



The American Carbon Registry™ Forest Carbon Project Standard

**March 2009
Version 1**

The American Carbon Registry's™ requirements and specifications for the quantification, monitoring, and reporting of greenhouse gas forest project-based emissions reductions and removals, methodological acceptance, project verification and verification renewal, and registration and issuance of offsets by the Registry for trade in the U.S. voluntary and pre-compliance carbon markets.

An enterprise of Winrock International

American Carbon Registry™ Forest Carbon Project Standard

March 2009 – v.1

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Acronyms

ACR	American Carbon Registry™
ALM	Agricultural Land Management
AR	Afforestation/Reforestation
C	Carbon
CCAR	California Climate Action Reserve
CCBA	Climate, Community and Biodiversity Alliance (standards)
CDM	Clean Development Mechanism
CH ₄	Methane
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
EB	Executive Board (of the CDM)
“ERT”	Emissions Reduction Tonne (Registry unit of exchange for verified offsets)
ERT	Environmental Resources Trust (a business unit of Winrock International)
FCPS	Forest Carbon Project Standard (standard, Registry)
GHGs	Greenhouse gases
GWP	Global warming potential
HFC	Hydrofluorocarbon
ISO	International Standardization Organization
IFM	Improved Forest Management
IPCC	Intergovernmental Panel on Climate Change
JI	Joint Implementation
MRV	Monitoring, reporting, and verification (protocol)
N ₂ O	Nitrous oxide
PD	Project document (documentation for registration on Registry)
PFC	Perfluorocarbon
REDD	Reducing Emissions from Deforestation and Degradation
SF ₆	Sulfur hexafluoride
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Voluntary Carbon Standard

Key Terms

Additionality

A project results in carbon benefits additional to business-as-usual and as a direct result of the carbon project transaction.

Afforestation

The direct human-induced conversion of land that has not been forested for a period of at least 50 years to forested land through planting, seeding and/or the human-induced promotion of natural regeneration.

Afforestation/Reforestation (AR)

Increasing carbon stocks by establishing, increasing and restoring vegetative cover through the planting, sowing or human-assisted natural regeneration of woody vegetation. AR is one of the three eligible forest project activities on the American Carbon Registry.

American Carbon Registry (ACR)

The American Carbon Registry™ (the Registry) is a voluntary, online greenhouse gas registration and emissions trading system used by Registry 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 report (in a separate account) verified GHG inventories. Winrock International, a non-profit organization, owns and operates the American Carbon Registry.

Annual Quality Assurance Attestation Statement

The statement that Project Proponents shall provide annually to the American Carbon Registry relating to the additionality, ownership, and overall environmental integrity of the project.

Baseline scenario

The scenario that represents 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. The baseline is no longer than the duration of the project but can be less, particularly for projects related to projecting land use change (e.g. deforestation) where projecting a baseline deforestation rate much beyond ten (10) years would not be realistic.

Biological emissions

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

Buffer

American Carbon Registry insurance mechanism whereby the Project Proponent is required to contribute an adequate number and type of offsets, as determined by the Registry, to a buffer pool held by the Registry in order to replace unforeseen losses in carbon stocks. The buffer contribution is a percentage of the project's reported offsets; the percentage is determined through an assessment of project risk.

Carbon dioxide-equivalent (CO₂e)

Carbon dioxide equivalence relates to global warming potential (GWP). CO₂ is the baseline unit to which one compares the GWP of all other GHGs. The comparison is the amount that any one gas contributes to global warming compared to the same amount of CO₂ over the same period of time. For instance, methane has a GWP of 25 over 100 years; one metric ton of methane has a CO₂e of 25 metric tons. The Registry registers offsets using CO₂e calculations based on 100-year GWPs.

Carbon offsets

A carbon offset is the net carbon benefit that a project generates after accounting for leakage. The number of ERTs the Registry will issue to a project equals the total number of carbon offsets the project generates minus the number of offsets the Project Proponent holds as a buffer reserve.

Carbon pools

A carbon pool is a reservoir of carbon that has the potential to accumulate or lose carbon over time. Common forest carbon pools are aboveground biomass, belowground biomass, litter, dead wood and soil.

Carbon stock

The quantity of carbon held within a pool, measured in metric tons of CO₂-e

Clean Development Mechanism (CDM) – Is a mechanism established by Article 12 of the Kyoto Protocol for project-based emission reduction activities in developing countries. The CDM is designed to meet two main objectives: to address the sustainable development needs of the host country, and to increase the opportunities available to Treaty Parties to meet their reduction commitments.

Climate , Community & Biodiversity Alliance (CCBA)

The CCBA has methods intended to address community and biodiversity concerns and are designed for a Project Proponent to use them in conjunction with a separate carbon accounting standard such as CDM or VCS.

Communities –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.

Community and/or environmental impacts

Community and environmental impacts refer to the effects that project activities may have on the socio-economic or environmental landscape.

Completeness

Completeness implies complete accounting for changes in carbon stocks across all carbon pools, landscape units, and time periods.

Crediting period

Crediting period is the finite length of time during which the project's GHG Project Plan or MRV Project Protocol is valid, and the finite length of time during which a project can generate offsets for registration on the American Carbon Registry based on the current published GHG Project Plan or MRV Project Protocol

GHG emissions reduction or removals

Reductions of emissions of GHGs released into the atmosphere, or removals from the atmosphere, measured in metric tonnes carbon dioxide equivalent (CO₂e), as converted per the 100-year Global Warming Potential for such gases established in the *IPCC Fourth Assessment Report*.

Emission Reduction Tonne (ERT) Unit

The "ERT" is the American Carbon Registry's unit of exchange for tradable, project-based carbon offsets. Registry issues one ERT for each metric ton of CO₂e emission reduction or removal verified against a Registry-approved standard.

Forest Entity

The basic unit of participation in the Registry, which includes a private individual, corporation or other legally constituted body, city or county, or a federal, state, and local government agency that owns forest/trees.

Forest

The Registry uses the Kyoto Protocol definition: A minimum area of land of 0.05 – 1.0 hectares with a minimum tree crown cover (or equivalent stocking level) of between 10 – 30 per cent 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 high 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 per cent or tree height of 2 – 5 meters, as are 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.

Greenhouse Gas (GHG)

A greenhouse gas refers to any gaseous compound that absorbs infrared radiation in the atmosphere and contributes towards the warming of the atmosphere. The six Kyoto greenhouse gases (GHGs) regulated under the Kyoto Protocol are carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). The Registry requires projects to account for any significant source of CO₂, N₂O, and CH₄ as a result of project activities.

