



Program Manual

October 26, 2011

CLIMATE
ACTION
RESERVE



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Climate Action Reserve Program Manual

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1 Introduction

The voluntary carbon market has the potential to significantly facilitate efforts to reduce greenhouse gases in the atmosphere and to help mitigate climate change. At the same time, there has been a great need for increased environmental integrity, transparency, rigor, and accuracy in this market. The Climate Action Reserve (Reserve) was created to meet this need by providing a rigorous set of protocols, guidelines, and tools to support the voluntary carbon market. The Reserve is intended to increase certainty and build confidence in the greenhouse gas (GHG) reduction market on the part of investors, project developers, the environmental community, and the public.

This Program Manual summarizes the Reserve's overarching principles, its general project accounting guidelines, and its rules and procedures for registering projects and creating offset credits. It also describes the process used by the Reserve to develop protocols for determining the eligibility of, and quantifying reductions from, carbon offset projects.

Detailed information on the Reserve's general operating procedures and verification program can be found in the following documents:

- Climate Action Reserve Operating Procedures
<http://www.climateactionreserve.org/open-an-account/>
- Climate Action Reserve Terms of Use
<http://www.climateactionreserve.org/open-an-account/>
- Climate Action Reserve Verification Program Manual
<http://www.climateactionreserve.org/how/program/program-manual/>

1.1 The Climate Action Reserve

The Climate Action Reserve is a national offsets program working to ensure integrity, transparency, and financial value in the U.S. carbon market. It does this by establishing regulatory-quality standards for the development, quantification, and verification of GHG emission reduction projects in North America; issuing carbon offset credits known as Climate Reserve Tonnes (CRTs) generated from such projects; and tracking the transaction of credits over time in a transparent, publicly-accessible system. Adherence to the Reserve's high standards ensures that emission reductions associated with projects are real, permanent, and additional, thereby instilling confidence in the environmental benefit, credibility, and efficiency of the U.S. carbon market.

At the heart of the Reserve is a publicly accessible web-based system where owners and developers of carbon offset projects can register project information along with verification reports demonstrating GHG emission reductions. Emission reductions are verified as CRTs, which provide title assurance and unique serial number identifiers to assure that each metric ton is counted and retired only once.

The Reserve uses a rigorous, open, and comprehensive process for developing all of its protocols. The Reserve's primary focus is on accurate and conservative GHG accounting to ensure that the emission reductions it certifies are real, permanent, additional, verifiable, and enforceable. Notwithstanding the rigor of the Reserve's requirements, CRTs are not currently recognized as valid for compliance in any government-run trading program or regulatory

system. Only the government authorities in charge of designing such systems can decide whether CRTs will be recognized for compliance purposes in the future.

1.2 Reserve Program Principles

The Reserve's program rules and procedures, eligibility criteria, and quantification and verification protocols are designed to ensure that GHG emission reductions certified by the Reserve are:

- **Real:** Estimated GHG reductions should not be an artifact of incomplete or inaccurate emissions accounting. Methods for quantifying emission reductions should be conservative to avoid overstating a project's effects. The effects of a project on GHG emissions must be comprehensively accounted for, including unintended effects (often referred to as "leakage").
- **Additional:** GHG reductions must be additional to any that would have occurred in the absence of the Climate Action Reserve, or of a market for GHG reductions generally. "Business as usual" reductions – i.e., those that would occur in the absence of a GHG-reduction market – should not be eligible for registration.
- **Permanent:** In order to function as offsets to GHG emissions, GHG reductions must effectively be "permanent." This means, in general, that any net reversal in GHG reductions used to offset emissions must be fully accounted for and compensated through the achievement of additional reductions.
- **Verified:** GHG reductions must result from activities that have been verified on an *ex post* basis. Verification requires third-party review of monitoring data for a project to ensure the data are complete and accurate.
- **Owned Unambiguously:** No parties other than the registered project developer must be able to reasonably claim ownership of the GHG reductions.

In addition, the Reserve strives to ensure that the offset projects it registers are **not harmful**. Project activities should not cause or contribute to negative social, economic or environmental outcomes and ideally should result in benefits beyond climate change mitigation.

Finally, the Reserve strives for **practicality**, by integrating rigorous requirements with time- and cost-minimizing steps for project developers. Practicality involves alleviating potential barriers to GHG project implementation without compromising credibility.

2 Program Level GHG Reduction Accounting Guidelines

The Reserve develops protocols specifying eligibility criteria and detailing steps to estimate, monitor, and verify GHG reductions achieved by specific types of projects. While each project protocol contains guidance specific to individual project types, Reserve protocols also adhere to general project accounting principles. This section describes the Reserve's standardized project accounting guidelines that are the foundation for all project protocols.

2.1 General Approach, Principles, and References

The Reserve strives to develop protocols that are "standardized" in nature, meaning they apply standardized factors and eligibility rules to the extent possible while maintaining sufficient rigor and accuracy. In addition, the form and content of Reserve protocols follow internationally established accounting principles and standards.

2.1.1 Standardized Offset Crediting

A core objective of the Climate Action Reserve is to adopt "standardized" approaches to offset crediting. Standardized offset crediting has two main elements:¹

1. Determining the eligibility and additionality of projects using standard criteria, rather than project-specific assessments.
2. Quantifying GHG emission reductions using standard baseline assumptions, emission factors, and monitoring methods.

The main goal of standardized offset crediting is to minimize the subjective judgment required in evaluating whether a project should receive credit for emission reductions, and in determining how much credit it should receive. Compared to project-specific assessment and analysis, standardized crediting reduces transaction costs for project developers, alleviates uncertainties for investors, and increases the transparency of project approval and verification decisions. Furthermore, the Reserve believes that appropriately designed standardized protocols can be as rigorous as project-specific approaches in ensuring additionality and environmental integrity (see Section 2.4.1 below for further discussion of standardized additionality tests).

Three challenges with standardized crediting are worth noting. First, developing standardized methods for determining additionality and estimating baselines requires significant upfront research and analysis. In order to avoid the need for extensive data collection and analysis on a project-by-project basis, the Reserve invests significant time and resources to establish credible benchmarks and emission factors that can be applied to similar projects throughout an entire industry or sector. The Reserve may frequently build off existing project-specific methodologies, but in general will augment these methodologies with further analysis to establish standardized tests and metrics.

Second, because "business as usual" activities can vary significantly across different geographic areas, standardized benchmarks and factors for one region will not necessarily be appropriate for other regions. Therefore, standardized protocols will almost always apply to a specific, limited geographic area. Every Reserve protocol specifies the geographic region(s) to which it applies. In adapting protocols for other geographic regions, the Reserve engages in a

¹ For further reference, see Broekhoff, D., 2007. *Expanding Global Emissions Trading: Prospects for Standardized Carbon Offset Crediting*. International Emissions Trading Association, Geneva.

full stakeholder process designed to assess and incorporate region-specific benchmarks and factors.

Third, not all possible offset project types are equally amenable to standardized crediting.² For some types of projects, determining additionality and estimating baseline emissions cannot be done credibly and accurately on a standardized basis. In general, the Reserve will avoid developing protocols for these project types. Alternatively, the Reserve may incorporate project-specific methods or variables into standardized protocols as appropriate, or limit the scope of protocols to address only activities and conditions for which standardized approaches are feasible.

2.1.2 Reference Standards

The Reserve's offset project protocols are designed to be consistent with the principles, requirements, and guidance of two overarching standards for project-based GHG accounting:³

- International Organization for Standardization (ISO) 14064, Part 2
- The World Resources Institute/World Business Council for Sustainable Development (WRI/WBCSD) Greenhouse Gas Protocol for Project Accounting

Both standards contain consistent general requirements for quantifying reductions in GHG emissions (or increases in carbon sequestration) that result from project-based activities, including requirements for:

1. Establishing GHG accounting boundaries
2. Estimating baseline emissions
3. Determining project-case emissions
4. Monitoring project activities

Although the ISO and WRI/WBCSD standards are largely consistent in their basic requirements, they have different terminologies and structures. Reserve protocols may utilize terminology from either or both standards depending on circumstances. The structure and general content of Reserve protocols are presented in the remainder of this section.

2.2 GHG Accounting Principles

There is now strong international consensus around a core standard set of overarching principles to guide decisions about the accounting, quantification, and reporting of project-based GHG reductions. These consensus principles are listed and defined in both the ISO and WRI/WBCSD standard referenced above. Definitions of these principles differ slightly between the two standards; the Reserve interprets the principles as follows in developing its protocols:

- **Relevance:** Data, methods, criteria, assumptions, and accounting boundaries should be chosen based on their "intended use." For the Reserve, this means protocols are

² Ibid.

³ International Organization for Standardization, 2005. *ISO 14064, Part 2: "Specification with guidance at the project level for quantification, monitoring, and reporting of greenhouse gas emission reductions or removal enhancements."* International Organization for Standardization, Geneva, Switzerland; World Resources Institute and World Business Council for Sustainable Development, 2005. *The GHG Protocol for Project Accounting*, World Resources Institute, Washington, DC.

designed around standardized, practical approaches to GHG accounting while still adhering to other core accounting principles.

- **Completeness:** All relevant information should be considered when developing criteria and procedures, and all relevant GHG emissions and removals should be accounted for. Reserve protocols comprehensively identify the GHG sources, sinks, and reservoirs affected by project activities and require accounting for all significant changes in GHG emissions or removals that may result from a project. Where there are multiple baseline possibilities, protocols must thoroughly address identification and quantification methods for each possibility.
- **Consistency:** Data, methods, criteria, and assumptions should allow meaningful and valid comparisons of the GHG reductions achieved by different projects. Reserve protocols are standardized to apply consistent GHG accounting and monitoring methods to all projects of the same type. Reserve protocols are also designed to reflect similarly rigorous and conservative accounting methods and assumptions for all project types.
- **Transparency:** Sufficient information should be disclosed to allow reviewers and stakeholders to make decisions about the credibility and reliability of GHG reduction claims with reasonable confidence. Access to sufficient and appropriate GHG-related information is critical for assuring users of the Reserve that a project's GHG reduction claims are credible. To this end, the Reserve uses an open, consultative process for developing protocols; makes protocols publicly available; requires regular, rigorous, and complete reporting from registered projects; and provides a publicly accessible database detailing all relevant information used to quantify GHG reductions for each registered project. In addition, the Reserve's standardized protocols reduce ambiguities associated with how project-related information is interpreted.
- **Accuracy:** Uncertainties and bias should be reduced as far as is practical. Greater accuracy in estimating GHG emissions and reductions will help ensure credibility of GHG reduction claims. Reserve protocols require that quantification of GHG reductions and monitoring of GHG emissions and other variables be conducted within acceptable levels of uncertainty. All GHG reduction estimates must pass rigorous review by an independent verification body. Where accuracy is difficult to achieve, Reserve protocols will err on the side of being conservative with GHG reduction estimates.
- **Conservativeness:** Conservative assumptions, values, and procedures should be used to ensure that GHG reductions are not over-estimated. Reserve protocols employ conservative estimation methods whenever data and assumptions are uncertain and measures to reduce uncertainty would be impractical.

