



CALIFORNIA TROPICAL FOREST STANDARD

**Criteria for Assessing Jurisdiction-Scale Programs that Reduce Emissions from
Tropical Deforestation**

[INSERT Date of Board Endorsement]

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Summary of California Tropical Forest Standard

Chapter 1 specifies the purpose of the California Tropical Forest Standard and defines key terminology used in the standard.

Chapter 2 specifies that the California Tropical Forest Standard applies to subnational jurisdictions implementing jurisdiction-scale sector-based crediting programs to reduce emissions from tropical deforestation and degradation. The chapter sets forth the minimum requirements against which such a program would be assessed by California, other emissions trading systems that decide to utilize the standard, or other initiatives (e.g., direct financial investment or payment for performance programs) that decide to utilize the standard.

Chapter 3 outlines the programmatic elements an implementing jurisdiction would need to include in its sector-based crediting program and how these elements would need to be described in a “sector plan.” The implementing jurisdiction must demonstrate through its sector plan that its program was developed through a robust public participation and participatory management process (e.g., involvement and consultation in decision-making). The sector plan must also transparently demonstrate the implementing jurisdiction’s methodology for developing a reference level, monitoring, reporting, and verification requirements, and how its jurisdictional program fits within any national program to reduce emissions from tropical deforestation (if applicable).

Chapter 4 specifies the minimum requirements for establishing a reference level. The reference level must be developed consistent with Intergovernmental Panel on Climate Change (IPCC) methodologies using transparent and high-quality remote sensing and ground-level data, best available historical annual deforestation rates, and must be updated periodically. The reference level only incorporates native forests, which means that an implementing jurisdiction would not be able to use monoculture or industrial plantations to set or meet its reference level or crediting baseline. The crediting baseline, and any resulting sector-based crediting, as described in Chapter 6, is measured against the reference level.

Chapter 5 specifies minimum requirements for a crediting period, meaning the period of time during which a reference level is applicable for purposes of determining emissions reductions, and crediting, prior to adjusting the reference level.

Chapter 6 specifies the minimum requirements for establishing a **crediting baseline**, which helps ensure the additionality of any credits by ensuring a certain percentage of “own effort” (e.g., national, regional, and local actions that have resulted in emissions reductions). Only those sector-based offset credits issued by the implementing jurisdiction that represent emissions reductions below the crediting baseline would be eligible for recognition in California, other emissions trading systems, or other initiatives that decide to utilize this standard. The chapter specifies that the crediting baseline must be maintained or it will constitute a reversal as described in Chapter 11.

Chapter 7 specifies the minimum requirements for assessing leakage risk. This chapter requires the implementing jurisdiction to include a framework for managing and mitigating activity-shifting and market-shifting leakage to the extent feasible.

Chapter 8 specifies the minimum requirements for monitoring and reporting of emissions and emissions reductions. Robust monitoring and reporting are essential to the success of a climate

mitigation program. The chapter specifies that reporting must be done annually, factor in international standards, and account for uncertainty in any measurements. The report would be verified by a third-party verifier as specified in Chapters 3 and 9 and would need to be made publicly available.

Chapter 9 specifies minimum requirements for third-party verification. Any implementing jurisdiction would need to ensure it included third-party verification requirements that guarantee an independent verification of quantified emissions reductions and conformance with the jurisdiction's sector plan. This chapter specifies minimum verification training, experience, and accreditation requirements.

Chapter 10 specifies minimum social and environmental safeguard requirements. This would include provisions to ensure that any implementing jurisdiction has robust consultation, public participation, and participatory management requirements, in particular of local and indigenous communities. The provisions would require transparent documentation of this process, third-party verification of such documentation, a grievance mechanism process, and benefits sharing requirements. These social and environmental safeguards would build on international best practice principles, criteria, and indicators. California or any other jurisdictions or programs that choose to use this standard will only assess those implementing jurisdictions which can demonstrate a strong commitment to and successful implementation of rigorous social and environmental safeguards within their sector-based crediting programs.

Chapter 11 specifies that any implementing jurisdiction would need to ensure the permanence of any emission reductions, build in specified risk factors and a buffer pool in the event of a reversal, and invalidation criteria (e.g., buyer liability) such that the environmental integrity of credits issued by a linked program is always maintained.

Chapter 12 specifies that implementing jurisdictions would need to demonstrate and ensure effective enforcement of the requirements of their sector-based crediting programs.