Global Warming Potential (GWP)

Global warming potential is a relative scale and its value depends on how the gas concentration decays over time in the atmosphere. CO₂ is the baseline unit to which one compares the GWP of all other GHGs. The comparison is the amount that any one gas contributes to global warming compared to the same amount of CO₂ over the same timeframe. By definition, CO₂ has a GWP of one (1). For instance, methane has a GWP of 25 over 100 years. Thus, one metric ton of methane has a CO₂e of 25 metric tons. The Registry registers offsets using CO₂e calculations based on 100-year GWPs as described in the IPCC *Fourth Assessment Report (AR4)*, Working Group 1, Chapter 2, Table 2.14.

Improved Forest Management (IFM)

Activities related to improved forest management (IFM) are those implemented on forest lands managed for wood products such as saw timber, pulpwood, and fuel wood and are included in the IPCC category “forests remaining as forests”. Only areas that are legally designated, sanctioned or approved for such activities (e.g., private timber lands, logging concessions or plantations) by national or local regulatory bodies are eligible for crediting under the IFM category. Project Proponents can change various forest

management activities that could increase carbon stocks and/or reduce GHG emissions, but only a subset of these activities make a measurable difference to the long-term increase in GHG benefits compared to business-as-usual practices. This includes the following eligible activities: conversion from conventional logging to reduced impact logging, conversion of managed forests to protected forests, extending the rotation age of evenly aged managed forest, and conversion of low-productive forests to high-productive forests. IFM is one of the three eligible forest project activities on the Registry.

Intergovernmental Panel on Climate Change (IPCC)

The IPCC provides assessments to policymakers of the results of ongoing climate change research. The IPCC is responsible for providing the scientific and technical foundation for the United Nations Framework Convention on Climate Change (UNFCCC), primarily through the publication of periodic assessment reports. The IPCC reflects existing viewpoints within the scientific community; the basis for its information and reports is scientific evidence.

Leakage

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

Methodology

A systematic explanation of how a Project Proponent established the project baseline, and estimates and monitors emissions reductions or removals by following scientific good practice. Good practice entails that a Project Proponent be conservative, transparent, and thorough. To generate an ERT unit, the Project Proponent must apply the FCP Standard to estimate and monitor its net GHG emissions reductions/removals.

Monitoring, Reporting, and Verification (MRV)

A GHG monitoring, reporting, verification (MRV) plan (a.k.a. protocol) defines how, what, and when a Project Proponent should measure, monitor, and report the forest project in order for an independent third party to verify project outcomes. In the project development cycle, the MRV is a component of the broader project design document.

Net Emissions Reductions

Net emissions reductions refer to the removal or reduction of GHG emissions by the project activity minus the baseline scenario and leakage.

Non-biological emissions

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

Non-permanence risk analysis

The process by which a Project Proponent assesses the risk that a project's offsets are not permanent. The analytical outcome is the basis for determining the size of the buffer. The impermanence risk analysis evaluates four types of risk: project, economic, regulatory and social, and environmental/natural disturbance.

Permanence

The longevity of a carbon pool and the stability of its stocks, given the management and disturbance environment in which it occurs. A feature of land-based carbon projects is the possibility of a reversal of carbon benefits from either natural disturbances (e.g., fires, disease, pests, and unusual weather events), or from the lack of reliable guarantees that the original land use activities will not return after the project concludes.

Project boundaries

Refers to the geographical implementation area, the types of GHG sources and sinks considered, the carbon pools considered, and the project duration.

Project Proponent

Entity or individuals organizing, proposing or advocating a particular carbon offset project. The Project Proponent could be the project designer(s), developer(s) and/or investor(s), or other parties working on behalf of the project.

Reducing Emissions from Deforestation and Degradation (REDD)

The reduction in GHG emissions from the reduced conversion of forests (growing on upland or wetland, including peat swamp areas), to cropland, grassland, and settlement. REDD is one of the three eligible forest project activities under the Registry.

Reforestation

The direct human-induced conversion of land that has not been in forest for a period of less than fifty (50) years to forested land through planting, seeding and/or the human-induced promotion of natural regeneration.

Standard

A standard is an established norm or requirement in a formal document that establishes uniform engineering or technical criteria, methods, processes and practices. The Registry uses only its own standards.

Tools

A tool can be a *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).

Verification

The act of confirming that the Project Proponent collected, quantified, and submitted the GHG emissions reductions data in accordance with the guidelines put forth in the Registry eligibility criteria and sector standard.

Verifier

The individual responsible for ensuring that a project complies with the Registry standard, and complies with Registry eligibility criteria.

Verified Emissions Reduction

An emissions reduction from a project action or a reduction against a corporate inventory that a verifier has verified as compliant with the Registry standard and eligibility criteria for quality and environmental integrity.

Wood products

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

Foreword

The *American Carbon Registry*[™] is an enterprise within Winrock International's Environment Group, and is a sister enterprise of the Environmental Resources Trust. Winrock International works with people in the U.S. and around the world to empower the disadvantaged, increase economic opportunity, and sustain natural resources. The American Carbon Registry[™] developed the *Forest Carbon Project Standard* to provide a robust, innovative, and business-friendly standard for Project Proponents and market participants to originate, register, and trade high quality, low risk project-based forest carbon offsets for the U.S. carbon markets.

The *Forest Carbon Project Standard* is one of several standards developed by the American Carbon Registry (the "Registry"). The *Forest Carbon Project Standard* (FCPS) is part of the broader American Carbon Registry enterprise. The *American Carbon Registry Standard* describes the overall requirements, eligibility criteria, and specifications for all GHG inventories and GHG projects, as well as registration and issuance. The *Registry Operating Guidelines* provide additional guidance related to the role, activities, and services of the American Carbon Registry, the rules that regulate it, and the Registry's operating procedures.

The Registry's intent with these documents (available at <http://americancarbonregistry.org/carbon-accounting>) is to support the development of the voluntary and pre-compliance U.S. carbon markets. The requirements in ISO14064, Parts 2-3:2006 and ISO 14065:2007 are the foundation for all of the Registry's standards. In 2009 the Registry will apply for approval by the International Organization for Standardization (ISO) for the *Forest Carbon Project Standard*. In advance of this

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release, Project Proponents shall use this document to develop Registry-compliant forest projects.

Development of the *Standard* would not have been possible without the support, loyalty, and commitment of the American Carbon Registry's Founding Members from whom Registry staff has learned so much about the U.S. carbon markets. The Winrock International Board of Directors has been indispensable to the *Standard's* development. In the absence of their support, guidance, and insight, little if any of this would have been possible.

In particular, Registry staff wishes to thank Winrock CEO Frank Tugwell and the members of the special Board Task Force, a subset of Winrock's larger board comprising the following four members who have volunteered considerable time, insight, and dedication to the Registry's growth and successes: Brooks Browne, Christiana Figueres, Will Ketcham, and Paul Savage.

The American Carbon Registry extends its thanks and appreciation to the following individuals who contributed their time, academic expertise, and field expertise to develop this Standard: Wiley Barbour, Sandra Brown, Mary Grady, Nancy Harris, Bill Howley, John Kadyszewski, Gary Kaster, Jonathan Klavens, Ken MacDicken, Tim Pearson, Julia Philpott, and Gordon Smith.