2.3 Project Definition

A GHG project is a specific activity or set of activities intended to reduce GHG emissions, increase the storage of carbon or enhance GHG removals from the atmosphere.⁴ A GHG project is considered to be a "carbon offset" project if the GHG reductions or removals it generates are used to compensate for GHG emissions occurring elsewhere.⁵ Projects that meet the Reserve's standards are issued emission reduction or removal credits, and those credits act as offsets when they are certified and retired in the Reserve's online registry. The Reserve's primary purpose is to certify GHG reductions as carbon offsets.

⁴ World Resources Institute (WRI), World Business Council for Sustainable Development (WBCSD), 2005. *The GHG Protocol for Project Accounting*. World Resources Institute, Washington, D.C.

⁵ Offset Quality Initiative, 2008. *Ensuring Offset Quality: Integrating High Quality Greenhouse Gas Offsets Into North American Cap-and-Trade Policy*. Available at: <http://www.offsetqualityinitiative.org/>.

Every Reserve protocol clearly defines the type of activity (or activities) that constitute a GHG reduction project. A clear project definition ensures that GHG quantification methods prescribed by the protocol are applied only where they are relevant and appropriate. The “project definition” section of each protocol specifies the kinds of activities that must be undertaken to reduce GHG emissions (or increase removals), the required conditions that must be met for these activities, and the necessary elements of project design and implementation.

2.3.1 Project Types

The Reserve only registers GHG projects that follow project protocols that have been developed by the Reserve. In other words, only projects meeting the requirements of project protocols that have been approved and adopted by the Reserve’s Board are eligible for registration on the Reserve. The Reserve may establish linkages with additional programs in the future to allow other projects to be registered.

Approved project protocols and information on additional project protocols in development are available for download at <http://www.climateactionreserve.org/how/protocols/>.

2.4 Project Eligibility Criteria

Eligibility criteria specify essential characteristics a project must have in order to register with the Reserve, as well as the conditions under which the Reserve will issue CRTs to a project. In Reserve protocols, eligibility criteria serve three main purposes:

1. To ensure that baseline estimation methods and emission factors prescribed by the protocol are relevant and appropriate. Reserve protocols use standardized baseline estimation methods that are calibrated to specific geographic regions; to be eligible, projects must be located in an appropriate geographic region.
2. To ensure that projects are “additional.” To test for additionality, the Reserve employs objective criteria designed to distinguish additional projects from those that would have happened anyway (i.e., in the absence of an offset market). These criteria fall into two categories: (1) a legal requirement test, and (2) a performance standard test. These tests are explained and described further below.
3. To ensure that projects adhere to all applicable laws and do not cause adverse environmental, social or economic impacts.

Generally, the Reserve seeks to specify eligibility criteria that are as standardized and objective as possible. This means that criteria will be designed to require a minimum amount of subjective judgment in determining whether a project is eligible.

2.4.1 Additionality Determinations

Within existing carbon offset programs, there are two basic approaches to determining “additionality”: project-specific and standardized. The Reserve applies a standardized approach to determining additionality, where performance standards and other conditions or criteria that projects must meet in order to be considered additional are determined by the Reserve. These standards and criteria are established separately for each project type, and are designed to exclude non-additional (or “business as usual”) projects from eligibility. In all cases, projects that are required by law or regulation are excluded. Other criteria and conditions are specified in each project protocol.

This approach differs from some other offset programs, where additionality is assessed using information and analysis specific to each project (see Box 1). It avoids the need to subjectively interpret individual project developers' assertions about additionality, and sends a clear signal to market participants about which projects will be eligible and which ones will not. Like any testing method, however, it is potentially subject to error. The Reserve strives to establish rigorous standards for additionality that serve to exclude the vast majority of non-additional projects. At the same time, the Reserve acknowledges that no system of testing for additionality is perfect, and it reserves the right to update and modify additionality criteria over time in light of new data and information.

Box 1. Project-Specific vs. Standardized Additionality Tests

Project-specific approaches to determining additionality seek to assess, by weighing certain kinds of evidence, whether a project in fact differs from a hypothetical baseline scenario in which there is no carbon offset market. Generally, a project and its possible alternatives are subjected to a comparative analysis of their implementation barriers and/or expected benefits (e.g., financial returns). If an option other than the project itself is identified as the most likely alternative for the "business as usual" (or "baseline") scenario, the project is considered additional. The Kyoto Protocol's Clean Development Mechanism (CDM), a global carbon offset program for projects in developing countries, requires project-specific additionality tests.

Standardized, or performance-based, approaches to additionality evaluate projects against a consistent set of criteria designed to exclude non-additional projects and include additional ones on a sector-wide basis. For example, standardized tests could involve determinations that a project:

- Is not mandated by law
- Exceeds common practice
- Involves a particular type of high-performing technology
- Has an emission rate lower than most others in its class (e.g., relative to a performance standard)

From a regulatory perspective, standardized performance-based additionality tests are advantageous in that they are less subjective and administratively easier to implement than project-specific tests. Additionally, they can reduce transaction costs for project developers, alleviate uncertainties for investors, and increase the transparency and consistency of regulatory decisions. For further discussion of these two approaches, see Broekhoff, D., 2007. *Expanding Global Emissions Trading: Prospects for Standardized Carbon Offset Crediting*. International Emissions Trading Association, Geneva.

The Reserve incorporates standardized additionality tests in all of its protocols. These tests generally have two components: a legal requirement test and a performance standard test.

2.4.1.1 Legal Requirement Test

Projects are very likely to be non-additional if their implementation is required by law. A legal requirement test ensures that eligible projects (and/or the GHG reductions they achieve) would not have occurred anyway in order to comply with federal, state or local regulations, or other legally binding mandates. A project passes the legal requirement test when there are no laws, statutes, regulations, court orders, environmental mitigation agreements, permitting conditions or other legally binding mandates requiring its implementation, or requiring the implementation of similar measures that would achieve equivalent levels of GHG emission reductions.

In Reserve protocols, the specific provisions of the legal requirement test may differ depending on the project type. During protocol development, the Reserve performs a review of existing and pending regulations to identify any specific regulatory requirements that would mandate the implementation of project activities covered by the protocol. If such requirements are identified, then project activities in relevant jurisdictions may be categorically excluded from eligibility.

In addition, Reserve protocols require project developers to review and determine whether federal, state or local regulations and other legal requirements (including local agency ordinances or rulings) require the implementation of their project. This review is always required at the time a project is registered and may be required each verification period thereafter depending on the protocol. Generally, Reserve protocols will stipulate the following:

- Project monitoring plans must include procedures that the project developer will follow to periodically ascertain and demonstrate that the project passes the legal requirement test.
- Project developers must submit a signed Attestation of Voluntary Implementation form stipulating that the project is not required by law.

2.4.1.2 Performance Standard Test

Projects that are not legally required may still be non-additional if they would have been implemented for other reasons, e.g., because they are attractive investments irrespective of carbon offset revenues. Performance standard tests are intended to screen out this potential set of projects. In developing performance standards, the Reserve considers financial, economic, social, and technological drivers that may affect decisions to undertake a particular project activity. Standards are specified such that the large majority of projects that meet the standard are unlikely to have been implemented due to these other drivers. In other words, incentives created by the carbon market are likely to have played a critical role in decisions to implement projects that meet the performance standard.

Although performance standard tests do not require individual project assessments of financial returns and implementation barriers, they are designed to reflect these factors in determining which projects are additional. Projects that pass a performance standard test should be those that – in the absence of a carbon offset market – would have insufficient financial returns or would face other types of insurmountable implementation barriers.

In Reserve protocols, performance standards may be specified in several ways:

- *Emission rate thresholds.* For some project types, a performance standard may be specified in terms of a rate of GHG emissions (usually per unit of production of some product or service, e.g., tonnes of CO₂ per megawatt-hour). Generally, the threshold rate would be based on a level of performance that is significantly better than average for the industry or sector. Projects that have lower emission rates than the threshold, for example, would be considered additional.
- *Practice- or technology-based thresholds.* Performance standards may also be specified in terms of a specific practice or technology that is rarely or never implemented in the absence of a carbon offset market. Such standards are generally based on surveys of the market penetration rates of candidate practices or technologies. Projects employing a qualifying technology or practice are automatically considered additional.
- *Other qualifying conditions or criteria.* Performance standards may also incorporate, or be based on, other specific qualifying conditions that a project must meet in order to be

considered eligible. Conditions may include characteristics related to the project site, specifications for a particular eligible technology or practice, or other contextual factors. Projects meeting the conditions would be considered additional.

Several specifications may be combined in a single performance standard test. For example, a protocol may define a performance standard in terms of a specific type of technology that has an emission rate below a certain threshold and is implemented at an eligible project location.

Performance standard tests are developed through extensive analysis of standard practices and technology deployment in industry sectors related to a project type. They may also be based on an assessment of “typical” financial, implementation, and operating conditions facing a certain type of project. Most Reserve protocols contain an appendix explaining and summarizing the analyses undertaken to establish the protocol’s performance standard.

The Reserve has no predefined threshold for determining an acceptable performance standard. Rather, establishing performance standards involves balancing the need to restrict eligibility for non-additional projects with the goal of allowing additional (and otherwise eligible) projects to participate. Setting a threshold always involves making tradeoffs between these two goals, and may also involve considerations about the size of the market for carbon credits and the potential supply of reductions available from certain project types.⁶ See Box 2 for further discussion and a hypothetical example.

Box 2. Determining Acceptable Performance Standard Thresholds

A common rule of thumb for establishing performance standards is that they should make eligible only technologies or practices that are not “common practice.” However, “common practice” is often difficult to define. Instead of adopting a simple rule for defining “common practice” (as a threshold market penetration rate, for example) the Reserve requires setting performance standards based on an overall assessment of the market for GHG reductions and the risk of crediting too many non-additional reductions.

For example, suppose a particular emission-reducing technology has a market penetration rate of five percent. Colloquially, such a technology would not be considered “common practice.” However, if a threshold were established allowing all instances of this technology to be eligible for offset crediting, we could expect existing users of the technology to apply for credit despite the fact that they were employing it already, without any incentives from the carbon market. This will have consequences for the integrity of the carbon market. Whether such consequences are serious depends on the potential supply of reductions from this technology compared to overall demand for reductions. If five percent of the market would result in hundreds of millions of tonnes of GHG reductions, for example, then a simple technology-based threshold would be too lenient, and the Reserve would explore using additional criteria that could further exclude “business as usual” instances of the technology despite its relative rarity. If five percent of the market would result in only a few thousand tonnes of GHG reductions, then the Reserve may consider a simple technology-based threshold acceptable.

⁶ For further discussion of setting thresholds and establishing the parameters for additionality tests, see Trexler, M., D. Broekhoff, and L. Kosloff, 2006. “A Statistically-Driven Approach to Offset-Based GHG Additionality Determinations: What Can We Learn?” in *Sustainable Development Law & Policy*, Volume VI, Issue 2, Winter 2006.

2.4.2 Project Location

Projects throughout the United States are eligible to be registered with the Reserve. Some project types are also eligible in Mexico. Project developers should check the project location eligibility requirements specified in each project protocol.

2.4.3 Project Start Date

In general, the start date for a project will correspond to the start of the activity that generates GHG reductions (sometimes referred to as “start of operations”). Specific requirements for determining the start date of a project are contained in each protocol.

