can be identified, their future activities can be directly monitored; otherwise a leakage zone shall be identified and deforestation and degradation in this zone shall be monitored relative to a baseline.

For planned deforestation and avoided conversion of forest to non-forest, either the baseline deforestation agent (or the class of agent) shall be monitored to determine activity-shifting leakage, or default leakage deduction rates shall be proposed, justified and approved. Where there is no reduction in the number of housing units developed or no reduction in the future crop of livestock production, then it will be possible to justify no activity-shifting leakage.

For market effects, a Project Proponent may elect to replace production of market goods to a location suitable for production. If a project does not replace the entire displaced supply, a leakage deduction shall be calculated. Given uncertainty about the accuracy of econometric modeling, ACR only requires calculation of market effects leakage deductions for timber products at this time; however all potential forms of market effects leakage must be discussed in the GHG Project Plan.

¹³ See <http://v-c-s.org/docs/Tool%20for%20AFOLU%20Methodological%20Issues.pdf>, Step 5 and Table 2.

CHAPTER 7: GUIDELINES FOR AGGREGATED PROJECTS

For smaller forest landowners, aggregation – the pooling of activities on more than one landholding into a single project – can play an important role in providing transaction cost efficiencies and diversifying risk. ACR does not require aggregation or discourage any landowner from bringing a project to ACR directly, but recognizing the increasing prevalence of aggregated projects, provides these guidelines to Project Proponents aggregating multiple landowners.

A. Minimum Term and Risk Mitigation

ACR's requirements for Minimum Project Term and options for mitigating reversal risk are provided in Chapter 5. For the reasons explained there, ACR requires of the Project Proponent a Minimum Project Term of 40 years for project continuance, monitoring and verification. Most forest landowners are committed to long-term sustainable management and some are willing to commit to a forest carbon project for 40 years or longer. However, ACR recognizes that this commitment poses a barrier for some and aims to incentivize the participation of all landowners. ACR only requires the Project Proponent to commit to the Minimum Project Term, and allows Project Proponents to dictate the term and all other aspects of their agreements with landowners.

Contractual agreements between Project Proponents and landowners will be reviewed by ACR to assess the risk of reversal, but ACR does not require a specific term or execute agreements directly with landowners.

Project Proponents generally have greater resources and ability to diversify risk across a portfolio of projects than individual small landowners. Proponents may choose to execute shorter agreements with landowners; landowners will presumably renew these agreements if carbon revenues and other benefits exceed costs, but if an individual landowner chooses to discontinue participation, there is no disadvantage in terms of atmospheric GHG concentrations as long as the Proponent has put in place mechanisms to mitigate the reversal by replacing issued ERTs. Proponents may do this using banked ERTs, from the project or any other type or vintage, or through futures, financial insurance or other mechanisms. Diversification of risk across a group of participating landowners, and the likelihood that most landowners will renew rather than discontinue participation at the end of a contract term, makes this a relatively manageable risk for the Proponent.

B. Risk Assessment

The Project Proponent shall assess general and project-specific risk factors for an aggregated project as for any other forest project. The risk of unintentional reversals may be lower for aggregated projects, since risk is diversified across a group of geographically dispersed landowners. The risk of intentional reversals could also be lower; in a large aggregated project, the probability is great that at least one landowner will choose to discontinue participation, but this probability is spread across multiple landowners and a large number of acres so that the probability of intentional reversals significantly affecting the project as a whole is lower.

The Project Proponent may present an argument in the GHG Project Plan regarding diversification of risk and the effect this has on the project's overall risk category and therefore buffer contribution (if applicable).

C. Initial Inventory

Forest offsets in an aggregated project must be quantified with equal accuracy and precision to non-aggregated projects in order not to be discounted. This can be challenging for small landowners because of the significant up-front cost of an inventory.

As noted in Chapter 2, ACR requires a 90% statistical confidence interval of sampling of no more than $\pm 10\%$ of the mean. If the Project

Proponent cannot meet the targeted $\pm 10\%$ of the mean at 90% confidence, then the reportable amount shall be the mean minus the lower bound of the 90% confidence interval, applied to the final calculation of emission reductions/removal enhancements.

For aggregated projects, the $\pm 10\%$ at 90% confidence precision target is applied at the level of the project overall. Project Proponents may use stratification to reduce inventory sampling intensity and cost to achieve this target. ACR advises Proponents to design projects within a single geographic region and relatively similar forest types, which combined with careful stratification as an initial inventory design step will help make the $\pm 10\%$ at 90% confidence target achievable at reasonable costs spread across the overall project.

ACR does not require any minimum number of inventory plots per participating landholding as long as the target is achieved for the project overall. ACR does not require individual landowner baseline inventories, as long as the Proponent has a stratified inventory meeting ACR requirements for the (aggregated) project overall. Arrangements with individual landowners, regarding inventories, entry and exit, crediting, buffer contributions and other factors are left to the discretion of the Project Proponent.

D. Monitoring

Another significant factor for smaller landowners is the costs of monitoring and verification over time. As above with initial inventories, standards for monitoring and verification are applied at the level of the overall project whether this is a single large landholding or an aggregated group of smaller landholdings.

In the case of periodic monitoring, Proponents of aggregated projects shall design a stratification and sampling plan to achieve the $\pm 10\%$ at 90% confidence precision target at the level of the overall project. ACR does not require any minimum number of monitoring plots per participating landholding as long as the target is achieved for the project overall. Proponents may alternately report the mean minus the lower bound of the 90% confidence interval, if the incremental costs of achieving the target exceed expected incremental revenues. ACR leaves to the Proponent the decision whether the cost of additional sampling in order to achieve the $\pm 10\%$ at 90% confidence precision target is justified in order to be able to report the mean rather than lower bound.