Finally, the American Carbon Registry recognizes the value of, and has cited throughout this document, the following organizations upon whose contributions to the GHG emissions trading field the Registry relied to develop the core of the *American Carbon Registry Standard*:

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- Clean Development Mechanism (CDM, <http://cdm.unfccc.int/methodologies/PAmethodologies/approved.html>) for its baseline, additionality determination, and monitoring tools and methodologies;
- Climate Group (http://www.theclimategroup.org/major_initiatives/vcs) for its tools and methodologies on permanence risk assessment and buffer mechanism and its Agriculture, Forest and Other Land Use (AFOLU) standard under its Voluntary Carbon Standard Program.
- International Organization for Standardization (ISO, <http://www.iso.org/iso/home.htm>) for its materials under ISO 14064-1-3:2006 and ISO 14065:2007;
- U.S. Environmental Protection Agency (U.S. EPA, <http://www.epa.gov/climateleaders>) for its sector and project tools and methodologies, and GHG inventory monitoring and reporting guidance under the Climate Leaders Program; and
- Voluntary Carbon Standard (VCS, <http://v-c-s.org/>) for its baseline, risk buffer determination tools and methodologies;
- World Resources Institute/World Business Council for Sustainable Development (WRI/WBCSD, <http://www.ghgprotocol.org/>) for the GHG accounting guidance materials for GHG project and for GHG inventories under the GHG Protocol Initiative.

The appropriate citation for this document is Winrock International (2009), *American Carbon Registry Forest Carbon Project Standard*, American Carbon Registry™, Arlington, Virginia. Project Proponents can view the current FCP standard for the Registry at <http://www.americancarbonregistry.com/carbon-accounting.html>

SECTION I: INTRODUCTION

The American Carbon Registry™ (the Registry) is a voluntary, online greenhouse gas (GHG) registration and emissions trading system used by Registry 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 report (in a separate account) verified GHG inventories.

The purpose of the American Carbon Registry’s *Forest Carbon Project Standard* document is to detail for the carbon marketplace the minimum quality level that every forest carbon project must meet, if not exceed, in order for the American Carbon Registry to transform the project’s GHG emissions reductions and removals into tradable and fungible environmental assets within the existing U.S. voluntary and emerging pre-compliance carbon markets.

The *Forest Carbon Project Standard* details the requirements and specifications for the quantification, monitoring, and reporting of project-based greenhouse gas (GHG) emissions reductions and removals, project verification, and registration and issuance of offsets by the Registry for trade in the U.S. voluntary and pre-compliance carbon markets. The Registry provides flexibility for a Project Proponent to use a wide range of methodologies and tools from the Clean Development Mechanism (CDM) and the Climate Group – Voluntary Carbon Standard in order for its project to meet the *American Carbon Registry Standard* (2009) for offset registration and bring its offsets to market as quickly as possible.

The *Forest Carbon Project Standard* (FCPS) includes requirement and specifications for afforestation and reforestation (AR); improved forest management (IFM); and reducing

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emissions from deforestation and degradation (REDD) projects. The FCPS does not include agriculture land use projects; the forthcoming (in early 2009) Registry Agriculture Carbon Project (ACP) Standard will capture this project type. The Registry's *Forest Carbon Project Standard* requires that every offset from each project be real, measurable, permanent, additional, and be the result of a verified emissions reduction and/or removal, i.e., the basics of high quality and low risk.

The following four sections address the forest sector's dual capacity to store and emit CO₂. Section II discusses project eligibility requirements that apply to all forest projects, with some variation by project type. Section III details Registry accounting concepts. Section IV describes the Registry-approved methodologies and quantification tools that Project Proponents shall use for forest projects. Section V outlines the Registry's approach to additionality determination. Section VI details the Registry accounting requirements.

SECTION II: ELIGIBILITY REQUIREMENTS

Forest projects must meet the American Carbon Registry™ eligibility criteria in Table 1 below. Project Proponents shall describe and document in the Project Document (PD), i.e., either the GHG Project Plan or MRV Project Protocol, how the project meets the criteria in order to enter the Registry system for project verification, registration, and offset issuance. In addition, the Project Proponent shall demonstrate in the PD that it has met all relevant regulations, legislation, and project approvals (e.g., environmental permits). Table 1 identifies the Registry’s eligibility criteria for forest projects, provides a definition of the criterion, and articulates the Registry requirement for that criterion.

The Registry reserves the right to remove offsets from the Registry on a case-by-case basis.

Table 1 - Eligibility Criteria for Forest Carbon Offset Projects

Criteria	Definition	Requirement
Project Document	<p>A project document (PD) defines how, what, and when a Project Proponent shall measure, monitor, and report the project in order for an independent third party to verify project outcomes.</p> <p>The PD is either a GHG Project Plan or a MRV Project Protocol, depending on whether the project uses an existing and/or Registry-approved methodology within a sector standard, or a new methodology for a new project type that is not</p>	<p>The Registry requires a GHG Project Plan for projects using existing and Registry-approved tools and methodologies, and based on an existing Registry sector standard, as applicable.</p> <p>The Registry requires a MRV Project Protocol for projects using a new methodology and/or tool (but validated by the Registry) and not based on a Registry sector standard, as applicable.</p> <p>All PDs shall address each of the following eligibility criteria in this table, and in accordance with ISO</p>

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	under an existing sector standard.	14064-2:2006, Clause 5.2.
Start Date	The Registry defines the start date for forest projects as the date by which the Project Proponent began the project activity on project lands.	The Registry accepts forest projects with a Start Date no earlier than 01 January 1990. The Registry will evaluate forest project start dates on a case-by-case basis based on the original intent of the project. Start date definitions per project type are: AR project start is when the Project Proponent began planting; IFM project start date is when the Project Proponent began to apply the land management regime; REDD is when the Project Proponent implemented the project-action physically and/or legally.
Real	A real project-based offset is the result of a project action that yields after-the-fact, quantifiable and verifiable GHG emissions reductions/removals. Real offsets yield atmospheric benefit.	Offsets shall exist prior to issuance. The Registry will not forward issue nor forward register a projected stream of future offsets.
Direct Emissions	An emission or removal is a “direct emission” if the Project Proponent owns or has control over the source of the emissions (e.g., equipment) or the emissions sink (e.g., project lands).	Project Proponent shall own or have control for the life-of-project over the GHG sources and/or sinks from which the reduction or removals originate.
Additional	Additionality is a test intended to ensure that project offsets are “in addition to” reductions and removals that would have occurred without carbon	Every project shall pass through a test of the project’s additionality along three dimensions: 1) projects must meet or exceed regulatory requirements; 2) go beyond common practice; and 3) overcome