The Reserve limits the eligibility of projects according to their start dates. Start date restrictions are intended to accommodate “early actors” for a period of time following the adoption of new protocols, but to otherwise restrict eligibility to new projects. The Reserve’s general policy is as follows:

1. For qualifying projects that have not previously been listed or registered on a greenhouse gas registry or program:
 - a. For a period of 12 months following the adoption by the Reserve Board of any new protocol, the Reserve will accept projects for listing with start dates (as defined in the protocol) that are no more than 24 months earlier than the date of the Reserve protocol’s adoption.
 - b. After the 12-month period following the date of the Reserve protocol’s adoption, the Reserve will accept projects for listing with start dates (as defined in the protocol) that are no more than 6 months prior to the date on which they are submitted. A project submitted within 6 months of its start date is considered a “new” project.
2. For qualifying projects that have previously been listed or registered on a greenhouse gas registry or program:
 - a. Projects with start dates (as defined in a relevant Reserve protocol) on or after January 1, 2001 but more than 24 months earlier than the date of adoption of a relevant new Reserve protocol – and which were listed or registered with another registry or program at least 24 months earlier than the date of adoption of the new Reserve protocol – may apply for transfer to the Reserve.
 - b. Projects with start dates (as defined in a relevant Reserve protocol) that are no more than 24 months before and no more than 12 months after the date of adoption of a relevant new Reserve protocol – and that were listed or registered with another registry or program no more than 12 months after the date of adoption of the new Reserve protocol – may apply for transfer to the Reserve.
 - c. Projects with start dates (as defined in a relevant Reserve protocol) that are more than 12 months after the date of adoption of a relevant new Reserve protocol, and that were listed or registered with another registry or program within 6 months of the project start date, may apply for transfer to the Reserve.

The Reserve considers a protocol to be “new” if it:

- Covers an entirely new project type not covered by any of the Reserve's existing protocols;
- Creates a wholly new category of eligible projects under an existing protocol (in which case only the new project category would qualify for a 12-month period of "early actor" eligibility); or
- Significantly expands the geographic coverage of the protocol (in which case only projects in newly covered geographic areas would qualify for a 12-month period of "early actor" eligibility).

If a new version of a protocol is adopted (e.g., updating from Version 1.0 to Version 2.0), this does not necessarily mean it will be considered a "new" protocol.

2.4.4 Project Crediting Period

The project "crediting period" defines the period of time over which a project's GHG reductions are eligible to be verified as CRTs. In general, the start of a project's crediting period will correspond to its start date.

The length of a project's crediting period is defined in each project protocol. For most non-sequestration projects registered with the Reserve, there is a 10-year crediting period that may be renewed one time for a maximum of two 10-year crediting periods. For sequestration projects, the crediting period may be up to 100 years. Refer to each project protocol for specific details on allowable crediting periods. Note that projects registered under early protocol versions that do not have provisions for a second crediting period can apply for one under the most current version of the protocol, if the most current version allows for a second crediting period.

Notwithstanding any pre-defined crediting period, projects that become required by law will not be eligible to receive CRTs for the reductions they generate, unless otherwise specified in the protocol. Thus, in most cases, if a project becomes subject to a regulation, ordinance or permitting condition that effectively requires its implementation, the project can no longer be considered additional and its crediting period will be terminated. The crediting period will likewise be terminated if the emission sources affected by a project are included under an emissions cap (e.g., under a state or federal cap-and-trade program) or GHG emissions from the project/project site are directly regulated by a local, state or federal agency. As specified in each protocol, emission reductions may be reported to the Reserve until the date that a regulation or emissions cap takes effect.

Details on the allowable crediting period for each type of project recognized by the Reserve are contained in each protocol.

Once a project has reached the end of its crediting period(s) and is no longer being issued CRTs, the project is considered "completed." Although the project is completed, project information remains publicly available through the Reserve software indefinitely.

2.4.5 Bundling/Aggregation of Projects

Only certain types of Reserve-recognized GHG projects may be aggregated for registration and reporting purposes. Generally, each GHG project, as defined by the project definition and/or project boundary (described in each protocol), must register separately with the Reserve. However, protocols for certain project types may allow project boundaries to span multiple

activities or locations. For example, the Livestock Project Protocol covers centralized manure digesters by allowing the project boundary to include all individual livestock operations that contribute manure to the centralized processing facility, as well as the centralized facility itself. The Reserve has also developed aggregation guidelines for small-scale forest projects, which allow forest inventory and verification requirements to be streamlined for individual projects.

Project developers should check specific project protocols and associated guidance documents for direction on whether and how aggregation is allowed.

2.4.6 Regulatory Compliance, Co-Benefits, and Other Impacts

The Reserve requires project developers to demonstrate that their GHG projects will not undermine progress on other environmental issues such as air and water quality, endangered species and natural resource protection, and environmental justice. When registering a project, the project developer must attest that the project is in compliance with all applicable laws, including environmental regulations. The project developer is also required to disclose any and all instances of non-compliance of the project with any law to the Reserve and the verification body. If the project is in a state of recurrent non-compliance or non-compliance that is the result of negligence or intent, then CRTs will not be issued for project activities that occurred during the period of non-compliance.

In addition, individual protocols may contain requirements designed specifically to ensure environmental and social safeguards. Individual protocols may allow for project developers to report measures taken to avoid negative impacts. Individual protocols may also encourage GHG project developers to report on the potential environmental co-benefits of their projects, such as reductions in other air pollutants, improvements in water quality, enhancement of wildlife habitat, etc.

The Reserve coordinates with government agencies and environmental representatives to ensure that its climate-oriented projects complement other environmental policies and programs.

2.5 Defining the GHG Assessment Boundary

The GHG Assessment Boundary delineates the GHG sources, sinks, and reservoirs (SSRs)⁷ that must be assessed in order to determine the total net change in GHG emissions caused by a GHG reduction project.⁸ GHG Assessment Boundaries are defined for each type of project activity addressed in a Reserve protocol.

The GHG Assessment Boundary is not a boundary related to a project's physical location. Instead, it encompasses all SSRs that could be significantly affected by a project activity, regardless of where such SSRs are located or who owns or controls them. A comprehensive and clearly defined GHG Assessment Boundary is required in order to provide a complete accounting of the net GHG reductions achieved by a project. All SSRs within the GHG Assessment Boundary are included in the calculation of GHG reductions.

⁷ Terminology is from International Organization for Standardization, 2005. *ISO 14064, Part 2: "Specification with guidance at the project level for quantification, monitoring, and reporting of greenhouse gas emission reductions or removal enhancements."* International Organization for Standardization, Geneva, Switzerland.

⁸ See World Resources Institute and World Business Council for Sustainable Development, 2005. *The GHG Protocol for Project Accounting*, World Resources Institute, Washington, DC.

SSRs are only included in the GHG Assessment Boundary if a project activity will have a *significant* effect on their associated GHG emissions or removals. The Reserve determines significance based on an assessment of the range of possible outcomes for a relevant SSR. There is no numerical threshold for significance. Inclusion or exclusion of SSRs is determined for each protocol based on the principles of completeness, accuracy, and conservativeness, and the need for practicality (e.g., related to measurement and monitoring costs). In general, relevant SSRs will only be excluded from the GHG Assessment Boundary if:

1. Projects are likely to reduce GHG emissions (or increase removals) at a SSR, so that excluding the SSR would be conservative (i.e., doing so would result in an underestimation of total net GHG reductions for the project); or
2. The total increase in GHG emissions from *all* excluded SSRs is likely to be less than five percent of the total GHG reductions achieved by a project.⁹

For each included SSR, the protocols:

- Identify whether the SSR is present in the baseline, project case or both
- Identify whether and how GHG emissions, removals or storage from the SSR will be measured, calculated or estimated
- If GHG emissions, removals or storage will be estimated, justify why values will be estimated rather than measured (or calculated from other measurements)

Each protocol contains a table that:

- Lists all SSRs potentially affected by a project
- Explains or describes the SSR
- Indicates whether each SSR is included in the GHG Assessment Boundary
- Justifies instances where an SSR is excluded from the GHG Assessment Boundary
- Briefly describes how GHG emission values for the SSR will be determined, and justifies instances where such values will be estimated

Most protocols also contain a schematic diagram showing how different SSRs are related to each other and indicating which SSRs are included in or excluded from the GHG Assessment Boundary.

The Reserve does not restrict the GHGs that may be considered within the GHG Assessment Boundary. Any gas that has been determined by the IPCC to have a radiative forcing effect on the atmosphere may be considered for inclusion in a protocol. Reserve protocols may address gases other than the six GHGs regulated under the Kyoto Protocol (i.e., CO₂, CH₄, N₂O, SF₆, HFCs, and PFCs).

2.5.1 Physical Project Boundaries

For some types of projects, it is necessary to define a physical boundary for a project in addition to a GHG Assessment Boundary. Physical boundaries are defined in terms of the physical area affected by a project activity and possibly specific equipment or facilities involved. Protocols will only require identification of a physical boundary where a physical boundary is necessary to

⁹ If excluding SSRs is unavoidable for practical reasons, then calculation and estimation methods related to included SSRs must be made suitably conservative in order to avoid overestimating total net GHG reductions.

quantify the magnitude of GHG emissions, removals or storage associated with one or more SSRs included in the GHG Assessment Boundary. The primary example would be forest projects, where the amount of carbon stored by a project depends on the area of land on which the project activity takes place.

2.5.2 Leakage Accounting

The term “leakage” is often used to refer to unintended increases in GHG emissions that may result from a GHG reduction project. Generally, leakage occurs at SSRs that are physically distant from the project itself or otherwise outside the project’s physical boundaries. Because the Reserve requires the definition of a comprehensive GHG Assessment Boundary – which must include any and all SSRs associated with significant GHG emissions, regardless of their physical location – Reserve protocols generally do not require an explicit and separate accounting for “leakage” effects. Instead, all effects of a GHG reduction project – both positive and negative – are accounted for without distinguishing one kind of effect from another. This does not mean that Reserve protocols neglect or ignore what other methodologies or protocols identify as “leakage.”

Where helpful for conceptual understanding, Reserve protocols may organize SSRs according to whether they are associated with a project’s “primary” or “secondary” effects. A project’s primary effect is its intended effect on GHG emissions (i.e., intended GHG reductions). Secondary effects are unintended effects on GHG emissions, often associated with leakage.¹⁰

2.6 Quantifying GHG Reductions

GHG emission reductions are quantified by comparing actual project GHG emissions to baseline GHG emissions. Baseline emissions are an estimate of the GHG emissions from sources within the GHG Assessment Boundary that would have occurred in the absence of the project (assuming the project is additional and would not have happened anyway). Project emissions are actual GHG emissions that occur at sources within the GHG Assessment Boundary. Project emissions must be subtracted from the baseline emissions to quantify the project’s total net GHG emission reductions. For sequestration projects, the formula is reversed: the baseline carbon sequestration rate is subtracted from the project carbon sequestration rate.