Chapter 13 specifies that any implementing jurisdiction would need to ensure public access to its credit registry, emissions data, verification, and safeguards reports, and a transparent website on which all information required of the program would be publicly available. This would include all mapping data, remote sensing data, results of any grievance processes, and if applicable, data on nested projects (i.e., projected nested within a broader sector-based crediting program).

Chapter 14 specifies the schedule under which any implementing jurisdiction would need to update sector-based crediting plans, reference levels, crediting periods, and crediting baselines to reflect the best available information.

Chapter 15 specifies that any implementing jurisdiction that includes nested projects within its sector-based crediting program would need to follow additional, robust, project-specific criteria – in addition to all of the other requirements listed in this standard.

Chapter 16 specifies how sector-based offset credits issued by an implementing jurisdiction would need to be retired and transitioned to a greenhouse gas emissions trading system, if the implementing jurisdiction has linked with that emissions trading system. This transition process would require retirement of credits from the implementing jurisdiction's registry.

Chapter 1. Purpose and Definitions

1.1. Purpose

- (a) The purpose of the California Tropical Forest Standard is to establish robust criteria against which to assess jurisdictions seeking to link their sector-based crediting programs that reduce emissions from tropical deforestation with an emissions trading system (ETS), such as California's Cap-and-Trade Program.
- (b) The standard builds on existing norms and requirements from the Intergovernmental Panel on Climate Change (IPCC), the United Nations Framework Convention on Climate Change (UNFCCC), and other international bodies such as the World Bank's Forest Carbon Partnership Facility and Carbon Fund, previous staff work evaluating recommendations from the REDD Offset Working Group (ARB 2015a; ROW 2013), voluntary carbon market organizations, and efforts from within member states and provinces of the Governors' Climate and Forests (GCF) Task Force.¹
- (c) As a point of reference, California's Cap-and-Trade Regulation, in sections 95991-95994, establishes general requirements that any sector-based crediting program would need to meet to be considered by the California Air Resources Board (ARB). These general requirements provide the framework for structuring the California Tropical Forest Standard. Any sector-based crediting program must be designed by the implementing subnational jurisdiction to include the following:
 - (1) Sector Plan. The implementing jurisdiction has established a plan for reducing emissions from the sector.
 - (2) Monitoring, Reporting, Verification, and Enforcement. The program includes a transparent system that regularly monitors, inventories, reports, verifies, and maintains accounting for emission reductions across the program's entire sector, as well as maintains enforcement capability over its reference activity producing credits.

¹ <https://gcftf.org/>

- (3) Offset Criteria. The program has requirements to ensure that offset credits generated by the program are real, additional, quantifiable, permanent, verifiable and enforceable.
 - (4) Sectoral Level Performance. The program includes a transparent system for determining and reporting when it meets or exceeds its crediting baseline(s), and evaluating the performance of the program’s sector during each program’s crediting period relative to the business-as-usual or other emissions reference level.
 - (5) Public Participation and Participatory Management Mechanism. The program has established a means for public participation and consultation in the program design process.
 - (6) Nested Approach. If applicable, the program includes:
 - (A) Offset project-specific requirements that establish methods to inventory, quantify, monitor, verify, enforce, and account for all project-level activities
 - (B) A system for reconciling offset project-based greenhouse gas (GHG) reductions in sector-level accounting from the implementing jurisdiction.
- (d) The California Tropical Forest Standard establishes the specific requirements any sector-based crediting program would need to meet to be considered by an ETS or other GHG emissions reduction program that utilizes the standard. This standard is intended to establish criteria that build on and complement existing efforts underway internationally and a robust model for other emissions trading systems and climate mitigation programs to use.



1.2. Definitions and Abbreviations

- (a) For purposes of this standard, the following definitions apply:

“Activity-Shifting Leakage” means increased deforestation and/or degradation that results from the displacement of activities or resources from inside the implementing jurisdiction’s geographic boundaries to areas outside the

implementing jurisdiction's geographic boundaries as a result of the sector-based crediting program activity.

“Cap-and-Trade Regulation” or “Regulation” refers to title 17, California Code of Regulations, sections 95801-96022.

“Crediting baseline” refers to the level established for the purpose of crediting under the implementing jurisdiction's sector-based crediting program. The crediting baseline will be specific to the implementing jurisdiction and is an annual measure of absolute GHG emissions set below the reference level by taking into account local, regional, jurisdictional, and national greenhouse gas emissions reductions or enhanced sequestration requirements or incentives affecting tropical deforestation within the implementing jurisdiction.