The required interval of monitoring is no less often than every five years, preceding the required full verification that occurs at five-year intervals.

E. Verification

For verification, ACR's general requirements are a reasonable (as opposed to limited) level of assurance, materiality threshold of $\pm 5\%$ in the GHG assertion, a desk-based audit annually (or at each request for issuance of new ERTs, if different from annually), and full verification including field visit no less often than every five years. ACR's verification requirements are closely modeled on ISO 14064-3 and are detailed in the *ACR Standard* and *ACR Verification Standard for GHG Projects*.¹⁴

The field visit every five years should include such measurements as the verifier requires to provide a reasonable level of assurance that the GHG assertion is without material discrepancy. ACR expects the verifier to conduct a risk-based assessment of the probability the verified GHG reductions/removals are materially different from those reported by the Project Proponent. For aggregated landholdings, the verifier may conduct an initial random sample to detect whether more intensive sampling is required to verify the GHG assertion at the ACR materiality threshold. The verifier may randomly select a subset of the project for field verification, then visit additional properties to further investigate any discrepancies discovered in the initial selection. ACR does not require the verifier to visit every landholding or to conduct any

¹⁴ Available at www.americancarbonregistry.org.

minimum number of measurements, provided the verifier can provide a reasonable level of assurance that the GHG assertion for the aggregated project is without material discrepancy.

F. Programmatic Project Development Approach

Related to but distinct from aggregation is the concept of a programmatic approach to project development. While an aggregated project may include a variety of lands but all with the same overall baseline and Start Date, a programmatic approach adds the further nuance of incrementally adding lands into the project over time. This is important for flexibility but makes project design, baseline definition, Start Date, Crediting Period, monitoring and verification more complex.

A programmatic aggregated project is treated as a single project with an overall baseline and monitoring/verification plan. The methodology for such projects shall establish applicability conditions and procedures for the addition of new lands to the program, so that it does not become necessary to re-define the baseline each time a new landholding is added. Individual landholdings within the programmatic project may have different Start Dates, but this means there could be multiple baseline durations and Crediting Periods within the project, requiring the Proponent to design a clear plan and schedule for project accounting, monitoring and verification. Practical and cost considerations may dictate that each project be limited to a single geographic region and relatively similar forest types, and that new lands be added at the required verification interval every five years.

CHAPTER 8: MONITORING, VERIFICATION AND CONTRACTUAL REQUIREMENTS

Once a project's GHG Project Plan has been certified by ACR as meeting all applicable requirements, the project has been verified, and ACR has accepted the verification statement, ACR will register the project and begin issuing ERTs.¹⁵ Subsequently, issuance of new ERTs is generally on an annual basis, though may be more or less frequent at the Project Proponent's request, and continues for the duration of the applicable Crediting Period provided each of the following requirements is met.

A. Annual Attestation

Each year, the Project Proponent shall submit a signed Attestation that:

- Confirms the continuance of project activities;
- Confirms that ownership remains clear and uncontested;
- Discloses any negative environmental or community impacts or claims of negative environmental and community impacts, and documents plans to mitigate any reported negative

environmental or community impacts;

- Addresses any significant change in external conditions that would affect the quality or environmental integrity of the project.

ACR conducts a desktop review of the Attestation and if there are no issues or questions, ACR will re-certify the project as eligible and continue listing the project as registered. ACR requires both an Annual Attestation addressing the above issues, and third-party verification (either desk-based per section B below or field-based per section C, as the case may be) in order to issue new ERTs.

B. Desk-based Verification on Request for New Issuance

At each interval that the Project Proponent requests issuance of new ERTs – typically annually, but may be more or less frequent – the Project Proponent shall submit a verification statement that is the product of a desk-based audit by an ACR-approved verifier. The desk-based audit may use satellite or other aerial imagery, or other means acceptable to the verifier, to verify project continuance and boundaries. Verifiers are not required to use satellite or aerial imagery and may accept the landowner's attestation of project continuance for the annual desk audits between field visits.

¹⁵ There is an optional early registration, at the Proponent's discretion, after certification of the GHG Project Plan. If the Proponent chooses to exercise this option, ACR will list the project as "pending verification and issuance" and post such project documentation as the Proponent desires. No ERTs are issued until after verification.

C. Full Verification Every Five Years

ACR requires for all forest carbon projects a full verification, including a field visit to the project site, no less frequently than every five (5) years. The Project Proponent shall engage an ACR-approved third-party verifier to conduct this verification.

The scope of this verification should include such carbon stock measurements as the verifier requires in order to provide a reasonable level of assurance that the GHG assertion is without material discrepancy (per ACR's materiality threshold of $\pm 5\%$). It should also include an updated assessment of the risk of reversal and an updated buffer contribution (if applicable).

Contingent upon Annual Attestations and desk-based audits, projects continue to be credited until the end of the fifth calendar year following the year in which the field verification is performed. For example, if there is a measurement event in June 2010, a calculation of carbon stocks in August 2010 and an initial verification in September 2010, ACR will continue crediting through the end of December 2015, provided the Project Proponent supplies its Annual Attestations and desk-based verification statements at the required intervals.

The full verification with updated risk assessment also offers Project Proponents the opportunity to demonstrate that the risk of reversal has decreased and thus decrease its

contribution to the ACR buffer pool, as described in Chapter 5.

D. Application for Renewal of Crediting Period

A project's Crediting Period is the finite length of time for which all components of the GHG Project Plan are considered valid, and during which a project can generate offsets against its baseline scenario. The approved crediting period for AR projects, and all IFM projects except stop-logging, is 20 years. The approved crediting period for IFM stop-logging and all REDD projects is 10 years.