For most protocols, GHG emission reductions must be quantified and verified on at least an annual basis. Project developers may choose to quantify and verify GHG emission reductions on a more frequent basis if they desire and if the protocol allows it. The length of time over which GHG emission reductions are quantified is called the “reporting period.” The length of time over which GHG emission reductions are verified is called a “verification period.” Under some protocols, a verification period may cover multiple reporting periods (see Section 3.3.2).

2.6.1 Estimating Baseline Emissions

Baseline emissions are always subject to uncertainty because they are counterfactual, i.e., they are an estimate of GHG emissions or removals that would have occurred in the absence of the project. Depending on the project type and SSRs involved, many methods can be used to try to estimate baseline emissions. The Reserve uses standardized baselines in its protocols to the extent possible, meaning that the same conservative assumptions, emission factors, and

¹⁰ The terms “primary effect” and “secondary effect” are from the World Resources Institute and World Business Council for Sustainable Development, 2005. *The GHG Protocol for Project Accounting*, World Resources Institute, Washington, DC.

calculation methods are applied to all projects. Standardized baseline approaches seek to avoid case-by-case analysis of individual projects while maintaining overall levels of quantification accuracy and environmental integrity. Within Reserve protocols, however, project-specific calculations and emission factors may be used wherever necessary to ensure accuracy, or where standardized methods would result in estimates that are overly conservative in a large number of cases.

Standardized baselines are developed by considering broad trends (economic, technological, regulatory, and policy) in the industry or sector relevant to a project type and determining what future “business as usual” alternative activities are likely to be. To develop standardized baselines, the Reserve works with stakeholders to determine the most likely alternative technologies or practices. In many cases, a single practice, activity or technology is assumed to be the common baseline alternative for a class of project activities. In some cases, the performance threshold developed for additionality may also be used as an emissions baseline. After establishing a standard baseline alternative, the Reserve develops specific quantification steps, calculation methods, and formulas to estimate baseline emissions, incorporating site-specific data where appropriate. Depending on the project type, baseline emission estimates may either be fixed at the outset of a project, or they may be regularly updated using actual data collected during the project’s operation (used to infer baseline conditions).

2.6.2 Quantifying Project Emissions

Project GHG emissions are quantified based as much as possible on actual measurements of project activity performance. GHG emissions for each SSR may be measured directly, or calculated from measurements of parameters from which GHG emissions can be derived. For SSRs where direct or indirect measurements are too costly or infeasible, project GHG emissions may be estimated using standard assumptions or models.

2.6.3 Quantification Methods

The Reserve develops methods to calculate baseline and project emissions that meet an acceptable level of accuracy. As a general rule, methods should ensure 95% confidence that actual emissions are within +/- 5% of measured or calculated values, although required levels of accuracy will often depend on the specific magnitudes involved and their materiality. Methods may employ one or more of the following approaches:

- **Emission factor** approaches use input data multiplied by specific emission factors that approximate emissions per unit of the input. The factors are derived from research or model simulations and they are typically categorized by variables such as geographic location, local climate data, tree species, equipment standards, etc.
- **Dynamic models** estimate processes that cause GHG emissions (or biological carbon sequestration). Model users input specific parameters and the model generates emission or removal estimates. Research studies identify the parameters as important drivers of emissions or removals. Sometimes the parameter may be chosen from data provided by the Reserve or they may need to be measured at the project location.
- **Direct emission measurement** uses special instruments that monitor the flow of GHGs from the source into the atmosphere. This involves instrumentation and monitoring of GHG emission sources on-site.

2.6.3.1 Quantification Uncertainty and Conservativeness

Where cost-effective methods for quantifying GHG emissions or carbon storage yield uncertain estimates (e.g., greater than a five percent range), it may not be possible to accurately quantify baseline or project emissions. In these cases, Reserve protocols must use conservative assumptions and/or parameter values that will tend to underestimate, rather than overestimate, total GHG reductions and removals.

2.6.4 Calculating GHG Reductions or Removals

GHG reductions are calculated by periodically comparing the baseline to the project over a certain time period, usually one year.

The general formula for calculating GHG reductions is:

$$\text{GHG Reductions} = \text{Baseline Emissions} - \text{Project Emissions}$$

Positive GHG reductions are achieved when the project results in lower GHG emissions to the atmosphere over a certain time period compared to what would have happened absent the project activity.

For biological carbon sequestration projects, the general formula for calculating GHG removals is:

$$\text{GHG Removals} = (\text{Incremental Project Sequestration} - \text{Incremental Baseline Sequestration}) + (\text{Baseline Emissions} - \text{Project Emissions})$$

Positive GHG removals are achieved when the project results in more carbon sequestered in biological carbon stocks over a certain time period than would have been in the absence of the project activity.

2.6.5 Immediate Crediting for Future Avoided Emissions

In accordance with recognized principles for carbon offset quality, the Reserve has upheld a general policy against “forward crediting” of GHG emission reductions. Forward crediting occurs when credits are issued for GHG reductions before such reductions have occurred and before the activities that caused such reductions have been verified.¹¹ Subject to certain conditions, however, the Reserve does credit reductions upfront when a verified action results in the immediate avoidance of a future stream of GHG emissions. Please see the Reserve’s policy memo on this subject, available at <http://www.climateactionreserve.org/how/program/program-manual/>.

2.7 Project Monitoring

Monitoring of GHG projects is required in order to determine project performance, quantify actual GHG emissions, and in some cases, calibrate baseline emissions estimates. Under all Reserve protocols, GHG reductions are quantified only based on actual project monitoring data. Monitoring requirements are specified in each protocol and include provisions for:

¹¹ Offset Quality Initiative, 2008. *Ensuring Offset Quality: Integrating High Quality Greenhouse Gas Offsets Into North American Cap-and-Trade Policy*, p. 10. Available at: <http://www.offsetqualityinitiative.org/>.

- Monitoring GHG emissions or removals associated with SSRs within the GHG Assessment Boundary
- Monitoring other data related to assumptions underlying GHG emissions and/or carbon stock estimates
- Documenting data storage and quality assurance/quality control (QA/QC) measures
- Ensuring all project components are operated in a manner consistent with the manufacturer's recommendations
- Ensuring all monitoring instruments are calibrated and maintained as specified by the manufacturer

The Reserve requires a monitoring plan to be established for all monitoring and reporting activities associated with a project. The monitoring plan serves as the basis for verification bodies to confirm that the monitoring and reporting requirements in each protocol have been met and that consistent, rigorous monitoring and record-keeping is ongoing at the project site. Monitoring plans must cover all aspects of monitoring and reporting contained in a protocol and must specify how data for all relevant parameters will be collected and recorded. Each protocol specifies in a table the parameters that must be monitored and how data for each parameter must be acquired (e.g., from measurement, calculation, approved references or operating records).

At a minimum, a monitoring plan must stipulate the frequency of data acquisition; a record keeping plan; the frequency of instrument field check and calibration activities; and the role of individuals performing each specific monitoring activity. Monitoring plans should include QA/QC provisions to ensure that data acquisition and meter calibration are carried out consistently and with precision.

Finally, monitoring plans for most protocols must include procedures that project developers will follow to ascertain and demonstrate that the project passes the legal requirement test for additionality.

2.8 Ensuring Permanence of GHG Reductions

Because CO₂ and other GHG emissions remain in the atmosphere for very long periods of time, offsetting reductions in GHG emissions must effectively be permanent. Some types of offset projects, however, cause GHG reductions by removing CO₂ from the atmosphere and storing it in a reservoir (e.g., in trees or other organic materials, or in geologic formations). In these cases, there is a risk that CO₂ may be re-emitted to the atmosphere, leading to a "reversal" of GHG reductions. A reversal occurs when the total amount of CO₂ stored by a project becomes less than the total number of CRTs issued to the project. This can happen, for example, if some or all of the trees associated with a forest project are destroyed by fire, disease or intentional harvesting.

The Reserve requires that reversals be compensated for in order to ensure the integrity of CRTs and to maintain their effectiveness at offsetting GHG emissions. Specific rules and conditions for reversal compensation are detailed in individual protocols. Generally, the Reserve requires that CRTs be retired in proportion to any reversals, such that the total number of issued CRTs does not exceed the total quantity of CO₂ stored by a project over a sufficiently long period of time.

3 Program Rules and Procedures

3.1 Project Registration

This section summarizes the administrative steps a project developer must follow to register a project with the Climate Action Reserve. The timing of project registration may be independent of its start date. In other words, projects may be submitted after they begin operation (subject to the eligibility restrictions on the project start date described above) or before they begin operation. However, the steps outlined in this section must be followed in order for the Reserve to issue CRTs to a project.

Detailed information on the Reserve's software operating procedures, including step-by-step instructions for creating accounts, entering information, receiving CRTs, and transferring CRTs among accounts can be found in the Reserve's Operating Procedures:

<http://www.climateactionreserve.org/how/program/documents/>.

3.1.1 Fee Structure Summary

The Reserve imposes required fees that are automatically charged to account holders during the project registration process (Sections 3.1.2 to 3.2.1). A summary of those fees is below:

Reserve Account Fees (Effective October 1, 2009)	
Account Maintenance Fee (annual per project)	\$500
Project Submittal Fee (per project)	\$500
Project Transfer Fee (per project transferred between account holders, paid by the transferee)	\$500
CRT Issuance Fee (per CRT issued)	\$0.20
CRT Transfer Fee (per CRT transferred, paid by the transferer)	\$0.03
Retirement (per CRT retired)	no charge

3.1.2 Account Registration

As a first step, an account must be set up with the Reserve. Account registration only needs to occur once; any number of projects can be registered under the same account.

Any person or organization may apply for a Reserve account regardless of location or affiliation. Account applications are completed through the Reserve software. Along with completing an online application, each user must also agree to the legal Terms of Use for the Reserve. The Terms of Use binds users of both the Reserve software and the program itself to the terms laid out in the protocols, the Program and Verification Manuals, and the Operating Procedures as modified from time to time. The Terms of Use document can be downloaded at

<http://www.climateactionreserve.org/how/program/documents/>.

When a new account is approved by the Reserve, the account holder will receive an invoice for the account maintenance fee (\$500 annually). Payment is due within 30 days of approval to avoid cancellation of the new account.

Account management can be shared between the account owner and another party provided a Designation of Authority form has been completed (see Section 3.1.2.2).

3.1.2.1 Types of Accounts

There are seven types of accounts in the Reserve:

1. **Project Developer.** An account type for organizations that wish to register projects that generate GHG reductions or removals. This account type can also be used to transfer and manage CRTs.
2. **Trader/Broker/Retailer.** This type of account allows the transfer and management of CRTs, but not registration of projects.
3. **Verifier.** An account type for verification bodies that have been trained and authorized by the Reserve to verify projects. There is no annual account fee for verification bodies.
4. **Reviewer.** This account type is only for those who have been asked by the Reserve to serve as a project reviewer. There is no annual account fee for reviewers.
5. **Client.** This type of account is for any individual or entity that wishes to retire CRTs but not develop its own projects.
6. **Aggregator.** This account type is designated for use by project aggregators. This account type enables the management of CRTs on behalf of multiple projects formally registered as part of an aggregation, as allowed under certain project protocols. The account type can be held by any entity authorized to manage accounting, reporting, and/or CRT transfers on behalf of an aggregation of projects.
7. **Aggregation Participant.** This account type is designated for use by project developers participating in an aggregate according to protocol-specific rules and procedures. This account type allows the registration of projects that are formally part of an aggregation. This account type may also be used to transfer and manage CRTs under the terms and restrictions imposed by the relevant project protocol and/or aggregation guidance.