“Crediting period” is the 5-year period during which the reference level is applicable for purposes of determining crediting.

“Deforestation” means direct human-induced conversion of forested lands to non-forested lands.

“Degradation” means, consistent with IPCC definitions, direct human-induced long-term loss (persisting for X years or more) of at least Y per cent of forest carbon stocks (and forest values) since time (T) and not qualifying as deforestation. The variables in this definition would be jurisdiction-dependent.

“Emissions trading system” or “ETS” means a carbon pricing regulatory compliance program, such as California's Cap-and-Trade Program, designed to reduce greenhouse gas emissions by placing a cap on total emissions generated by emitting sources covered by the system and allowing the trading of compliance instruments such as emissions allowances (or permits) and offset credits, including sector-based offset credits. ETS in the context of this standard also refers to the jurisdiction or governmental body responsible for implementing the ETS.

“Forest” or “tropical forest” means native forests within the tropics. Species types and forest types will depend on each specific subnational jurisdiction. Accounting pursuant to this standard, including establishing the reference level and crediting

baseline must take into account deforestation and degradation (if applicable) of native forests.

“Forest-dependent communities” is intended as an expansive term that includes indigenous peoples and indigenous governments as specified in the Paris Agreement to the UNFCCC (UNFCCC 2015) and the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP 2007), as well as rural and local communities, who depend on the forest and forest resources as their main source of food and livelihoods. Forest-dependent communities may rely on the forest and forest resources for their culture, history, health, and many other aspects of their lives. This term, for purposes of this standard, is not intended to be definitive and includes people who live near forests but have agricultural livelihoods and use forests to supplement their consumption and income-generating activities, as well as rural people whose main income comes from labor supplied to forest-based commercial activities.² (FAO 2017)

“Implementing jurisdiction” refers to a subnational jurisdiction that designs and implements a sector-based crediting program.

“Leakage” includes both market-shifting leakage and activity-shifting leakage.

“Linkage” means the approval of compliance instruments from a sector-based crediting program for use in an ETS. In the California context, this would be conducted pursuant to the requirements of Subarticle 12 of the California Cap-and-Trade Regulation.

“Market-Shifting Leakage” means increased deforestation and/or degradation outside the geographic boundaries of the implementing jurisdiction due to the effects of a sector-based crediting program on an established market for goods or services.

“Monitoring” means the ongoing collection and archiving of all relevant and required data for determining the reference level, crediting baseline, reduced emissions, and quantifying GHG emissions reductions that are attributable to the sector-based crediting program.

² This expansive definition was adapted in large part from a Policy Brief of the Food and Agricultural Organization of the United Nations. (FAO 2017).

“Native forest” means forest occurring naturally in an area, as neither direct nor indirect consequences of recent human activity. Native forest must maintain a diversity of native species and multiple ages. Native forest do not include monoculture or industrial plantations.

“Nested Project” means an offset project that is included within (e.g., nested) the implementing jurisdiction’s sector-based crediting program. Nested projects may be operated by forest-dependent communities, private or public entities, and other actors at a smaller scale within the jurisdiction-scale accounting framework of the sector-based crediting program.

“Permanent” means that emissions reductions resulting from efforts to reduce tropical deforestation and/or degradation must not be reversed and must endure for at least 100 years. In the context of reduced tropical deforestation, it is important to recognize that although reducing emissions from human-induced deforestation are the emissions reductions being credited, and while it is not necessary to monitor the permanence of individual trees, it is necessary for the jurisdiction to annually stay below its crediting baseline to maintain permanence. This standard requires sector-based crediting programs to include mechanisms, in the unlikely event of a reversal, to replace any reversed GHG emissions reductions to ensure that all credited emissions reductions endure for at least 100 years in a manner comparable to ARB offset credits issued pursuant to the Compliance Offset Protocol for U.S. Forest Projects under the California Cap-and-Trade Program.

“Reference Level” means the average annual quantity of GHG emissions that have occurred because of tropical deforestation and degradation, if applicable, during the normal course of business or activities during the reference period within the geographic boundaries of the implementing jurisdiction. Requirements for determining the reference level are specified in Chapter 4 of this standard.