A Project Proponent may apply to renew the Crediting Period by:

- Re-submitting the GHG Project Plan in compliance with then-current ACR standards and criteria;
- Re-evaluating of the project baseline;
- Demonstrating additionality against then-current regulations, common practice and implementation barriers;
- Using ACR-approved baseline methods, emission factors, tools and methodologies in effect at the time of crediting period renewal;
- Undergoing verification by an ACR-approved verifier.

ACR does not limit the allowed number of renewals, since at each Crediting Period renewal the Project Proponent must

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demonstrate that the Project is additional and meets all ACR requirements.

A positive verification statement is necessary in order for ACR to renew the Crediting Period and continue issuing offsets generated by the project.

If, before the conclusion of the Minimum Project Term, ACR cannot renew a project's Crediting Period – e.g. because the project activity no longer passes additionality tests or a baseline cannot be demonstrated – this is not treated as an intentional reversal requiring the Proponent to exercise the “buy-out” option per Chapter 5 Section C. The project concludes without penalty; since monitoring and verification are no longer required, the project's remaining buffer contributions are treated per Chapter 5 Sections F and G.

E. Legal Arrangements between ACR, Project Proponent and Landowners

The ACR member agreement¹⁶ is the governing legal document detailing rights and responsibilities of ACR and its members (including Project Proponents). In addition, for forest Project Proponents electing the buffer pool for risk mitigation, ACR and the Proponent will enter into an agreement regarding the required buffer contribution, ACR responsibilities to retire buffer tons, Proponent responsibilities, and the treatment of

unintentional and intentional reversals per Chapter 5.

ACR does not enter into any contract or agreement with landowner(s), except in the case where the landowner and Project Proponent are the same. Project Proponents execute their own agreements with landowners addressing rights and responsibilities, offset title, contract term, recourse in case of reversals, and responsibilities of landowners to the Proponent should they choose to discontinue project activities.

Agreements between Project Proponent and landowner that “run with the land” and are recorded, including easements or other legal restrictions, may be deemed a lower reversal risk and require an accordingly smaller buffer contribution. However ACR does not prescribe a particular mechanism such as an easement or other legal restriction but leaves this decision to the Project Proponent and landowners.

For projects outside the United States, Project Proponents shall submit for ACR's review a sample landowner agreement, translated into the operating language of the ACR. ACR may require a legal review of the agreement from an expert in the host country's laws regarding validity and enforceability.

¹⁶ Available on request.

CHAPTER 9: ACCEPTED METHODOLOGIES AND TOOLS

ACR recommends use of ACR's own published methodologies and tools where available. However, to provide flexibility to Project Proponents, ACR may accept methodologies and tools approved by other GHG emission systems as described below to the extent that their normative reference is ISO 14064, Parts 2 and 3, they are industry best practice, and they are approved by the relevant GHG emission system. Any Project Proponent proposing to use an ACR-approved methodology from another GHG emission system must comply with the *ACR Standard* and any relevant ACR sector standard. In the case of conflicts between the methodology and an ACR standard, the ACR standard shall govern.

A. GHG Measurement Tools and Methodologies

ACR accepts methodologies and tools approved for use by the Clean Development Mechanism (CDM). ACR may accept methodologies approved under other GHG programs, with prior review and approval by ACR. Project Proponents may also propose modifications to existing methodologies and tools. A list of approved methodologies is at www.americancarbonregistry.org.

New methodologies and substantive methodology modifications, whether proposed

by Project Proponents or published by ACR, always undergo both public consultation and scientific peer review prior to approval.

If a Project Proponent wishes to apply an existing methodology not included on the list at www.americancarbonregistry.org, the Proponent should submit the methodology for review by ACR's methodology review committee, at currently published fees.¹⁷ The committee will assess the methodology and determine whether it is approved for use without modifications, approved contingent on certain modifications, or not approved. Minor methodology modifications (deviations) may be approved internally by ACR; substantive modifications (methodology revisions) will require ACR's public consultation and peer review process.

Links to selected methodologies are below.

- CDM methodologies:
<http://cdm.unfccc.int/methodologies/index.html>

¹⁷ ACR's fee schedule is posted at www.americancarbonregistry.org. These fees are designed as the minimum necessary to recover ACR's costs of operating the registry and accepting new methodologies and projects. Meanwhile transaction and issuance fees are significantly lower than those of most other registries. ACR is a nonprofit organization and as such all fees (fixed and per-ERT) only recover costs and do not generate profit for ACR.

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- EPA Climate Leaders cross-sector guidance and sector-specific guidance: <http://www.epa.gov/stateply/resources/index.html>
- EPA Climate Leaders offset project methodologies: <http://www.epa.gov/stateply/resources/optional-module.html>.
- VCS methodologies: <http://v-c-s.org/methodologies.html>.

Table 3 provides links to some methodologies and tools Project Proponents may find useful for forest carbon projects. This is not an exhaustive list of those ACR recommends or approves. Proponents wishing to apply a methodology or tool not included in this table or the approved list should consult ACR.