The public also has the ability to view information on the Reserve, but an account is not needed to view publicly available information.

3.1.2.2 Designation of Authority

A project developer and trader/broker/retailer account holder may designate an agent to access the Reserve software on their behalf.

Account holders must complete the Designation of Authority form to specify agents besides themselves who will have access to all information contained in their account. An example of an account holder agent would be a technical consultant hired by the project developer to manage a project on their behalf.

An account holder agent will have all the rights and responsibilities of the account holder and will also be bound by the Reserve Terms of Use. The Designation of Authority form can be downloaded at <http://www.climateactionreserve.org/how/program/documents/>.

3.1.3 Project Submittal

Project developers must complete and upload the appropriate project submittal forms for the project type and pay a project submittal fee to the Reserve (\$500 per project). Submittal forms are specific to the project type and include project descriptions and preliminary information used to assess eligibility. The submittal forms for each type of project are available for download at <http://www.climateactionreserve.org/how/projects/register/project-submittal-forms/>. A project is

considered “submitted” when all of the appropriate forms have been completed, uploaded and submitted through the Reserve software.

Once a project is submitted, it must be registered¹² within 30 months. Otherwise, the project must be re-submitted for registration under the most current version of its associated protocol.

3.1.4 Requests for Variances from Protocol Requirements

The Reserve will allow variances from protocol requirements only where Reserve staff determines that such variances are acceptable. Variances are only granted for deviations from requirements related to monitoring or measuring of GHG reductions or removals. The Reserve will not consider variances related to project eligibility criteria, or to the general methodological approaches for quantifying GHG reductions or removals specified in a protocol.

Reserve protocols are standardized documents developed through a transparent, stakeholder-driven process during which public input is solicited and considered thoroughly. Through this process, a single set of requirements and methodologies is established for all projects. If a requested variance diverges significantly from the approved methodology in a protocol, in that it requires extensive analysis of site-specific features and/or employs concepts not fully vetted through public consultation, the variance will be denied.

Variance requests that affect eligibility rules or methodological approaches cannot be granted, but if a request appears to have merit and may have application beyond a single project, it may be a candidate for future work and inclusion in future protocol revisions. Therefore, while a variance may not be approved at the time of submittal, the Reserve may elect to initiate work to explore the issue further if the resolution may be extrapolated, standardized, and used to inform future protocol revisions. If a future version of a protocol addresses the request for variance in such a way that the project would meet the requirements of the revised protocol, the project may be re-submitted and will not be deemed ineligible because of start date requirements (i.e., that the project must be submitted within six months of the project start date – see Section 2.4.3).

To submit a variance request, the project developer must complete and submit a Request for Project Variance form and pay a \$1,000 fee. No variance request will be considered until the project in question has been formally submitted to the Reserve. Each variance request is only applicable to a single project. A project developer seeking a similar variance on multiple projects must still submit a variance request for each project.

Upon receipt of the appropriate documentation and payment of the invoice, the Reserve will review the variance and will provide explicit, written acceptance to the project developer if the variance is approved. Decisions on variances are considered *sui generis*, and are not precedent-setting. The Reserve retains the right to reject a variance, request further documentation or impose additional constraints and/or discount factors on the proposed monitoring or measuring methods. There is no process to appeal the denial of a variance; the decision to accept or deny a variance request lies solely with the Reserve. If the Reserve accepts a variance request, a letter describing the variance granted will be sent to the project developer, and will be made publicly available.

¹² A project is considered “registered” when the project has been verified by an approved third-party verification body, submitted by the project developer to the Reserve for final approval, and accepted by the Reserve.

The Reserve also maintains a publicly-accessible Variance Tracking Log, which provides a summary list of all variance requests approved by the Reserve. The variance log can be downloaded at <http://www.climateactionreserve.org/how/program/documents/>.

The Request for Project Variance form can be downloaded at <http://www.climateactionreserve.org/how/projects/register/project-submittal-forms/>.

3.1.5 Project Listing

Once the project submittal fee has been received, the Reserve reviews the forms to determine whether they are complete and conducts a preliminary assessment of the project's eligibility according to the eligibility criteria set forth within the appropriate project protocol. Once this review is satisfactorily completed, the project is "listed" and made publicly available on the Reserve. Project verification activities cannot begin until a project is listed. Review of submitted forms will generally take about 10 business days.

Note that a project is may be verified against the protocol version in place at the time of project submittal as long as the project is registered within 30 months (see Section 3.3.2). A project developer is not required to verify against a new protocol version, even if one becomes effective in between the time a project is submitted and registered. Project developers always have the option, however, of voluntarily choosing to verify against the most recent version of a protocol at any time.

Listing a project does not constitute a validation or verification of the project or its eligibility; it is a preliminary review of project information provided to the Reserve by the project developer. It is not a final determination of the eligibility of the project, nor does it guarantee CRT issuance or CRT ownership. Project registration and CRT issuance is contingent upon the submission and approval of all required forms and documents for a particular project type, including, but not limited to:

- Attestation of Title (see Section 3.1.6)
- Attestation of Voluntary Implementation (see Section 3.1.7)
- Attestation of Regulatory Compliance (see Section 3.1.8)
- NOVA/COI form (see Section 3.1.9)
- Verification Report, Verification Statement, and List of Findings

The required forms and documents for registration under each project type can be found at <http://www.climateactionreserve.org/how/projects/register/project-submittal-forms/>.

3.1.6 Attestation of Title

All project developers must submit a signed Attestation of Title form indicating that they have exclusive ownership rights to the GHG reductions or removals associated with the project and for which the Reserve will issue CRTs. In addition, the project developer agrees that ownership of the GHG reductions or removals will not be sold or transferred except through the transfer of CRTs in accordance with the Reserve Terms of Use policies.

This form shall be signed and submitted after the conclusion of each reporting period/verification period for a project, as specified in each protocol. Note that the entity/individual signing the Attestation of Title (and the other attestation forms) must be the account holder who submitted the project. Projects will not be registered unless the account holder and signatory to the attestation forms match.

The Attestation of Title form can be downloaded at <http://www.climateactionreserve.org/how/projects/register/project-submittal-forms/>.

3.1.7 Attestation of Voluntary Implementation

All project developers must submit a signed Attestation of Voluntary Implementation form that confirms the project was implemented and established voluntarily and continues to operate as such. The project developer attests that at no time was the project required to be enacted by any law, statute, rule, regulation or other legally binding mandate by any federal, state, local or foreign governmental or regulatory agency having jurisdiction over the project.

This form is signed and submitted after the conclusion of each reporting period/verification period (unless otherwise exempted by the protocol under which the project is registered). The Attestation of Voluntary Implementation, along with the project's monitoring plan, are the primary mechanisms by which the project passes the legal requirement test, as specified in each protocol.

The Attestation of Voluntary Implementation form can be downloaded at <http://www.climateactionreserve.org/how/projects/register/project-submittal-forms/>.

3.1.8 Attestation of Regulatory Compliance

All project developers must sign and submit an Attestation of Regulatory Compliance form after the conclusion of each reporting period/verification period, as specified in each protocol. By signing this form, the project developer attests to the project's compliance status throughout the project reporting period. The form identifies specific dates during the reporting period over which the project was in material compliance with all laws. In addition, the form confirms that the project developer has disclosed to their verification body in writing any and all instances of non-compliance of the project with any law. The Attestation of Regulatory Compliance form and the accompanying disclosure to the verification body of non-compliance events are the primary mechanisms by which the project passes the regulatory compliance eligibility criterion, as specified in each protocol.

The Attestation of Regulatory Compliance form can be downloaded at <http://www.climateactionreserve.org/how/projects/register/project-submittal-forms/>.

3.1.9 Conflict of Interest Evaluation and Initiation of Project Verification

As described in Section 3.3, the Reserve requires third-party verification of all GHG reductions by an ISO-accredited and Reserve-approved verification body. Once the project developer has selected a verification body, the verification body must submit a Notice of Verification Activities and Conflict of Interest (NOVA/COI) evaluation form to the Reserve at least 10 business days prior to the commencement of verification activities. This form includes the scope of proposed verification activities and other required information used to assess the potential for conflict of interest between the verification body and the project developer. In order for verification activities to begin, the Reserve must determine that the potential for conflict of interest between the project developer and the verification body is low or can be mitigated. The conflict of interest evaluation must be completed before verification activities can begin. The NOVA/COI form is available for download at <http://www.climateactionreserve.org/how/verification/verification-documents/>.

Once the conflict of interest evaluation is complete, the project developer must upload the required attestations and enter project data into the Reserve software, and then submit the

project for verification. Required data is described in each protocol, and can include project information, monitored GHG emissions data, estimated GHG emission reductions, and other data required by the project monitoring guidelines. Once the project has been submitted by the project developer, the Reserve software automatically notifies the verification body that the project is ready for verification.

The verification body then reviews the project data in the Reserve software, performs verification activities, conducts site visits as needed, and verifies that the listed project has fully complied with the appropriate project protocol and that the GHG reductions or removals have been appropriately quantified. The verification body then submits a Verification Report, Verification Statement, and List of Findings through the Reserve software.

3.1.10 Approval of Verification and Project Registration

Once the verification body completes the Verification Statement, Verification Report, and List of Findings, the project developer reviews the verification body's documents and then formally submits the project to the Reserve for final approval of the verification. The Reserve reviews the submission for completeness, reviews the Verification Statement, Verification Report, and List of Findings, and either approves the verification or requests a re-submittal of one or more components. Upon approval, the project developer receives an invoice for the issuance of CRTs generated by the project (\$0.20 per CRT).

A project becomes "registered" the first time it is verified and accepted by the Reserve. The status of the project then changes from listed to registered in the Reserve software. See Section 3.3 below and the Reserve Verification Program Manual for further information about the project verification cycle.

3.1.11 Project Completion

A project is considered "completed" when it is no longer reporting to the Reserve. A project may be considered completed because it reaches the end of its crediting period(s), becomes ineligible or the project developer voluntarily chooses not to continue reporting. The reason for the completed status is noted in the Reserve system. Once a project is completed, project information remains publically available indefinitely.

3.1.12 Record Keeping

According to the Terms of Use, the Reserve has the right to examine, audit, and obtain copies of users' non-proprietary records from the most recent 12 month period. The Reserve does not anticipate this being a routine need, but rather a rare event to verify the accuracy of any attestation, transfer or statement, or to review account holders' performance of obligations under the protocols, the Terms of Use or the Reserve's Operating Procedures.

Project developer account holders on the Reserve must also maintain copies of all relevant records related to their projects and associated account usage for the time period specified in each protocol.

3.1.13 Publicly Available Information

The Reserve is intended to serve both account holders and the interested public. To this end, information about each project registered with the Reserve is accessible to the public. This openness and transparency provides interested parties with valuable information and helps instill confidence in the Reserve and enhance the credibility of the offset credits it certifies.