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	market incentives.	implementation barriers (institutional, financial or technical).
Offset Title	Title is a legal term representing rights and interests in an offset, a future stream of offsets, or a project delivering offsets.	Project Proponent shall provide documentation and attestation of undisputed title to all offsets prior to registration. Title to offsets shall be clear, unique, and uncontested.
Land Title	Title is a legal term representing rights and interests in project lands.	Project Proponent shall provide documentation and attestation of undisputed land ownership to all project lands.
Project Baseline	The project baseline is a counterfactual scenario that forecasts the likely stream of reductions/removals to occur if the Project Proponent does not implement the project, i.e., the "business as usual" case.	<p>Project Proponents shall use appropriate tools and methodologies to estimate and update forest project baselines.</p> <p>Project Proponents shall estimate the baseline for all forest projects at the project start. Baseline will be verified by a Registry-approved verifier at time of offset issuance.</p> <p>At the time of project verification, verifiers shall review and verify that the minimum project contribution to the Registry buffer pool is valid.</p>
Permanence	Permanence is in reference to the longevity of terrestrial carbon stocks, i.e., carbon that is stored (sequestered) in biomass. Fire, disease, pests, and human disturbances can reduce carbon stocks and result in the reversal of carbon removal, i.e., the atmospheric benefit is not permanent. In such a case, the offset is not permanent, thus the need to address	<p>Project Proponents shall identify, assess, and address in the PD the risk of reversal by using Registry-approved methodologies and tools (e.g., the VCS permanence risk assessment and buffer determination tool). Relative risk of reversal will determine buffer values, and therefore contribution to the Registry buffer pool.</p> <p>Alternatively Project Proponents shall provide evidence of sufficient insurance coverage to recover any future reversal.</p>

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	non-permanence and mitigate reversal risk.	<i>The Registry reserves the right to reject the risk assessment method and findings either at the time of project screening or verification acceptance.</i>
Carbon Buffer Pool	A buffer pool is a type of risk management mechanism whereby the Project Proponent maintains a reserve of project-based offsets in order to mitigate reversal risk by having the capacity to replace unforeseen losses in carbon stocks.	<p>Project Proponents shall participate in the Registry buffer pool unless the option to maintain insurance coverage is selected.</p> <p>Project Proponents shall use the “Tool for AFOLU Non-Permanence Risk Analysis and Buffer Determination” in order to address risk permanence and buffer determination.</p> <p>The offsets held in the buffer pool shall be under the management and sole control of the Registry.</p> <p>Project Proponents shall undergo every five (5) years, counting from the first project verification, a review by an independent verifier of the minimum project buffer values to ensure that a positive, safe, and balanced buffer pool exists for the project at all times.</p>
Leakage Controlled	Leakage is the increase in GHG emissions outside the project emissions boundaries that occurs because of the project action.	<p>Project Proponents shall include leakage in the GHG Project Plan or MRV Project Protocol, and shall deduct all leakage that reduces the GHG emissions reduction/removal benefit of the project.</p> <p>The Registry assesses leakage on a case-by-case basis.</p>
Crediting	Crediting period is the finite length of time for which the project baseline is valid,	AR projects will have a crediting period of thirty-five (35) years or less, with opportunities for

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<p>Period</p>	<p>and during which a project can generate offsets for registration in the Registry.</p>	<p>baselines validation renewal. IFM and REDD projects will have a crediting period of ten (10) years or less, with opportunities for validation renewal.</p> <p>Project Proponents shall use the current baseline methods and factors that are in effect with Registry-approved tools and methodologies at the time of crediting period renewal.</p> <p>If the independent verifier does not issue a positive baseline validation after thirty-five (35) years for AR projects, and ten (10) years for IFM and REDD, it will provide a written explanation and list corrective actions for the Project Proponent to take within a specified timeframe at the discretion of the Registry.</p> <p>If the Registry determines at any time that there is no longer regulatory surplus, the Registry reserves the right to nullify the crediting period and no longer issue offsets from the project.</p>
<p>Independent Verification</p>	<p>Verification is the independent assessment of GHG emissions reduction and removal by a qualified third party. The outcome is a verification statement that provides an opinion on the relevance, completeness, accuracy, reliability, and transparency of the quantification data and methods.</p>	<p>The Registry requires independent verification, as scheduled in the project’s GHG Project Plan or MRV Project Protocol by a Registry-approved verifier.</p> <p>Verifiers shall use transparent and replicable verification methods against the relevant Registry project eligibility criteria and forest sector standard.</p>

		<p><i>The Registry reserves the right to reject a verification statement from a Registry-approved verifier.</i></p>
<p>Community & Environmental Integrity</p>	<p>Projects have the potential to generate both positive and negative community and environmental impacts.</p>	<p>Project Proponents shall take steps to mitigate negative community and environmental impacts prior to registration.</p> <p>Project Proponent shall provide the Registry an Annual Qualitative Review and Attestation statement of any claims that arise during the project about negative community and environmental impacts.</p> <p>If impacts arise during project implementation, Project Proponents shall report them to the Registry, and mitigate negative impacts prior to Registry issuance of new reductions/removals from the project.</p> <p><i>The Registry reserves the right to remove offsets from the Registry on a case-by-case basis.</i></p>

A. Additional Requirements

Land Eligibility

Project Proponents shall provide documented evidence in the GHG Project Plan or the MRV Project Protocol that no AR project areas experienced anthropogenic clearing of native ecosystems within the ten (10) year prior to the proposed Project Start Date. AR project areas may have experienced loss of forest cover within ten (10) years if the loss

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was caused by natural disturbance and it can be demonstrated that natural recovery is not occurring.

Tools and Methodologies

Project Proponents may use:

- CDM or VCS tools and methodologies for AR projects;
- VCS tools and methodologies for IFM and REDD projects;
- VCS “Guidance for Agriculture, Forestry and Other Land Use Projects (2007.1, 2008)” for all other forest project types;
- VCS “Tool for AFOLU Methodological Issues” for the determination of project type and land eligibility, project boundary, carbon pools, baseline, leakage and the net project GHG benefits; and
- VCS “Tool for AFOLU Non-Permanence Risk Analysis and Buffer Determination” to assess non-permanence risk, prepare a risk analysis, and determine the buffer.

SECTION III: ACCOUNTING CONCEPTS

A. Forest Carbon Project

A forest carbon project is a defined project action, or set of actions, to reduce greenhouse gas (GHG) emissions/remove GHGs from the atmosphere by conserving and/or increasing forest carbon stocks in a defined geographic area.

B. GHG Emissions Accounting

Project Proponents shall account for any significant source of GHGs in the GHG Project Plan/MRV Project Protocol (a.k.a. the Project Document or PD) by using Best Practice accounting methods. The Registry affirms a set of guiding principles that shape its work in the U.S. carbon markets and carbon markets internationally. Clause 3 in the ISO 14064-2:2006 Standard is the basis for the American Carbon Registry's project-level accounting requirements, and the GHG Protocol, Corporate Inventory Guidance (2005) is the basis for the GHG inventory accounting principles. Please see *American Carbon Registry Standard* (2009), Accounting Principles, p. 36 available at www.americancarbonregistry.org.