Table 3 – Recommended Tools, Methodologies, and Factors

CDM – All baseline and monitoring tools and methodologies (projects)	http://cdm.unfccc.int/methodologies/PAmethodologies/approved.html
CDM – Afforestation and reforestation tools and methodologies (projects)	http://cdm.unfccc.int/methodologies/ARmethodologies/approved_ar.html
CDM – GHG sources and sinks significance test	http://cdm.unfccc.int/EB/031/eb31_repan16.pdf
CDM – <i>Tool for the Demonstration and Assessment of Additionality</i> (version 04) (projects)	http://cdm.unfccc.int/EB/036/eb36_repan13.pdf
IPCC – <i>Guidelines</i> (2006) for ex-ante determination and quantification of the baseline and project scenario, including leakage assessment (projects)	www.ipcc-nggip.iges.or.jp/public/2006gl/vol4.htm
IPCC – <i>Fourth Assessment Report</i> (2007) global warming potential factors (projects and inventories)	http://ipcc-wg1.ucar.edu/wg1/Report/AR4WG1_Print_Ch02.pdf
VCS – <i>Tool for Non-permanence Risk Analysis and Buffer Determination</i> (2008) (for use only until release of <i>ACR Tool for Risk Analysis and Buffer Determination</i>)	http://www.v-c-s.org/docs/Tool%20for%20AFOLU%20Non-Permanence%20Risk%20Analysis%20and%20Buffer%20Determination.pdf
VCS – <i>Tool for AFOLU Methodological Issues</i> (particularly Step 5, leakage guidance)	http://v-c-s.org/docs/Tool%20for%20AFOLU%20Methodological%20Issues.pdf

B. Review Process for GHG Methodologies and Tools

See *ACR Standard*, Chapters 7 and 8.

C. Methodologies and Tools for Community and Environmental Impact Assessment

See *ACR Standard*, Chapter 7.

REFERENCES

Clean Development Mechanism (CDM) – List of Accepted Tools and Methodologies.

<http://cdm.unfccc.int/methodologies/PAmethodologies/approved.html>

Good Practice Guidance for Land Use, Land-Use Change, and Forestry (especially Chapter 4.3 on LULUCF projects). IPCC.

http://www.ipcc-nggip.iges.or.jp/public/gpplulucf/gpplulucf_contents.htm.

International Standards Organization (ISO) 14064-2:2006(E) - Greenhouse gases — Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements.

International Standards Organization (ISO) 14064-3:2006(E) - Greenhouse gases — Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions.

International Standards Organization (ISO) 14065:2007(E) - Greenhouse gases — Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition.

Intergovernmental Panel on Climate Change (IPCC) 2007. Fourth Assessment Report.

http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf

Intergovernmental Panel on Climate Change (IPCC), 2006. *Guidelines for National Greenhouse Gas Inventories Volume 4 Agriculture, Forestry and Other Land Use*.

<http://www.ipccnggip.iges.or.jp/public/2006gl/vol4.html>.

Pearson, T., S. Walker and S. Brown. 2006. *Afforestation and Reforestation under the Clean Development Mechanism: Project Formulation Manual*. ITTO and Winrock International.

<http://www.winrock.org/ecosystems/tools.asp?BU=9086>

United States Environmental Protection Agency (USEPA), Climate Leaders Program, GHG Inventory Protocol (May 2005).

<http://www.epa.gov/climateleaders/resources/inventory-guidance.html>

Voluntary Carbon Standard (VCS), Voluntary Carbon Standard – Guidance for forestry, agriculture and other land use projects (18 November 2008). <http://www.v-c-s.org/docs/Guidance%20for%20AFOLU%20Projects.pdf>

Voluntary Carbon Standard (VCS), Voluntary Carbon Standard – Tool for AFOLU Non-Permanence Risk Analysis and Buffer Determination (18 November 2008).

<http://www.v-c-s.org/docs/Tool%20for%20AFOLU%20Non-Permanence%20Risk%20Analysis%20and%20Buffer%20Determination.pdf>

Voluntary Carbon Standard (VCS), Voluntary Carbon Standard – Tool for AFOLU Methodological Issues (18 November 2008).

<http://www.v-c-s.org/docs/Tool%20for%20AFOLU%20Methodological%20Issues.pdf>

Voluntary Carbon Standard (VCS), Voluntary Carbon Standard 2007.1- Specification for the project-level quantification, monitoring and reporting as well as validation and verification of greenhouse gas emission reductions or removals (November 2008). http://www.v-c-s.org/docs/Voluntary%20Carbon%20Standard%202007_1.pdf

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World Resources Institute and World Business Council for Sustainable Development (WRI/WBCSD), Greenhouse Gas Protocol Initiative. The GHG Protocol for Project Accounting (November 2005).
http://www.ghgprotocol.org/files/ghg_project_protocol.pdf.

World Resources Institute and World Business Council for Sustainable Development. The Land Use, Land-Use Change, and Forestry (LULUCF) Guidance for GHG Project Accounting (LULUCF Guidance).
<http://www.ghgprotocol.org/files/lulucf-final.pdf>

ANNEX 1: DEFINITIONS

Additionality

GHG emission reductions and removal enhancements are additional if they exceed those that would have occurred in the absence of the project activity and under a business-as-usual scenario. ACR requires that every project *either* use an approved performance standard and pass a regulatory surplus test, *or* pass a three-pronged test to demonstrate that the project activity is beyond regulatory requirements, beyond common practice, and faces at least one of three implementation barriers.

Aggregation

The pooling of activities on more than one landholding into a single project for project design, baseline definition, inventory, monitoring and verification, and registration purposes. Aggregation may provide transaction cost efficiencies and risk diversification.