The public and all account holders can access the following information online:

- **Participating companies.** Organizations that have an active Reserve account (address or contact information is not disclosed).
- **Projects.** Projects that are listed or registered with the Reserve. Rejected project submittals and projects that are de-listed prior to registration and/or CRT issuance are not displayed; however, information will be made publicly available indefinitely for any project to which CRTs have been issued, regardless of whether the project is completed, terminated or transferred to another program.
- **Project CRTs issued.** Projects for which CRTs have been issued along with the quantity of CRTs issued to each project. Current CRT balances in individual accounts are not automatically displayed.
- **Search of CRT serial numbers.** The Reserve software allows searching for a CRT serial number by batch number or block start or end numbers. This search feature is designed for someone who wants to see details about a given CRT batch (for example, a CRT buyer). It cannot be used to search every CRT issued for a company or project. Search results include whether the CRTs are active or retired and, if retired, the time and date of retirement.
- **Accounts disclosed to public.** Active or retired CRT balances that account holders have chosen to be shown to the general public.
- **Retired CRTs.** Displays the CRTs that have been retired by account holders.

Information that is never shared with the public includes:

- Company street addresses
- Company phone, fax or email addresses
- Internal company information, like billing addresses
- Any person's contact information

Account holders' contact information is not used by the Reserve except to notify users of important system occurrences and policy updates and is not shared with other parties.

3.2 Climate Reserve Tonnes (CRTs)

In the Reserve, GHG reductions and removals are recognized as Climate Reserve Tonnes or CRTs, which are equal to one metric ton of carbon dioxide equivalent (CO₂e) reduced or sequestered. After projects are registered, CRTs are issued based on the GHG reduction or removal amount reported by the project developer and confirmed by an approved verification body. CRTs are issued only on an *ex post* basis (i.e., after verification that reduction activities have actually occurred) and only for GHG reductions or removals that occur within the project crediting period. For transparency, each CRT has a unique serial number with embedded information that identifies the project type, location, developer, and vintage. The unique serial number persists as CRTs are transferred between accounts or are retired and become offsets.

3.2.1 Issuance of CRTs

CRTs are issued by the Reserve for actual GHG reductions or removals achieved by a project, as determined in approved Verification Reports. Once a project is registered and the project's account holder pays the appropriate CRT Issuance Fee, CRTs for verified GHG reductions or removals are released into the account holder's primary CRT account. CRTs will not be issued

until the CRT Issuance Fee is received by the Reserve. CRTs can then be transferred to another Reserve account holder's account, moved into one of the project account holder's other accounts or retired.

An account holder can only hold or retire CRTs in its account for which it is the sole holder of legal title and Beneficial Ownership Rights, except as permitted under Section 9 of the Terms of Use.

3.2.2 Over-Issuance of CRTs

In the event that the Reserve determines that GHG reductions or removals for a project were incorrectly quantified or reported, such that the number of CRTs issued to the project account holder was in excess of the correct number according to the requirements of the applicable protocol, it is the project account holder's responsibility to compensate for the over-issuance of CRTs.

The Reserve will notify the project account holder of the over-issuance, including the basis for its determination, and the number of CRTs to be retired or authorized to be withheld from issuance as further described below. Within 30 days, the project account holder must:

1. Retire CRTs; and/or
2. Provide written authorization to the Reserve to withhold CRTs from future issuances to the project for a period of up to two years.

The Reserve shall determine, in its sole discretion, which option or combination of options a project account holder may use; this will be determined on a case-by-case basis and detailed in the over-issuance notification.

If the project account holder fails to satisfy its obligations within 30 days, the Reserve may:

1. Cause the retirement of CRTs held by the project account holder;
2. Purchase CRTs from third parties at the project account holder's expense and retire them; and/or
3. Withhold from issuance CRTs otherwise issuable to the project account holder.

The project account holder may dispute the over-issuance determination using the dispute resolution provisions set forth in Section 11(c) of the Climate Action Reserve Terms of Use.

3.2.3 Transfer of CRTs

In order to transfer CRTs to another party, that party must have an approved account with the Reserve. There is a transfer fee to transfer CRTs from one account holder to another (\$0.03 per CRT charged to the transferer). The transfer is conducted via the software between the two account holders; the Reserve does not play a role in the transfer.

Note that the Reserve does not function as a trading system or commodity exchange. The sale or purchase of CRTs takes place outside of the Reserve. Account holders may record sales by using the Reserve to move CRTs from one account to another. However, the Reserve makes no warranties concerning, and has no control over, the legal ownership of CRTs that may be held in individual accounts.

3.2.4 Retirement of CRTs

CRTs may be “retired” to indicate that the emission reductions or removals they represent have been used to satisfy a voluntary GHG emission reduction claim or to offset other emissions. To support such claims, CRTs are taken out of circulation so that they cannot be used to support any further claims. The Reserve retires CRTs by transferring them to a locked retirement account where they remain permanently and in perpetuity, precluding further use or transfer to other parties. Each account holder has its own associated retirement account. Information about retired CRTs is publicly available and includes details like project type, location, serial number, date issued, reason for retirement, etc. to support the transparency of the offsets within the Reserve. There is no charge to retire CRTs.

3.2.5 Holding and Retirement of CRTs on Behalf of Other Parties

In some circumstances, an account holder may hold and retire CRTs on behalf of one or more third parties. See Section 9 of the Reserve Terms of Use for related requirements.

3.2.6 Transferring CRTs from the Reserve

CRTs may be transferred to other GHG registries and offset programs under processes that are specific to the receiving registry/program.

VCS

CRTs may be exported to a Verified Carbon Standard (VCS) registry and converted into Verified Carbon Units (VCUs). Transfers may be initiated by any account holder with active CRTs. The account holder initiates this process as they would a CRT transfer. Once the transfer is accepted by the VCS registry administrator, the Reserve processes the transfer and VCUs are issued on the VCS registry. The exported CRTs are denoted as “converted to VCUs” in the Reserve software and public reports.

3.3 Project Verification

The Reserve requires periodic third-party verification of all GHG projects, as specified in each project protocol. This provides an independent review of data and information used to register CRTs. For every project, a third-party verification body reviews documentation, monitoring data, and procedures used to estimate GHG reductions or removals. The verification body submits a Verification Statement and Verification Report that provide the basis for determining the quantity of CRTs that can be issued to the project. The Reserve makes these documents publicly available. Verifiers conducting verification activities for projects listed or registered on the Reserve must be trained by the Reserve or its approved designees and employed by or subcontracted to an accredited verification body. A list of accredited verification bodies is available at <http://www.climateactionreserve.org/how/verification/connect-with-a-verification-body/>.

Verification bodies follow guidelines set forth in the Reserve's Verification Program Manual, as well as rules and procedures described in the specific verification guidance that is included in each project protocol.

3.3.1 Validation

Validation involves determining the project methodology and a project's eligibility to generate GHG reductions or removals. Unlike some other offset programs, the Reserve does not require that validation be conducted. Eligibility criteria and methodologies for emission reduction calculations are built into the Reserve protocols. Because the Reserve's eligibility criteria are

mostly standardized, determination of eligibility is usually straightforward and requires minimal interpretative judgment by verification bodies. The first time a project is verified, verification bodies are required to affirm the project's eligibility according to the rules defined in the relevant project protocol. Project developers may choose to have a project verified without verifying CRTs for issuance in order to establish its eligibility for registration and provide more certainty to potential CRT buyers or sellers. However, when a project developer is seeking to register CRTs, a full verification must be conducted. See the Verification Program Manual for more information.

3.3.2 Verification Cycle

All projects must complete verification within 30 months of being submitted to the Reserve. Projects that fail to complete verification within 30 months of submittal must re-submit under the latest version of the applicable protocol. These projects will not be subject to the start date requirements in Section 2.4.3, provided that the project met all applicable requirements at the time of initial submittal.

GHG emission reductions are generally quantified and verified on an annual basis. Some protocols allow project developers to verify GHG emission reductions on a more frequent or less frequent basis if they desire. The length of time over which GHG emission reductions are quantified and reported to the Reserve is called the "reporting period." The length of time over which GHG reductions are verified is called a "verification period." Under some protocols, the reporting period and the verification period are identical and no distinction is made between these terms (the protocol may refer only to a "reporting period"). Other protocols distinguish between the two and the maximum verification period is specified. Note that under some protocols, the verification period may be allowed to cover multiple reporting periods. However, the end date of a verification period must always correspond to the end date of a reporting period.

CRTs are issued according to the quantity of verified reductions achieved during a verification period, regardless of the period's length.

After a project is registered, a Verification Statement and Verification Report must be submitted within 12 months of the end of the verification period for which project activities are verified. For example, a Verification Statement and Report for GHG reductions achieved between January 1, 2010 and December 31, 2010 would have to be submitted by December 31, 2011. The only exception is if the project developer is taking a zero-credit reporting period (see Section 3.3.3 below).

For those projects that require annual verification at a minimum, Verification Statements and Reports may cover a maximum of 12 months of project activity. The only exception is for pre-existing projects undergoing their initial verification and registration with the Reserve; the first Verification Statement and Report for these projects may cover multiple years, back to the project's start date. This data is considered "historic data." Historic data may only be registered during a project's initial verification with the Reserve.

Reporting periods must be contiguous; there can be no time gaps in reporting during the crediting period of a project once the initial reporting period has commenced.¹³ Gaps in monitoring data or activity must be included in reporting periods and verified accordingly. The

¹³ There is an exception to this requirement for projects under the U.S. and Article 5 Ozone Depleting Substances Project Protocols. Under those protocols, reporting periods need not be contiguous.

verification body must confirm that no reductions are claimed for any period for which a gap in monitoring data exists or for which a project was non-operational.

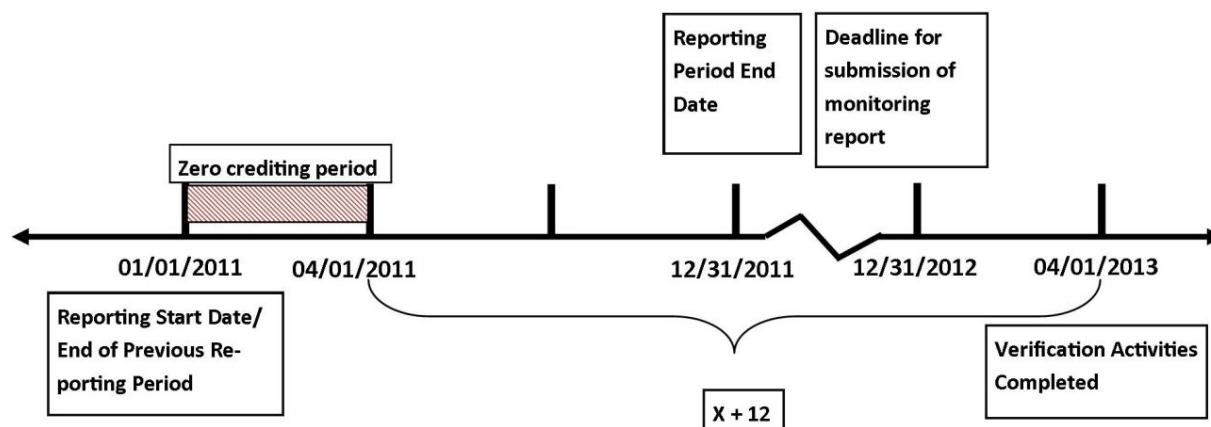
All projects require regular site visits as part of project verification; the frequency of required site visits depends on the project type and is specified in each protocol. Site visits allow the verification body to perform an in-depth review of certain aspects of the data management systems and confirm that project activities are occurring per the submitted monitoring reports. Additional details and requirements regarding site visits are detailed in the specific verification guidance included in each project protocol and the Verification Program Manual.