C. Project Baseline

The baseline scenario is a long-term projection of the forest management practices or activities that would have occurred (or the absence thereof) within the project's physical boundaries in the absence of the project. The project baseline is a counterfactual scenario 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 GHG reductions and removals. The quantity of offsets that a project generates is the difference between actual emissions or removals and the baseline emissions or removals resulting from the project action.

D. Measurement Accuracy and Precision

The American Carbon Registry requires that the 90% statistical confidence interval of sampling be no more than 10% of the mean estimated amount of emission reduction/removal. If the Project Proponent cannot meet the targeted +/- 10% of the mean at 90% confidence, then the reportable amount shall be the mean minus the lower bound of the 90% confidence interval.

E. Completeness

Project Proponents shall 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. If a project action increases use of inputs, Project Proponents shall count as project emissions expected emissions from production of those inputs. Project Proponents should not count downstream emissions, except for non-economic downstream emissions. For example, vehicles emit oxides of nitrogen and some of these oxides become nitrous oxide in the atmosphere. Project Proponents shall not count emissions involved in economic uses of project outputs (unless the economic uses are a direct component of the project activities). For example, if a project grows grain then sells it, and the grain buyer then feeds the grain to cattle, the Project Proponent would not estimate and count as project emissions the methane emissions from the cattle.

F. Leakage

Leakage is the displacement of GHG emissions from inside the project's physical boundaries to locations outside of the project's boundaries as a result of the project action. Leakage includes the carbon in wood that a forest entity removes from project lands and subsequently stores in harvested wood products. The Registry will register only those offsets from forest projects that account for leakage in the GHG Project Plan or MRV Project Protocol pursuant to this standard and based on CDM and VCS methodologies as

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appropriate. All Project Proponents shall address the requirements in Table 2 in the GHG Project Plan or MRV Project Protocol.

The Registry reserves the right to assess leakage on a case-by-case basis.

Table 2 – Registry Requirements for Leakage Assessment & Quantification

Leakage Category	Assessment	Quantification
Activity shifting	Required	Required
Market	Required	Required
Other	Not required	Not required

G. Permanence

Permanence is a reference to the longevity of terrestrial carbon stocks. Events such as forest fire, disease, pests, and illegal logging can harm carbon stocks and result in the reversal of carbon reduction/removal, i.e., the atmospheric benefit is not permanent.

Project Proponents shall identify, assess, and address permanence by a Registry-approved mechanism. Project Proponents have the option to use one of the following to address the risk of reversal:

- Project contributions of offsets to the Registry buffer pool;
- Insurance policy guaranteeing replacement price for offsets;
- Donated, non-forest offsets that meet the Registry Standards.

H. Buffer

To address risk of reversal, the Registry uses a buffer, i.e., a contribution of an adequate number and type of offsets, as determined by the American Carbon Registry, to a buffer pool to cover any future reversals. Buffer size is determined through a risk assessment completed by the verifier and the Registry.

I. Socioeconomic and Environmental Impacts

Projects have the potential to generate socioeconomic and environmental impacts, including impact on the integrity of existing forests, biodiversity, clean water, poverty alleviation, and respect for the rights of indigenous peoples and other local communities.¹ The Registry requires written disclosure in the Annual Qualitative Review of any claims that arise during the project about negative environmental and socio-economic impacts. Project Proponents shall take steps to mitigate them prior to generation of emissions reductions and removals. The Registry reserves the right to remove offsets from the Registry on a case-by-case basis.

The Registry reserves the right to assess the disclosure on a case-by-case basis.

J. Biomass Energy

Over time, GHG emission reductions from displacement of fossil fuel could make a net GHG benefit for a project, even if displacement of fossil fuel reduces terrestrial carbon stocks temporarily. Project Proponents must calculate GHG emissions from displaced fossil fuel by using energy project protocols. If biomass energy projects reduce terrestrial carbon stocks, Project Proponents must count these reductions as project emissions. Project Proponents may calculate terrestrial carbon stock change over periods of up to ten (10) years. That is, a Project Proponent does not need to count as a project emission in year one (1) the removal of biomass for fuel if the biomass carbon stock returns to at least the original stock by the end of year ten (10).

¹ ACR will count as evidence but does not require certification from the Forest Stewardship Council (FSC) (www.fsc.org) as well as completion of, or conformity with, the Climate, Community & Biodiversity Alliance approval process for forest projects under the Climate, Community & Biodiversity (CCB) standard (www.climate-standards.org).

SECTION IV: TOOLS AND METHODOLOGIES

The American Carbon Registry recommends the adoption of and compliance with Registry methodologies where they exist. The Registry accepts pre-existing, approved methodologies and tools from the following other GHG emissions systems: the Clean Development Mechanism (CDM), U.S. Environmental Protection Agency (U.S. EPA) Climate Leaders Program, and the Climate Group Voluntary Carbon Standard (VCS) to the extent they use ISO 14064, Parts 1-3: 2006 Standards, are industry Best Practice, and comply and are in no way in conflict with the American Carbon Registry Standard (2009) and Eligibility Criteria (2009).

The *American Carbon Registry Standard* supersedes all other standards, and all non-Registry standards, methodologies, and tools are subject to clarification by Registry standards, criteria, and operating guidance. Project Proponents may use the following tools and methodologies for afforestation and reforestation (AR) projects, improved forest management (IFM) projects, and reducing emissions from deforestation and degradation (REDD) projects:

- CDM or VCS tools and methodologies for AR projects;
- VCS tools and methodologies for IFM and REDD projects;
- VCS - “Guidance for Agriculture, Forestry and Other Land Use Projects (2007.1, 2008)” for all other forest project types;
- VCS - “Tool for AFOLU Methodological Issues” for the determination of project type and land eligibility, project boundary, carbon pools, baseline, leakage and the net project GHG benefits; and
- VCS - “Tool for AFOLU Non-Permanence Risk Analysis and Buffer Determination” to assess non-permanence risk, prepare a risk analysis, and determine the buffer

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Table 3 below provides the links to each of the tools and methodologies, as well as tools and methodologies to fossil fuel-based direct emissions, sources and sinks significance testing, additionality determination, baseline quantification, land eligibility, project boundary, leakage assessments, non-permanence and buffer determination, and global warming potential factors.