Afforestation/Reforestation (AR)

Activities to increase carbon stocks by establishing, increasing and restoring vegetative cover through the planting, sowing or human-assisted natural regeneration of woody vegetation. AR activities must target the eventual establishment of “forest” per the applicable definition. In general, the term afforestation is applied to activities to establish forest on lands that have been in another land use for some relatively long period, while reforestation is applied to activities to reestablish forest on lands that were in forest cover relatively recently. ACR does not make a

specific distinction between afforestation and reforestation, since both are eligible. Project Proponents shall document that AR project lands were not cleared of trees during the 10 years preceding the project Start Date in order to implement an AR project. This exclusion does not apply to natural disturbances, nor to removal of non-tree vegetation (e.g. heavy brush) in order to prepare the site for planting. Project lands that already meet the applicable “forest” definition due to percent tree cover or other factors, and on which a Project Proponent wishes to implement activities to increase carbon stocks by increasing and restoring vegetative cover through the planting, sowing or human-assisted natural regeneration of woody vegetation, qualify under the IFM category.

Agriculture, Forestry and Other Land Use (AFOLU)

A broad category of ACR-eligible project activities that reduce GHG emissions and/or enhance GHG removals through changes in agriculture, forestry and land-use practices.

American Carbon Registry® (ACR)

The American Carbon Registry® (ACR) is a voluntary, online greenhouse gas registration and emissions trading system used by ACR members to transparently register verified emissions reductions and removals as serialized offsets; record the purchase, sale, banking and retirement of tradable offsets, branded as Emission Reduction Tons (ERTs); and optionally report, in a separate account, verified GHG inventories. ACR is an enterprise

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of Winrock International, a U.S. nonprofit organization.

ACR-Approved Methodology

ACR-approved methodologies include those published by ACR after public consultation and scientific peer review; methodologies in the approved list at www.americancarbonregistry.org; approved CDM methodologies; methodologies approved under other GHG programs, provided they have been reviewed and approved by ACR; modifications of existing methodologies, provided they have been reviewed and approved by ACR; and new methodologies submitted to ACR and approved via ACR's public consultation and scientific peer review process.

Annual Attestation Statement

The statement that a Project Proponent provides annually to ACR relating to the continuance, ownership, and community and environmental impacts of a project. The Attestation is required in order to continue crediting.

Avoided Conversion

Avoided conversion (from forest to non-forest use) refers to activities that prevent the conversion of forests to development, agriculture or other land uses. ACR considers avoided conversion a type of REDD.

Baseline Scenario

The project baseline is a counterfactual scenario¹⁸ that forecasts the likely stream of emissions or removals to occur if the Project Proponent does not implement the project, i.e., the "business as usual" case. It also reflects the sum of the changes in carbon stocks (and where significant, N₂O and CH₄ emissions) in the carbon pools within the project boundary that would occur in the absence of the project activity.

Biological Emissions

GHG emissions released from forest biomass, both live and dead, and forest soil.

Biological Sequestration

The process of increasing the carbon stock of terrestrial carbon pools by changing the management of forests, rangelands, agricultural lands, and wetlands, resulting in increased removals of CO₂ from the atmosphere and sequestration of carbon through biological processes.

Buffer Pool

ACR risk mitigation mechanism whereby the Project Proponent contributes an adequate number of ERTs to a buffer pool held by ACR to replace unforeseen losses in carbon stocks. The buffer contribution is a percentage of the project's reported offsets, determined through a project-specific assessment of the risk of reversal. Buffer contributions may come from the project itself, or be made using ERTs of any other type and vintage.

¹⁸ If applied to the project area; the option also exists of monitored baselines on proxy areas.

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Carbon Dioxide

Carbon dioxide (CO₂) is a chemical compound comprising two oxygen atoms bonded to a single carbon atom, and is the primary greenhouse gas implicated in global warming.

Carbon Dioxide-equivalent (CO₂e)

Carbon dioxide equivalence (CO₂e) is a metric to compare GHGs based on their global warming potential (GWP) relative to CO₂ over the same timeframe. The Intergovernmental Panel on Climate Change publishes GWP values for converting all GHGs to a CO₂e basis.¹⁹

Carbon Offset

In a voluntary market context, a carbon offset is a reduction, removal, or avoidance of GHG emissions that is used to compensate for GHG emissions that occur elsewhere. In a cap-and-trade context, offsets are “GHG reductions from projects undertaken outside the coverage of a mandatory emissions reduction system for which the ownership of verifiable GHG emission reductions can be transferred and used by a regulated source to meet its emission reduction obligations.”²⁰ The ACR registers both voluntary market and pre-compliance offsets and has the same requirements for both.

Carbon Pool

A reservoir of carbon that has the potential to accumulate or lose carbon over time. Common

¹⁹ See http://ipcc-wg1.ucar.edu/wg1/Report/AR4WG1_Print_Ch02.pdf and definition below of Global Warming Potential.

²⁰ Adapted from Pew Center on Global Climate Change. *Climate Change 101: Cap and Trade*. <http://www.pewclimate.org/docUploads/Cap&Trade.pdf>

forest carbon pools are aboveground biomass, belowground biomass, litter, dead wood, soil organic carbon, and wood products.

Carbon Stocks

Carbon stocks represent the measured, estimated or modeled quantity of carbon held in a particular carbon pool. Quantifying GHG emissions and removals for terrestrial carbon offset projects involves estimating, for the baseline and project scenarios, changes over time in carbon stocks in relevant pools.

Certification

Certification is the result of a successful screening by ACR of a GHG Project Plan. Prior to certification, ACR may request corrections or clarifications to the GHG Project Plan. Certification confirms that the GHG Project Plan complies with ACR standards and, if the Project Proponent follows the plan faithfully during project implementation and monitoring, and secures a positive independent verification, the Proponent will ultimately be able to register the project's GHG reductions/removals on ACR. Because ACR carefully screens and certifies every GHG Project Plan as meeting all relevant ACR requirements, and requires third-party verification, ACR does not require a separate third-party validation of the GHG Project Plan.