3.3.3 Zero-Credit Reporting Period

To provide flexibility for project developers in instances where verification is not practical for a specific reporting period/verification period, developers of projects *other than forest projects* may choose to delay verification on the condition that they acknowledge no CRTs will be issued for any period of time that falls outside the standard window for completing verification of monitoring data. Such a period is referred to as a “zero-credit reporting period,” and is defined as the period of time that is subsequent to the end of a project’s prior verification period but is more than “X + 12” months prior to the date of submission of a Verification Report, where “X” is the maximum length for a verification period as specified by the appropriate project protocol.

For most non-forest project types, the maximum length of a verification period is 12 months, allowing CRTs to be issued only for GHG reductions achieved up to 24 months prior to submission of a Verification Report. See Figure 1 below for an example.

Figure 1: Zero-Credit Reporting Period for a Project with a 12 Month Maximum Verification Period (X=12 Months)



For any zero-credit reporting period, the project developer must sign a Zero-Credit Reporting Period Acknowledgment and Election form (Acknowledgment and Election form) acknowledging that CRTs will not be issued for any GHG emission reductions or removals achieved by the project during the zero-credit reporting period. Along with the Acknowledgment and Election form, the project developer must also submit the project’s monitoring plan and a monitoring report to the Reserve that covers data for the zero-credit reporting period.

The Acknowledgment and Election form and monitoring documents are required in order to meet the regular documentation requirements of the Reserve program and ensure the continuation of a project’s crediting period. CRTs for subsequent verification periods will not be

issued until these documentation requirements are met. The Acknowledgment and Election form and monitoring documents shall be submitted within 12 months of the end date allowed for a verification period via the Reserve software, but will not be publicly available documents. The Acknowledgment and Election form will be made public. The submission of the monitoring plan and monitoring report for a zero-credit reporting period will satisfy the requirement for contiguous reporting in Section 3.3.2.

The Acknowledgment and Election form and project-specific monitoring report templates can be downloaded at <http://www.climateactionreserve.org/how/projects/register/project-submittal-forms/>.

A zero-credit reporting period may not exceed the maximum length for a verification period as prescribed in the protocol pertaining to the project. However, a project is allowed to have contiguous zero-credit reporting periods. If neither a Verification Report nor an Acknowledgment and Election form is submitted within 12 months of the end date allowed for a verification period, then the project will be canceled.

Delaying verification and opting for a zero-credit reporting period is only allowed after a project has undergone a successful initial verification and is registered on the Reserve. Otherwise the standard 30 month initial verification deadline applies.

To ensure that project emissions were not greater than baseline emissions during a zero-credit reporting period, monitoring data collected during the zero-credit reporting period must be verified the next time the project undergoes verification. While the project is not required to conform to the protocol's monitoring and QA/QC procedures during a zero-credit reporting period, the verification body must be able to confirm with reasonable assurance that project emissions were less than baseline emissions during the zero-credit reporting period. Verification bodies shall perform a review of project documentation and calculations for the zero-credit reporting period and may use professional judgment when assessing available project documentation.

If the verifier cannot confirm with reasonable assurance that project emissions were less than or equal to baseline emissions, the Reserve will make a determination of action on a case by-case basis.

3.4 Transferring Projects into the Climate Action Reserve

Existing projects that have been registered with other carbon offset programs may be transferred to the Reserve if they meet, and are successfully verified against, the Reserve's protocol requirements, and if they meet the project start date requirements detailed in Section 2.4.3. Such projects must submit a Registry Project Transfer Form, available for download at <http://www.climateactionreserve.org/how/projects/register/project-submittal-forms/>. The Registry Project Transfer Form requires additional information and documentation to determine the status of the project and any offset credits issued for it under other programs.

The project developer must also provide the Reserve with a signed Project Transfer Letter before CRTs for that project are issued by the Reserve. The letter must be sent to the administrator of the other program where the project was registered, confirming that no further emission reductions or removals for the project will be verified or registered under the other program.

Transferred projects are considered pre-existing projects and thus are able to register more than 12 months of data during their initial verification with the Reserve (see Section 3.3.2). Transfer projects are also subject to contiguous reporting, which means that a project's initial verification period with the Reserve must be contiguous with the end of the last verification period under the program from which the project is transferred.

The crediting period for a transferred project will be reduced by the length of time that has elapsed since the project start date, as defined by each protocol.

Note that while projects can be transferred from another program to the Reserve, previously issued credits from another program cannot be transferred to the Reserve. Furthermore, projects that generated offset credits in the past but were never registered on a carbon offset registry cannot be registered with the Reserve.

3.5 Transferring Projects from the Climate Action Reserve

Projects may be transferred from the Reserve to other GHG registries and offset programs. To transfer a project, the developer shall provide a signed Project Transfer Letter to the Reserve specifying the effective date of transfer and confirming that no further emission reductions or removals for the project will be verified or registered with the Reserve.

Once a project is transferred, no future reductions or removals from that project will be registered as CRTs. Project information and previously issued CRTs will remain in the Reserve system under their given serial numbers. Previously issued CRTs may be transferred to other accounts on the Reserve system and retired on the Reserve system, as long as the project developer maintains an account with the Reserve. Section 3.2.3 of this manual describes how to transfer CRTs to other Reserve accounts.

3.6 Transferring Projects between Account Holders in the Reserve

Projects may be transferred between project developer account holders within the Reserve program. The project developer transferee (the project developer who is acquiring the project) must submit an Account Holder Project Transfer form and pay \$500 per project transfer. The Reserve will review this form and the project will then be transferred to the new account holder. The original account holder will no longer have access to restricted (non-public) project information.

The Account Holder Project Transfer form can be downloaded at <http://www.climateactionreserve.org/how/projects/register/project-submittal-forms/>.

3.7 The Reserve and the Verified Carbon Standard

The Reserve is the first recognized independent GHG offset program under the Verified Carbon Standard, a global standard and program for approval of credible voluntary offsets. As an approved VCS program, offset projects that meet the Reserve's protocols can generate VCS credits, known as VCUs. CRTs issued by the Reserve can also be converted to VCUs and transferred to a VCS registry (see Section 3.2.6). However, VCUs cannot be converted to CRTs; only projects registered with the Reserve using Reserve protocols are able to generate CRTs.

For more information on VCS, visit <http://www.v-c-s.org>.

4 Project Protocol Development Process

The Reserve is committed to producing high quality GHG project accounting protocols, and to this end uses an intensive multi-stakeholder process to develop its project protocols. This approach integrates extensive data collection and analysis with review and input from a diverse range of experts and stakeholders. Reserve staff guides this process to ensure that final protocols adhere to the principles outlined in Section 1.2. This process produces high quality, well-vetted, and credible protocols based on best practices from national and international standards. This section details the Reserve's unique and rigorous project protocol development process.

4.1 Screening Process

The Reserve uses an internal screening process to identify candidate project types with good potential for offset protocol development. The Reserve takes into consideration a number of issues when assessing a project type for further development, including:

- Does the project type create direct or indirect emission reductions? All else equal, the Reserve will focus on project types that result in direct reductions. Direct emission reductions are generally easier to verify because the sites where they occur can be directly monitored. When emission reductions occur at sites or sources owned by the project developer, there is also less risk that an entity other than the project developer will claim ownership of the reductions. Thus, these projects are unlikely to be at risk for double counting or ownership issues.
- How amenable is the project type to standardized additionality and baseline determinations? For some types of projects, it is difficult to credibly and accurately determine additionality and estimate baseline emissions on a standardized basis. In general, the Reserve will avoid developing protocols for these project types. Alternatively, the Reserve may incorporate project-specific methods or variables into standardized protocols as appropriate, or limit the scope of protocols to address only activities and conditions for which standardized approaches are feasible.
- What is the likelihood that the sector where the project activity occurs will be covered under a future cap-and-trade system? Since issuing offset credits for reductions that occur at capped emission sources would result in double counting, the Reserve prefers to focus on projects affecting GHG emissions that are unlikely to be capped.
- What are the total potential GHG reductions that could result from this type of project? As it takes significant effort and resources to produce a standardized project protocol, there should be large and geographically diverse potential reduction opportunities.
- Are there potential positive or negative environmental or social impacts from this type of project activity or the operations, facilities or sectors with which this type of project may be associated? Negative effects should be avoided. All else equal, the Reserve will prioritize sectors and project types that can create significant co-benefits for the habitats and communities where projects take place. Where necessary, the Reserve will also consider developing additional criteria for ensuring environmental and social safeguards.

- Are there existing methodologies or protocols that could serve as a starting point? Standardized protocols are more easily developed where sound scientific methods already exist to determine baselines and quantify emission reductions.
- Are there high quality datasets to evaluate “business as usual” activities for the sector in which the project activity occurs? Setting performance thresholds and other standardized tests for additionality requires defensible data on the current state of the sector.

Once the internal screening process is complete, project types with good potential are either explored more fully through the development of an issue paper or the Reserve holds a scoping meeting to engage stakeholders in further evaluating what types of activities should be targets for protocol development.

4.1.1 Issue Paper

An issue paper evaluates the feasibility and desirability of developing a protocol (or set of protocols) for a particular project type. It assesses possible issues with developing a standardized protocol for the project type, including an evaluation of potential approaches to GHG emission quantification; exploration of options for defining eligible project activities; evaluation of approaches to setting project boundaries; and assessment of the availability of datasets and other pertinent information. It also assesses the environmental and social impacts associated with prospective project activities, as well as potential impacts from the operations, facilities or sectors with which project activities may be associated. Issue papers are prepared by researching existing sector methodologies and datasets and consulting sector experts. After completion, the issue paper may be sent to interested parties (industry experts, environmental groups, state agencies, academics) for review and comment.

4.1.2 Scoping Meeting

Interested parties may be invited to a scoping meeting to discuss protocol development options and challenges for the project type in question. At the scoping meeting stage, the Reserve will generally propose a series of activities within the project type category for which specific accounting and verification standards could be developed. Feedback from the scoping meeting is used to determine whether the Reserve will move forward in developing a protocol, and which activities the protocol should encompass.

4.2 Development Process

After a project type is identified, the Reserve follows a rigorous multi-stakeholder consultation process to develop an appropriate protocol.

4.2.1 Workgroup Assembly

To initiate the project protocol development process, the Reserve assembles a balanced multi-stakeholder voluntary workgroup, drawing from industry experts, state and federal agencies, environmental organizations, and other various stakeholders. Workgroups are assembled by invitation, but all parties are encouraged to express their interest in participating in the workgroup process. Throughout the protocol development process, the workgroup provides expert review and direct input into the development of the project protocol.

Interested stakeholders that are not on the workgroup can still participate in the workgroup process as “observers.” Any individual is welcome to be an observer to a protocol development

process. Observers can listen to workgroup meetings via conference call, but are not solicited for comments or feedback until the public review period.