Table 3 – Accepted 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
U.S. EPA – Direct Emissions from Mobile Combustion Sources (2008) (projects)	http://www.epa.gov/climateleaders/documents/resources/mobilesource_guidance.pdf
U.S. EPA – Direct HFC and PFC Emissions from Use of Refrigeration and Air Conditioning Equipment (2008)(projects)	http://www.epa.gov/climateleaders/documents/resources/mfgrfg.pdf
VCS – Guidance for Agriculture, Forestry and Other Land Uses (2008) (projects)	http://www.v-c-s.org/docs/Guidance%20for%20AFOLU%20Projects.pdf

<p>VCS – <i>Tool for AFOLU Methodological Issues</i> for land eligibility, project boundary, and carbon pools (2008) (projects)</p>	<p>http://www.v-c-s.org/docs/Tool%20for%20AFOLU%20Methodological%20Issues.pdf</p>
<p>VCS – <i>Tool for Non-permanence Risk Analysis and Buffer Determination</i> (2008) (projects)</p>	<p>http://www.v-c-s.org/docs/Tool%20for%20AFOLU%20Non-Permanence%20Risk%20Analysis%20and%20Buffer%20Determination.pdf</p>

The Registry reserves the right to reject a specific methodology and/or tool.

A. Community Impacts Assessment

The American Carbon Registry recognizes the Climate, Community & Biodiversity Alliance’s (CCBA) definition of community. The Registry does not require compliance with the CCB Standard (2008), or completion of the CCB verification process. The Registry does recommend, however, that Project Proponents choose among the CCB’s published list of preferred tools and methodologies to identify, assess, and report on community and environmental impacts. CCBA’s definition (and by extension the Registry’s accepted definition) of community is:

“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.” Source: CCB Standards, *Project Design Standards*. Second Edition (2008).

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Project Proponents shall make a credible estimate of impacts in a signed attestation letter confirming that it has mitigated any and all negative community and environmental impacts prior to registration in the Registry.

A credible estimate of impacts must include changes in community well-being due to project activities and an evaluation of the negative impacts by the affected groups. Project Proponents shall base these estimates on defined and defensible assumptions about how project activities will alter social and economic well-being, including potential impacts of changes in natural resources and ecosystem services identified as important by the communities over the duration of the project. Project Proponents shall:

- Describe how the ‘without project’ reference scenario would affect communities in the project zone, including the impact of likely changes in water, soil and other locally important ecosystem services. Compare to the ‘with project’ scenario.
- Describe how the ‘without project’ reference scenario would affect biodiversity in the project zone (e.g., habitat availability, landscape connectivity and threatened species). Compare to a ‘with project’ scenario.

B. Community Impacts Assessment Tools

The difference between the ‘with’ and ‘without’ scenarios (i.e., the community benefit) shall be positive for all community groups in order for the project to qualify for registration on the Registry. Table 4 below provides a list of resources, taken from the CCBA that Project Proponents may use to develop their statement.

Table 4 – Community Impacts Assessment Resources per the CCBA

The International Council on Mining and Metals (ICMM) indicators on community engagement.	http://www.icmm.com/page/629/community-development-toolkit
World Resources Institute (WRI). 2003. <i>Assessing Access to Information, Participation, and Justice for the Environment: A Guide.</i>	http://pubs.wri.org/pubs_description.cfm?PubID=3814

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Stec, S. 2003. <i>Handbook on Access to Justice under The Aarhus Convention</i> . REC, Szentendre	http://www.elaw.org/system/files/aarhus.AccessJustice.pdf
Livelihoods Connect: <i>Sustainable Livelihoods ToolBox</i> , Learning Guide, Key Documents	http://www.livelihoods.org/info/info_toolbox.html
The Sustainable Livelihoods Approach	www.ifad.org/sla/
Pasteur, K. <i>Tools for Sustainable Livelihoods: Livelihoods Monitoring and Evaluation</i> . IDS, 2001	http://www.livelihoods.org/info/tools/Pas-ME01.rtf
Case Studies of Monitoring Livelihoods Impact	http://www.livelihoods.org/lessons/lessons.html
Smith, J., Scherr, S.J. 2002. <i>Forest carbon and local livelihoods: assessment of opportunities and policy recommendations</i> . CIFOR Occasional Paper. No. 37. 45p.	http://www.cifor.cgiar.org/publications/pdf_files/OccPapers/OP-037.pdf
Rezende, D. and S. Merlin. 2002. <i>Social Carbon: Adding value to sustainable development</i> . Instituto Ecológica, Palmas, Brazil	http://www.ecologica.org.br/downloads/publicacoes/livro_social_carbon.pdf
CARE. 2002. <i>Household Livelihood Security Assessments. A Toolkit for Practitioners</i>	http://pqdl.care.org/pv_obj_cache/pv_obj_id_8A7F2883250B950EFE54587EE785726E169E2B00
PROFOR Program on Forests -The World Bank: The Poverty-Forest Linkages Toolkit	http://www.profor.info/content/livelihood_poverty.html

SECTION V: ADDITIONALITY

The Registry accepts only forest projects that demonstrate a discernable project action that is additional with respect to the project baseline. Additionality is a test intended to ensure that project offsets are “in addition to” reductions/removals that would have occurred without carbon market incentives. It is the metric by which a project demonstrates its results are a real and measurable reduction in atmospheric levels of GHGs. In essence, the question the additionality test seeks to answer is, was GHG emissions mitigation and/or carbon market incentives part of the rationale for project design and implementation?

A. General Requirements

The American Carbon Registry evaluates forest project start dates on a case-by-case basis. The table below describes the Registry’s approach in more detail.

B. Hybrid Approach

The demonstration of additionality can be difficult. No single test is best for all circumstances because projects may differ by type as well as by site-specific characteristics and anomalies. The Registry uses an approach that combines three key tests for determining project additionality, i.e., the “project ” approach. These three tests help the Registry to identify in particular whether realizing a GHG emissions reduction / removal goal was a reason, even if only one among many. Table 5 describes in more detail the three (3) tests under the “project additionality”, which are:

- Regulatory Surplus
- Common Practices
- Implementation Barriers

Table 5 - Hybrid Additionality Test

Test	Key Questions						
Regulatory Surplus	<p>Is there an existing law, regulation, statute, legal ruling, or other regulatory framework in effect now or as of the project start date that mandates the project or effectively requires the GHG emissions reductions?</p> <p style="text-align: center;">Yes = Fail; No = Pass</p>						
Common Practice	<p>In the field or industry/sector, is there widespread deployment of this project, technology, or practice within the relevant geographic area?</p> <p style="text-align: center;">Yes = Fail; No = Pass</p>						
Implementation Barriers	<p><i>Choose one (1) of the following three (3):</i></p> <table border="0" style="width: 100%;"> <tr> <td style="vertical-align: top; width: 15%;"><i>Financial</i></td> <td data-bbox="475 947 1346 1161"> <p>Does the project face capital constraints that carbon revenues can potentially address; <u>or</u> is carbon funding reasonably expected to incentivize the project’s implementation; <u>or</u> 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> </td> </tr> <tr> <td style="vertical-align: top;"><i>Technological</i></td> <td data-bbox="475 1161 1346 1339"> <p>Is a primary reason for implementation of the technology in question its GHG reduction capabilities or benefits, <u>and</u> is the reduction/removal of GHGs one of the goals of the project at the start date?</p> <p style="text-align: center;">Yes = Pass; No = Fail</p> </td> </tr> <tr> <td style="vertical-align: top;"><i>Institutional</i></td> <td data-bbox="475 1339 1346 1520"> <p>Does this project face significant organizational, cultural, or social barriers to GHG emissions reduction/sequestration that the accrual of benefits from a GHG emissions reduction/removal project action will help to overcome?</p> <p style="text-align: center;">Yes = Pass; No = Fail</p> </td> </tr> </table>	<i>Financial</i>	<p>Does the project face capital constraints that carbon revenues can potentially address; <u>or</u> is carbon funding reasonably expected to incentivize the project’s implementation; <u>or</u> 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>	<i>Technological</i>	<p>Is a primary reason for implementation of the technology in question its GHG reduction capabilities or benefits, <u>and</u> is the reduction/removal of GHGs one of the goals of the project at the start date?</p> <p style="text-align: center;">Yes = Pass; No = Fail</p>	<i>Institutional</i>	<p>Does this project face significant organizational, cultural, or social barriers to GHG emissions reduction/sequestration that the accrual of benefits from a GHG emissions reduction/removal project action will help to overcome?</p> <p style="text-align: center;">Yes = Pass; No = Fail</p>
<i>Financial</i>	<p>Does the project face capital constraints that carbon revenues can potentially address; <u>or</u> is carbon funding reasonably expected to incentivize the project’s implementation; <u>or</u> 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>						
<i>Technological</i>	<p>Is a primary reason for implementation of the technology in question its GHG reduction capabilities or benefits, <u>and</u> is the reduction/removal of GHGs one of the goals of the project at the start date?</p> <p style="text-align: center;">Yes = Pass; No = Fail</p>						
<i>Institutional</i>	<p>Does this project face significant organizational, cultural, or social barriers to GHG emissions reduction/sequestration that the accrual of benefits from a GHG emissions reduction/removal project action will help to overcome?</p> <p style="text-align: center;">Yes = Pass; No = Fail</p>						
<p><i>If the project passes the Regulatory Surplus and Common Practices tests, and at least one Implementation Barrier test (i.e., financial, technological, or institutional), REGISTRY considers the project additional.</i></p>							

C. Regulatory Surplus Test

The regulatory surplus test involves 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. These legal requirements may involve the use of a specific technology, meeting a certain standard of performance, or managing operations according to a certain set of criteria or practices (e.g., forest management practices). The Registry does not consider mandatory those voluntary agreements without an enforcement mechanism, proposed laws or regulations, or general government policies.

D. Common Practices Test

The common practices test represents the predominant technology(ies) implemented or industry practice(s) undertaken in a particular industry sector and/or geographic region, as determined by the degree to which those technologies/practices have penetrated the market (in a specific geographic area). The proposed offset project must reduce GHG emissions below levels produced by common practices technologies within a comparable environment (e.g., regulatory framework, investment climate, access to technology/financing, etc.).

The level of penetration that represents common practice may differ between sectors and geographic areas, depending on the diversity of baseline candidates. The common practice penetration rate or market share for a technology or practice may be quite low if there are many alternative technologies and practices. Conversely, the common practice penetration rate or market share may be quite high if there are few alternative technologies or practices. Projects that are “first-of-its-kind” are not common practice.

E. Implementation Barriers Test

An implementation barrier represents any factor or consideration that would prevent the adoption of such a practice/activity proposed by the project action. Baseline candidates each may face multiple barriers. 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, or the end of equipment’s useful lifetime. Under the implementation barriers test, Project Proponents shall choose at least one (1) among three (3) barrier assessments: i) financial, ii) technological, and iii) institutional. The Registry does not require passing all three (3) barriers. These are:

- *Financial* - Financial barriers can include high costs, limited access to capital, and high risks such as unproven technologies or business models, poor credit rating of project partners, and project failure risk.
- *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.

Box 1 - Project Approach vs. Performance Approach

The Registry may consider the “performance” approach in the future once there is an approved CDM, U.S. EPA or VCS methodology, or the Registry has developed its own methodology. The performance test would require that Project Proponents shall pass the regulatory surplus test and the emissions generated per unit output by the project shall be below the level defined as business-as-usual by the CDM, U.S. EPA, VCS or the American Carbon Registry for the product, service, sector or industry.

SECTION VI: ACCOUNTING REQUIREMENTS

A. Baselines

Below is a description of the different issues that arise depending on project type:

Baseline for AR

The AR baseline is the carbon stock present shortly prior to site preparation or the most likely carbon stock in the absence of project implementation. AR Project Proponents need to document that the project lands were not in forest use immediately prior to the project, and should provide at least qualitative evidence that the forest entity did not convert to non-forest use in order to implement an AR project. Demonstrating that the lands had been in non-forest use for several years is often sufficient to show that the forest entity did not convert from forest in order to prepare for an AR project. Trees may be present within the project boundary at the time of the start of the project; the Registry will only count sequestration of pre-existing trees as offsets if growth of the trees is also projected in the baseline. Project Proponents must quantify removal using forest management project accounting methods.

Baseline for IFM

IFM includes both avoided degradation projects and projects that increase carbon stocks in existing forests. The IFM baseline is the legally-permissible harvest that would maximize net present value of wood product harvest; the harvest schedule is the baseline management. Required inputs include the results of a recent timber inventory of the project lands; current published prices for wood products of grades that the project could produce; current costs of logging, reforestation and related costs; projections of changes in wood prices and logging costs (in real terms), and carrying costs.

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Project Proponents shall include roading and harvesting costs as appropriate to the terrain and unit size. Project Proponents should model growth of existing forest stands. Project Proponents should use an optimization program that calculates the maximum net present value for the harvesting schedule. The discount rate for modeling shall be 4% per year, in real (without inflation) terms. Project Proponents should calculate and include decomposition of logging slash, stumps and roots in the baseline.

Wood products must be accounted.

Baseline for REDD

A differentiation exists for REDD projects between planned legally sanctioned deforestation and illegal unsanctioned deforestation. Planned deforestation can be directly calculated while unplanned deforestation must be modeled.

To determine the appropriate scale for setting a baseline for a REDD project, consider the cause of deforestation that the project will address. Then consider the geographic range over which that activity is occurring. The scale might be the entire country. The goal is to determine emissions from deforestation that have occurred across the entire area in which the project might have an effect.