Clean Development Mechanism (CDM)

The CDM allows GHG emission reduction and removal projects in developing countries to earn certified emission reduction (CER) credits, each equivalent to one metric ton of CO₂, which can be sold and used by industrialized countries to meet a part of their emission reduction targets under the Kyoto Protocol. The CDM is intended

to stimulate sustainable development and emission reductions, while giving industrialized countries flexibility in how they meet their emission reduction targets.²¹ ACR accepts methodologies and tools from the CDM.

Climate, Community & Biodiversity Alliance Standards

The CCB Standards are published by the Climate, Community & Biodiversity Alliance (CCBA), a partnership of international NGOs seeking to foster the development of forest protection and restoration activities around the world that deliver significant climate, community and biodiversity benefits. The CCB Standards include requirements to ensure that local stakeholders are engaged in the design and implementation of emissions reductions activities and that they and their natural environment benefit from these activities.²² The CCB Standards address only the community and biodiversity impacts of a project, not its GHG reductions or removals; validation and verification against the CCB Standards therefore does not satisfy ACR requirements for registering GHG emission reductions/removals. ACR references the CCB Standards as one way to assess community and environmental impacts of a project, but does not require their use. Project Proponents may choose to pursue approval against the CCB Standards to complement project registration on ACR.

²¹ <http://cdm.unfccc.int/about/index.html>.

²² <http://www.climate-standards.org/index.html> and personal communication, Climate, Community & Biodiversity Alliance.

Commercially Sensitive Information

Trade secrets, financial, commercial, scientific, technical or other information whose disclosure could result in a material financial loss or gain, prejudice the outcome of contractual or other negotiations, or otherwise damage or enrich the person or entity to which the information relates.

Community

A community includes all groups of people including indigenous peoples, mobile peoples and other local communities, who live within or adjacent to the project area as well as any groups that regularly visit the area and derive income, livelihood or cultural values from the area. This may include one or more groups that possess characteristics of a community, such as shared history, shared culture, shared livelihood systems, shared relationships with one or more natural resources (forests, water, rangeland, wildlife, etc.), and shared customary institutions and rules governing the use of resources.²³

Community and Environmental Impacts

Community and environmental impacts are the effects, both positive and negative, that project activities may have on the socioeconomic well-being of affected communities or environmental quality in the project area. ACR requires that project activities provide net benefits to affected communities and the environment, and do not provide perverse incentives for the clearing of land to generate carbon offsets.

²³ CCB Standards - Project Design Standards. Second Edition (2008). Climate, Community & Biodiversity Alliance.

Crediting Period

Crediting Period is the finite length of time during which the project's GHG Project Plan is valid, and during which a project can generate offsets for registration on ACR against its baseline. The baseline must be re-evaluated in order to renew the crediting period. The Crediting Period for AR activities, and all IFM activities except stop-logging, is 20 years. The Crediting Period for REDD and stop-logging activities is 10 years.

Eligibility Screening

ACR screens a GHG Project Plan against the *ACR Standard* and any relevant ACR sector standard to determine whether the project meets all ACR requirements. The outcome of a successful eligibility screening is Certification.

Emission Reduction Ton (ERT)

The "ERT" is the ACR unit of exchange for tradable, project-based carbon offsets. ACR issues one ERT for each metric ton of CO₂e emission reductions or removals verified against an ACR standard and methodology. ERTs issued to a project equal the project's Net Emission Reductions minus the offsets set aside in the ACR buffer pool (if applicable).

Early Registration

A project whose GHG Project Plan has been certified by ACR, but which has not yet been verified, has the option of early registration. The project is listed on ACR as "pending verification and issuance" and ACR posts such project information at the Proponent chooses. No ERTs are issued until the GHG reductions/removals have actually occurred and been verified.

Forest

ACR requires Project Proponents to use a nationally approved "forest" definition for the country where the project activity occurs. For projects in the United States, Proponents shall use the U.S. definition below, which is based on the U.S. Forest Service Forest Inventory & Analysis Program definition. For projects in Kyoto Protocol CDM countries, Proponents shall use the Kyoto Protocol definition below, with the relevant Designated National Authority (DNA) selections for minimum land area, crown cover and tree height.

Forest (for projects in U.S.; based on U.S. Forest Service Forest Inventory & Analysis Program definition)²⁴

Land with at least 10 percent cover (or equivalent stocking) by live trees of any size, including land that formerly had such tree cover and that will be naturally or artificially regenerated. To qualify, the area must be at least 1 acre in size. Forest land includes transition zones, such as areas between forest and non-forest lands that have at least 10% cover (or equivalent stocking) with live trees and forest areas adjacent to urban and built-up lands.

Forest (for projects in Kyoto Protocol signatory countries)

The Kyoto Protocol defines forest as follows but allows each country's DNA to define

²⁴ See http://fia.fs.fed.us/library/database-documentation/current/ver4/draft%20FIADB_user%20manual_v4-0_p2_12_22_2009.pdf at page 51. ACR does not exclude urban forestry activities, or forested areas less than 120 feet wide, from potentially meeting the definition of forest.

minimum land area, crown cover and tree height within the bracketed ranges: A minimum area of land of [0.05 – 1.0 hectares] with a minimum tree crown cover (or equivalent stocking level) of [10 – 30 percent] with trees, and with the potential to reach a minimum height of [2 – 5 meters] at maturity *in situ*. A forest may consist either of closed forest formations, where trees of various heights and undergrowth cover a large portion of the ground, or open forest. The definition includes young natural stands and all plantations that have yet to reach a crown density of [10 – 30 percent] or tree height of [2 – 5 meters], as well as areas that usually form part of the forest area but that are temporarily unstocked because of human intervention (e.g., harvesting) or natural causes, but likely will revert to forest.²⁵

Forest Carbon Project

A forest carbon project is a defined project action, or set of actions, to reduce GHG emissions and/or enhance GHG removals by conserving and/or increasing carbon stocks in one or more forest carbon pools in a defined geographic area.