4.2.2 Options Paper

Where appropriate, the Reserve may develop an options paper to further address and lay out different approaches for key elements of the protocol. A draft is shared with the workgroup and comments are incorporated into a final options paper that forms the basis of the draft protocol.

4.2.3 Draft Protocol for Workgroup Review

The Reserve develops a draft protocol based on expert input and insights from an issue paper or the final options paper. The draft protocol is released to the workgroup for review and revision, and is also posted on the Reserve's website for review by observers and other interested members of the public. The draft protocol review process usually includes at least one or more in-person workgroup meetings in which members are invited to discuss issues at length. At this point in the process, the Reserve explicitly requests input on possible environmental and social harms associated with project activities and associated operations or facilities, and requests discussion of whether existing legal and regulatory safeguards are appropriate and adequate to mitigate any harms.

Written comments from the workgroup are incorporated into the draft protocol, which may go through multiple iterations of workgroup review before it is ready for public review. Note that observers and the public do not comment on the draft protocol.

4.2.4 Public Review Period and Public Workshop

The revised draft protocol is posted on the Reserve's website for a 30-day public comment period. The public is notified via the Reserve's listserv database and other venues, and reviewers are asked to submit written comments. During the 30-day public review period, the Reserve also hosts a public workshop to solicit feedback and address concerns regarding the draft protocol in an open forum. After receiving written feedback, all comments are recorded and addressed. A final protocol is produced, taking into account public comments and any further workgroup feedback.

4.2.5 Board Approval

The Reserve's Board must vote to adopt each project protocol. Protocols are presented at quarterly board meetings, which are open to the public, and issues raised throughout the development process are reviewed, giving workgroup members and interested stakeholders a chance to raise any last concerns or questions. After the Board adopts the protocol, it becomes an official Reserve protocol and is immediately available for use.

4.2.6 Ongoing Public Feedback and Comments

After Board approval, the Reserve continues to solicit, document, and respond to public feedback and comments on the current version of the project protocol. Comments and feedback on adopted protocols can be submitted to the Reserve at policy@climateactionreserve.org. The public is also welcome to contact Reserve staff directly to discuss their comments and concerns.

Public feedback and comments are assessed on an ongoing basis and may initiate a revision to a project protocol.

4.3 Revisions to Project Protocols

After Board approval, the protocols are periodically revised in light of public comments, on-the-ground experience, and technological, scientific, and regulatory developments. In addition, the Reserve may review and update performance standards and standardized baselines to ensure they continue to effectively screen projects for additionality and accurately represent “business as usual” emissions. There are two types of revisions to project protocols: policy revisions and program revisions.

4.3.1 Policy Revisions

Policy revisions are those that concern questions of project definition or eligibility, or that involve significant (non-technical) changes or adjustments to baseline estimation and/or the quantification of emission reductions or removals. A policy revision is generally focused on specific elements of the protocol and is not necessarily an opportunity to revisit all decisions made in the initial protocol development process.

Depending on the extent of the revision, the Reserve may convene an expert stakeholder group or reach out to stakeholders involved in the initial protocol development process. This group may be asked to comment on a revised draft protocol or be convened to discuss key issues prior to changes being circulated for comment. All policy revisions require a 30-day public comment period and adoption by the Reserve’s Board. Policy revisions are brought for adoption at the quarterly board meetings or are brought to the executive committee of the Board for adoption if expedited action is required. When adopted, a policy revision creates a new version of the project protocol (e.g., Version 1.0 undergoes a policy revision to become Version 2.0).

4.3.2 Program Revisions

Program revisions are editorial or technical in nature and do not require a public comment period, nor do they require adoption by the Reserve’s Board. These revisions do not significantly change the policies or eligibility in the project protocol, but can change or revise quantification methodologies or monitoring requirements. Program revisions create a new sub-version of the protocol (e.g., Version 1.0 undergoes a program revision to become Version 1.1). Program revisions are considered adopted on the date they are posted on the Reserve website. A protocol revision notification is sent to the Reserve’s listserv and to Reserve account holders at that time.

4.3.3 Grace Period for Registration under Prior Protocol Versions

Project developers have 90 days from the date on which a revised protocol is adopted to submit a project to the Reserve using the previous version of the protocol. As with all projects, the project must be registered within 30 months of the project being submitted to the Reserve. Otherwise, the project must be resubmitted for registration under the most current version of the protocol.

Projects that have been registered using a previous version of the protocol are not required to have their projects verified under any updated versions. Instead, projects may continue being verified against the original protocol version. Project developers always have the option, however, of voluntarily choosing to verify against the most current version. Applying the most current protocol to a project does not change the project’s crediting period.

4.3.4 Errata and Clarifications

If typographical errors are found in a protocol after it is released, the Reserve may issue an “Errata” document indicating required corrections. Errata are issued to correct typographical errors in text, equations or figures. Similarly, if the Reserve discovers that certain protocol requirements are ambiguous or in need of further guidance, the Reserve may issue a “Clarifications” document. Clarifications are issued to ensure consistent interpretation and application of the protocol.

Errata and Clarifications documents become effective immediately for the version(s) of the protocol to which they apply (applicable versions are identified in each document). Project developers and verification bodies must refer to and follow the corrections and guidance presented in Errata and Clarifications documents once they are issued. Errata and clarifications are considered effective on the date they are first posted on the Reserve website. All listed and registered projects must follow the guidance specified in the Errata and Clarifications document. On a case-by-case basis, in order to ensure that the protocol is consistently applied and that the purpose of the protocol is achieved, the Reserve has sole discretion to apply current errata retroactively to a project for which CRTs have been issued prior to the release of the errata that may affect quantification of its GHG reductions and/or CRTs issued.

All account holders and verification bodies will be notified if an Errata and Clarifications document is released or updated. Errata and Clarifications documents will be appended to all applicable versions of the protocol, and will also be available as stand-alone documents on the relevant protocol’s webpage. The errata and clarifications identified in these documents will be incorporated into subsequent versions of the relevant protocol.

4.4 Revisions to the Program Manual

This manual may be updated from time to time to reflect developments in the Reserve’s program, policies, and requirements. Between updates, the Reserve may release policy memos that update or replace guidance in the Program Manual. These memos are considered effective on the date they are posted on the Reserve website; users of the Reserve program and verification bodies must follow the guidance specified in the memo from that date forward. All account holders and verification bodies will be notified if a policy memo is released, and the memo will be posted on the Reserve’s Program Manuals and Policies webpage at <http://www.climateactionreserve.org/how/program/program-manual/>.

The contents of the memos will be incorporated into the next update of the Program Manual.

4.5 Communication with Public

Current versions of each project protocol and information about protocols in development is available at <http://www.climateactionreserve.org/how/protocols/>. Each project protocol also has its own dedicated webpage that can be accessed from here.

Interested members of the public can receive protocol development announcements and program updates by joining the Reserve’s mailing list at <http://www.climateactionreserve.org/news-and-events/newsletter/>.

5 Glossary

Aggregator	A corporation or other legally constituted entity, city, county, state agency or individual (or a combination thereof) that manages projects within an aggregate. In the Reserve software, this account enables the management of projects held by aggregation participants.
Aggregation participant	A corporation or other legally constituted entity, city, county, state agency or individual who is participating in an aggregate according to protocol-specific rules and procedures. In the Reserve software, this account type allows the creation of a project that is linked to an aggregator account. CRTs issued to an aggregation participant's project may only be transferred to the linked aggregator account.
Business day	Any day except a Saturday, Sunday or a Federal Reserve Bank holiday. A business day shall open at 8:00 a.m. and close at 5:00 p.m. Pacific Prevailing Time.
Client	In the Reserve software system, a "client" is an organization or individual who wishes to retire CRTs but does not develop its own projects.
Climate Action Reserve	The national offsets program that establishes standards for quantifying and verifying GHG emission reduction projects, issues carbon credits generated from such projects, and tracks the transfer and retirement of credits in a publicly-accessible online system.
Climate Reserve Tonne or CRT	The unit of offset credits used by the Climate Action Reserve. One Climate Reserve Tonne is equal to one metric ton of CO ₂ e reduced or sequestered.
Completed	A project is considered "completed" when it is no longer reporting to the Reserve. A project is completed if it reaches the end of its crediting period(s), becomes ineligible, or if the project developer chooses not to continue reporting. The reason for the completed status is noted in the Reserve's public reports. Once a project is completed, project information remains publicly available indefinitely.
Group Retirement Subaccount	The subaccount for the retirement of CRTs that are held by an account holder on an omnibus basis on behalf of one or more third parties that hold legal title and/or beneficial ownership rights in those CRTs.

Listed	A project is considered “listed” once the Reserve has satisfactorily reviewed all project submittal forms. The project will then appear in the public interface of the Reserve system.
Offset	A reduction or removal of GHG emissions from the atmosphere that is used to compensate for an equivalent amount of emissions from another GHG emitting activity occurring elsewhere. For the purposes of the Reserve program, a CRT becomes an offset when it is retired.
Project developer	An organization or individual that registers projects for the purpose of generating emission reductions or removals. In the Reserve software system, project developers may be issued CRTs for the verified emission reductions or removals that their projects achieve. They can also transfer and manage CRTs.
Project protocol	A Reserve-developed document that contains the eligibility rules, GHG assessment boundary, quantification methodologies, monitoring and reporting parameters, etc. for a specific project type. Project protocols are akin to “methodologies” in other offset programs.
Reduction	A verified decrease in GHG emissions caused by a project, as measured against an appropriate forward-looking estimate of baseline emissions for the project.
Registered	A project is considered “registered” when the project has been verified by an approved third-party verification body, submitted by the project developer to the Reserve for approval, and accepted by the Reserve.
Removal	A verified increase in carbon stocks caused by a forest project, as measured against an appropriate forward-looking estimate of baseline carbon stocks for the project.
Reporting period	A discrete period of time over which a project developer quantifies and reports GHG reductions to the Reserve.
Retired	When CRTs are transferred to a retirement account in the Reserve system, they are considered retired. Retirement accounts are permanent and locked, so that a retired CRT cannot be transferred again. CRTs are retired when they have been used to offset an equivalent tonne of emissions or have been removed from further transactions on behalf of the environment.
Submitted	A project is considered “submitted” when all of the appropriate forms have been completed, uploaded and submitted to Reserve software.

Trader/Broker/Retailer	An organization or individual that transfers and manages CRTs in the Reserve system, but does not develop its own projects.
User	An individual or entity that holds an account with the Reserve and has agreed to the Terms of Use and shall include such representative as the entity shall appoint and designate by completing the Designation of Authority form.
Verified	A project is considered “verified” when the project verification body has submitted the project’s Verification Statement and the Verification Report in the Reserve system.
Verification body	An organization or company that has been ISO-accredited and approved by the Reserve to perform GHG verification activities for specific project protocols.
Verification period	A discrete period of time over which a project’s GHG reductions are verified. Under some protocols, a verification period may cover multiple reporting periods. The end date of a verification period must correspond to the end date of a reporting period.
Verifier	An individual that is employed by or subcontracted to an ISO-accredited and Reserve-approved verification body and is qualified to provide verification services for specific project protocols.