Avoiding deforestation or forest degradation generally displaces some use of the forest, often clearing of land for market or subsistence agriculture, or for developed uses such as buildings and roads. Typically, deforestation is not the result of removal of wood for wood products, but it is possible for timber harvest to facilitate conversion to non-forest vegetation. Utilization of wood products may be ancillary to deforestation. Project Proponents must count in avoided deforestation project baselines the carbon stored in wood products. Excluding carbon stored in wood products would set baseline emissions too high, estimating more credits than justified.

B. Leakage Issues

AR Leakage Issues

If the AR project displaces people from project lands, the Project Proponent shall survey a sample of displaced people and their activities in order to determine whether they have shifted their activities 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, the Registry assumes that displaced people are continuing their pre-project activities on other locations.

In terms of market-leakage and a decrease in supply of emitting goods, given uncertainty about the accuracy of econometric modeling, the Registry does not apply modeled market leakage rates. If there are multiple, peer-reviewed studies on market leakage rates that establish certainty within the forestry industry, the Registry may choose to validate a methodology and adopt those leakage rates.

In terms of market-leakage and an increase in supply of emitting goods, *and* given uncertainty about what constitute a carbon emitting good that a forest project might generate, the Registry does not apply modeled market leakage rates to this category of leakage. If there are multiple, peer-reviewed studies on market leakage rates that establish certainty within the forestry industry, the Registry may choose to validate a methodology and adopt those leakage rates.

IFM Leakage Issues

The Registry will register only those offsets from IFM projects that can account for leakage pursuant to this standard, as included in the GHG Project Plan or MRV Project Protocol, and based on CDM and VCS methodologies as appropriate. The Registry reserves the right to assess on a case-by-case basis.

If a forest management project, over time, 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, the Registry will not assign leakage to forest management projects that maintain wood production. If a forest management project decreases harvesting, then the Project Proponent must quantify the leakage. If a forest management project reduces production of wood products, averaged over the life of the project, the Registry will apply to the project leakage provisions for reduced timber production in the project area.

REDD Leakage Issues

The Registry will register only those offsets from REDD projects that can account for leakage pursuant to this standard, as included in the GHG Project Plan or MRV Project Protocol, and based on CDM and VCS methodologies as appropriate. The Registry reserves the right to assess on a case-by-case basis.

To establish and quantify REDD projects, the Project Proponent must first establish the cause of the deforestation. The most reliable approach to quantifying leakage from an avoided deforestation project is to track change in national carbon stocks over time. Second, is to 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. A Project Proponent must seek to displace production of market goods to a location suitable for production. Thus, if a project does not replace the entire displaced supply, it should monitor the entire portion of the country that is suitable for production of the displaced good.

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The Registry will register sub-national scale avoided deforestation projects if they satisfy demands displaced by the project activity. For example, if the underlying reason for deforestation is to provide subsistence agriculture, the Project Proponent must establish alternative sources of income for local subsistence farmers. If a project intends to reduce deforestation for market agriculture, the most reliable approach to avoiding leakage is to calculate the production that would have occurred if the Project Proponent deforested the land, and provide that amount of new production on forested lands to provide the same level of production.

C. Buffer Pool

The Registry requires that the Project Proponent shall contribute an adequate number of offsets to the buffer pool that is commensurate with its risk of reversal to cover unforeseen losses in carbon stocks. The basis for the number of buffer offsets that a Project Proponent shall deposit in the Registry buffer pool is a case-by-case assessment of a project's potential for future carbon loss. The Registry requires the verifier to evaluate the project's risk and adjust it as appropriate, if necessary, before confirming the project's required buffer values. The buffer must be high enough to cover the project's risk.

The Registry has sole management and operational control over the offsets in the buffer pool. Project Proponents shall use the VCS buffer tool: <http://www.v-c-s.org/docs/Tool%20for%20AFOLU%20Non-Permanence%20Risk%20Analysis%20and%20Buffer%20Determination.pdf>

D. Annual Qualitative Review

Each year the Registry conducts a qualitative review of each GHG project. Project Proponents shall submit (along with all other documents necessary, and as defined by

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the Registry) a signed Attestation Letter that addresses the project action, additionality, ownership, permanence, and socio-economic and environmental impacts.

A key purpose is to ensure that the Project Proponent is maintaining the project action. Another purpose is to ensure that there is no undisclosed, significant change in external conditions that would affect the quality of a GHG project or a GHG inventory in an adverse way that would affect its environmental integrity. If at any time during the course of the project the project activity changes, the project may be subject to termination and the project's offsets subject to cancellation. The Project Proponent will need to establish a new project based on the requirements for that project type, undergo the standard project verification, and offset registration process.

The Registry schedules the first Qualitative Review three months after the one year anniversary of the Registry issuance and deposit of ERTs in the Project Proponent's account. The Registry conducts a desktop review of the Attestation Letter and if there are no issues or questions, the Registry will re-certify the project as eligible for twelve (12) subsequent months, continue listing the project as registered, and issue new offsets generated by the project for the twelve (12) months.

E. Crediting Period Renewal

The Registry requires for all forest carbon projects a verification renewal at the end of every fifth (5th) calendar year after observation of initial project conditions, and subsequently at regular five-year intervals. The verification renewal includes a re-measuring, an updated assessment of risk of reversal, and an updated buffer determination. For example, if there is a tree measurement in June 2010, a calculation of carbon stocks in August 2010 and an offset verification in September 2010, the Registry will consider the forest offsets as valid through the end of December 2015. Verification renewal can demonstrate the project's longevity and through subsequent

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verification renewals, some risks may decline. The Project Proponent shall comply with all other requirements for crediting period renewal as described in the *American Carbon Registry Standard* (2009).

Table 6 illustrates how the Registry would reduce the buffer value (i.e., the amount of offsets the project contributes to the buffer) over time for a project starting with, for example, a 20% buffer. The Registry will review every five years the minimum project buffer values to ensure that a positive, safe, and balanced buffer pool exists for the Registry’s forest project offsets portfolio at all times. The total number of carbon offsets that a project generates will always be greater than the total number of tradable offsets that the Registry issues for the project.

The GHG Project Plan or MRV Project Protocol shall be the ultimate arbiter of the buffer’s structure, provided that structure conforms to Registry standards, and is subject to a case-by-case review by the American Carbon Registry.

Table 6—Buffer Values Over Time

Years since initial project verification	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70
	First Crediting Period							Second Crediting Period							
Total buffer (% from project’s total offsets)	20.0	17.0	14.5	12.3	10.4	8.9	7.5	6.4	5.4	4.6	3.9	3.3	2.8	2.4	2.1

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) 14064-1:2006(E) - Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal.

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 (U.S. EPA), Climate Leader Program, GHG Inventory Protocol (May 2005).

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

Forest Carbon Project Standard

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

World Resources Institute and World Business Council for Sustainable Development (WRI/WBCSD), Greenhouse Gas Protocol Initiative, *The GHG protocol for corporate accounting* (May 2005). <http://www.ghgprotocol.org/standards/corporate-standard>

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



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