Greenhouse Gas (GHG)

A GHG is any gaseous compound that absorbs infrared radiation in the atmosphere and contributes to the warming of the atmosphere.

²⁵ DNA selections for minimum land area, crown cover and tree height are at <http://cdm.unfccc.int/DNA/allCountriesARInfos.html>. If the project is in a country that has not yet designated a DNA or whose DNA has not yet made selections, the Proponent may propose another nationally approved forest definition.

The primary GHGs regulated under the Kyoto Protocol are carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). The Intergovernmental Panel on Climate Change lists, and periodically updates, GHGs in its assessment reports. ACR's scope includes all GHGs (including Ozone-Depleting Substances) listed in the IPCC *Fourth Assessment Report (AR4)*, Working Group 1, Chapter 2, Table 2.14.²⁶

GHG Emission Reductions and Removals

A GHG emission reduction is the measured decrease of GHG emissions over a specified period of time relative to an approved baseline. A GHG removal is the mass of GHGs removed from the atmosphere over a specified period of time relative to an approved baseline.

GHG Emission System/Trading Program

A voluntary or regulated program that allows for trading in project-based GHG emission reductions or removals, government-issued credits, and/or allowances.

GHG Project Plan

A GHG Project Plan is a document that describes the project activity, satisfies eligibility requirements, identifies sources and sinks of GHG emissions, establishes project boundaries, describes the baseline scenario, defines how GHG quantification will be done and what methodologies, assumptions and data will be used, and provides details on the project's monitoring, reporting and verification

²⁶ See http://ipcc-wg1.ucar.edu/wg1/Report/AR4WG1_Print_Ch02.pdf, page 212.

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procedures. ACR requires every project to submit GHG Project Plan using an ACR-approved methodology. A GHG Project Plan template is available at www.americancarbonregistry.org.

Global Warming Potential (GWP)

Global warming potential is a relative scale translating the global warming impact of any GHG into its CO₂ equivalent over the same timeframe. The Intergovernmental Panel on Climate Change periodically updates the list of GHGs and their GWP factors, based on the most recent science. ACR requires Project Proponents to calculate GHG reductions and removals based on the SAR 100-year GWPs in the IPCC *Fourth Assessment Report (AR4)*, Working Group 1, Chapter 2, Table 2.14.²⁷

Improved Forest Management (IFM)

Activities to reduce GHG emissions and/or enhance GHG removals, implemented on lands designated, sanctioned or approved for forest management (i.e. production of sawtimber, pulpwood, and fuelwood). Eligible IFM project activities include, but are not limited to: conversion from conventional logging to reduced impact logging, conversion of managed forests to protected forests (“stop logging”), extending rotation lengths in managed forest, conversion of low-productive forests to high-productive forests, increasing

²⁷ See page 212. The SAR 100-year values are in the fourth column from the right. Although the IPCC provides a new set of 100-year values in the second column from the right, and may again update GWP values in forthcoming assessment reports, for reasons of fungibility ACR currently requires Project Proponents to use the SAR values. This requirement may change in the future.

forest productivity by thinning diseased or suppressed trees, managing competing brush and short-lived forest species, increasing the stocking of trees on understocked areas (including lands not historically managed as forest but meeting the applicable “forest” definition due to percent tree cover or other factors), increasing carbon stocks in harvested wood products, improving harvest or production efficiency, and shifting from shorter- to longer-term wood products.

Intergovernmental Panel on Climate Change (IPCC)

The IPCC is “the leading body for the assessment of climate change, established by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) to provide the world with a clear scientific view on the current state of climate change and its potential environmental and socio-economic consequences.”²⁸

Leakage

Leakage refers to a decrease in sequestration or increase in emissions outside project boundaries as a result of project implementation. Leakage may be caused by shifting of the activities of people present in the project area, or by market effects whereby emission reductions are countered by emissions created by shifts in supply of and demand for the products and services affected by the project.

²⁸ <http://www.ipcc.ch/organization/organization.htm>.

Methodology

A methodology is a systematic explanation of how a Project Proponent established the project baseline scenario(s), and estimates and monitors emissions reductions or removals by following scientific good practice. Good practice entails that a methodology be conservative, transparent, and thorough.

Methodology Deviations and Revisions

A methodology deviation is a project-specific change to an existing methodology due to a change in the conditions, circumstances or nature of a project. A methodology revision is a fundamental change in an existing methodology due to a change in conditions, circumstances or general developments in knowledge. ACR approval of methodology deviations is determined through ACR's methodology review committee. Approval of methodology revisions will require external scientific peer review.

Methodological Tool

An approved component of a methodology (i.e., a stand-alone methodological module to perform a specific task) or a calculation tool (i.e., spreadsheets or software that perform calculation tasks) that a Project Proponent uses to quantify net GHG reductions/removals or meet other ACR requirements.

Minimum Project Term

The minimum length of time for which a Project Proponent commits to project continuance, monitoring and verification. The Minimum Project Term is a commitment required of the Project Proponent, not necessarily of the landowner. The Minimum Project Term alone does not provide permanence; only effective

risk assessment and mitigation provide permanence and fungibility.

Net Emissions Reductions

Net Emissions Reductions are GHG emission reductions or removals created by a project activity, minus the baseline scenario and any deductions for leakage.

New Methodology Approval

New methodologies and methodology revisions brought to ACR by Project Proponents must be approved by ACR before being incorporated in a GHG Project Plan. The approval process includes ACR's expert review, public consultation, and external scientific peer review, as summarized in the *ACR Standard*.

Non-Biological Emissions

GHG emissions not released directly from plant-based biomass. GHGs from fossil fuel combustion qualify as non-biological emissions.

Permanence

Permanence refers to the longevity of an emissions reduction/removal and the risk of reversal, i.e. the risk that atmospheric benefit will not be permanent. Fire, disease, pests, and other natural disturbances may cause unintentional reversals. The decision to discontinue project activities is an intentional reversal.

Programmatic Project Development Approach

A programmatic approach to project development is related to but distinct from aggregation. While an aggregated project may include a variety of lands but all with the same

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overall baseline and Start Date, a programmatic approach adds the further nuance of incrementally adding lands into the project over time. These lands would be treated as a single project, with aggregated landholdings, different Start Dates, and an overall baseline and monitoring/verification plan defined for the project. The methodology for such projects shall establish applicability conditions and procedures for the addition of new lands to the program.

Project Boundaries

Project boundaries include a project's geographical implementation area, the types of GHG sources and sinks considered, the carbon pools considered, and the project duration.

Project Proponent

An individual or entity that undertakes, develops, and/or owns a project. This may include the project investor, designer, and/or owner of the lands/facilities on which project activities are conducted. The Project Proponent and forest landowner may be different entities.

Reducing Emissions from Deforestation and Degradation (REDD)

The reduction in GHG emissions from the avoided conversion of forest to non-forest use (e.g. to cropland, grassland, settlement, or development) or avoided degradation of forests remaining as forests. Recognized REDD project activities include avoiding planned deforestation, avoiding unplanned/illegal deforestation, avoiding conversion from forest to non-forest use, preventing unsanctioned forest degradation through fuelwood collection

or other practices, and preventing illegal timber harvest.²⁹

Registry Database

Online database that records all ACR projects and inventories, ERT issuance and transactions, and provides transparent public access to project documents and transaction information.

Risk Assessment

To account for and mitigate against the risk of reversal in some projects, ACR requires Project Proponents to conduct an assessment of general and project-specific risk factors, resulting in an overall risk category and a number of ERTs that must be deposited in the ACR buffer pool (unless the Proponent elects a different ACR-approved risk mitigation mechanism). The risk assessment must be conducted using an ACR-approved risk assessment/buffer determination tool, and is evaluated by both ACR and the verifier.

²⁹ In the international context REDD is understood to include reducing emissions from deforestation, improved forest management, and avoiding degradation through illegal or unsanctioned activities. Here for clarity we include under IFM only sanctioned activities carried out on lands designated for forest management. We include under REDD: all deforestation (conversion from forest to non-forest), whether planned/sanctioned or not; and all unplanned, unsanctioned or illegal activities, whether they cause deforestation (conversion to non-forest) or degradation (forest degrades but remains as forest per applicable definition). The categories are important since different activities have different Crediting Periods, and activities where the change in baseline conditions is relatively quicker are given a shorter Crediting Period.

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Standard

A standard is an established norm or requirement in a formal document that establishes uniform engineering or technical criteria, methods, processes and practices. Standards may provide general guidance across all project types, or be sector-specific, such as this document and other ACR standards. While ACR may accept methodologies and tools from other GHG programs, ACR only registers projects meeting ACR standards.

Start Date

ACR defines the start date for forest projects as the date by which the Project Proponent began the project activity on project lands. For AR projects, the start date is when the Project Proponent began planting or site preparation. For IFM, the start date is when the Project Proponent began to apply the land management regime to increase carbon stocks and/or reduce emissions relative to the baseline. For REDD, the start date is when the Project Proponent implemented the project action physically and/or legally. The Start Date is the start of the Minimum Project Term. The Start Date may or may not be the start of the first Crediting Period.

USEPA Climate Leaders

Climate Leaders is a U.S. Environmental Protection Agency industry-government partnership that works with companies to develop comprehensive climate change strategies. Partner companies commit to completing a corporate inventory of their greenhouse gas emissions based on a quality

management system, setting reduction goals, and annually reporting progress to EPA.³⁰

Verification

Verification is a systematic, independent, and documented process for the evaluation of GHG assertions against specific criteria. The verification process is intended to assess the degree to which a project complies with ACR-approved methodologies, tools, eligibility criteria, requirements, and specifications, and has correctly quantified net GHG reductions or removals. Verification must be conducted by an independent third-party verifier. ACR requires a reasonable (as opposed to limited) level of assurance and sets a materiality threshold of $\pm 5\%$.

Verification Statement

A verification statement provides reasonable assurance that, through examination of objective evidence by a competent and independent third party, a GHG assertion is in conformity with applicable requirements and is free of material discrepancies.

Verifier

A competent and independent person, persons or firm responsible for performing the verification process. To conduct verification the verifier must be ACR-approved and accredited in the relevant sectoral scopes.³¹

Voluntary Carbon Standard (VCS)

³⁰ <http://www.epa.gov/stateply/index.html>.

³¹ ACR is in the process of becoming an ANSI-accredited GHG program. As of December 31, 2010, all ACR verifiers must be ANSI-accredited or have begun the process of ANSI accreditation.

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The VCS Program was initiated by The Climate Group, the International Emissions Trading Association and the World Economic Forum. The VCS program goal is to provide a robust global standard and program for approval of credible voluntary offsets. The VCS tradable voluntary offset credit is the Voluntary Carbon Unit (VCU).³²

Wood products

Products derived from harvested wood from a forest, including solid, panel, and fiber.

³² <http://v-c-s.org/about.html>.

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