“Reference Period” means a 10 consecutive year period used to set the reference level. The first reference period shall be a 10-year period that ends no more than 24 months prior to linkage with an ETS.

“Reversal” means a GHG emissions reduction for which a sector-based offset credit is recognized and transitioned into an ETS that is later determined to have never

occurred or that does not satisfy the permanence requirement. Reversals are measured on net against the implementing jurisdiction's crediting baseline.

“Sector” or “Sectoral,” when used in conjunction with sector-based crediting programs, means a group or subgroup of an economic activity, or a group or cross-section of a group of economic activities, within a jurisdiction.

“Sector-Based Crediting Program” is a GHG emissions-reduction crediting mechanism established by a country, region, or subnational jurisdiction in a developing country and covering a particular economic sector within that jurisdiction. A program's performance is based on achievement toward an emissions reduction target for the particular sector within the boundary of the jurisdiction.

“Sector-Based Offset Credit” means a credit issued from a sector-based crediting program once the crediting baseline for a sector has been reached. Each sector-based offset credit would represent one metric ton of carbon dioxide equivalent (MTCO_{2e}). Jurisdictional sector-based offset credits are issued by an implementing jurisdiction and ETS sector-based offset credits are issued by an ETS.

“Sector plan,” as described in Chapter 3 of this standard, refers to the strategic implementation plan for the tropical forest sector within the implementing jurisdiction. The sector plan describes the legal, policy, and program tools within the implementing jurisdiction's overall strategy to reduce drivers of deforestation. These drivers may be jurisdiction-specific and can include agricultural drivers such as land conversion for cropland expansion and cattle ranching, land conversion for housing expansion, extractive industries such as timber harvesting, mining, and oil and gas exploration and extraction, and other drivers of deforestation.

“Subnational jurisdiction,” or “jurisdiction,” for purposes of this standard, refers to a political subdivision of a country, typically taking the form of a state or province. Member jurisdictions of the GCF Task Force are examples of subnational jurisdictions.

“Unintentional Reversal Event” means a loss of forest biomass due to wildfires or disease that is not the direct result of negligent, willful, or intentional human

activity. The loss of biomass would have occurred regardless of the existence of an implementing jurisdiction's sector-based crediting program and as a result, the jurisdiction's reference level and crediting baseline will be adjusted to reflect the loss.

- (b) For terms not defined in Subchapter 1.2, subparagraph (a), the definitions in section 95802 of the Cap-and-Trade Regulation apply.
- (c) For purposes of this standard, the following acronyms apply:
 - “ARB” refers to the California Air Resources Board.
 - “CITSS” means Compliance Instrument Tracking System Service.
 - “ETS” means emissions trading system, such as California’s Cap-and-Trade Program
 - “FSC” means Forest Stewardship Council.
 - “GCF” refers to the Governors’ Climate and Forests Task Force.
 - “GHG” means greenhouse gas.
 - “GIS” means Geographic Information Systems.
 - “IPCC” refers to the Intergovernmental Panel on Climate Change.
 - “MTCO_{2e}” refers to metric ton of carbon dioxide equivalent.
 - “PEFC” means Program for the Endorsement of Forest Certification.
 - “UNDRIP” refers to the United Nations Declaration on the Rights of Indigenous Peoples.
 - “UNFCCC” refers to the United Nations Framework Convention on Climate Change.

Chapter 2. Applicability

The California Tropical Forest Standard applies to subnational jurisdictions that have developed jurisdiction-scale programs to reduce emissions from deforestation and degradation, if applicable, of tropical forests within the geographic boundaries of the jurisdiction, and which are seeking to link their programs to an ETS.

Chapter 3. Sector Plan

The sector plan outlines the programmatic elements an implementing jurisdiction would need to include in its sector-based crediting program. The jurisdiction must

demonstrate through its sector plan that its program was developed through a robust regulatory development process, public participation process, and participatory management process. The sector plan must also transparently demonstrate the implementing jurisdiction's methodology for developing a reference level, monitoring, reporting, and verification requirements, and how its jurisdictional program fits within any national program to reduce emissions from tropical deforestation and degradation (if applicable). Minimum requirements and criteria for each of these elements is further detailed in subsequent Chapters below.

- (a) The implementing jurisdiction's sector plan must include a description of the legal, policy, and program tools that the jurisdiction will use to reduce emissions across the tropical forest sector within the jurisdiction's geographic boundaries, as well as any mechanisms it will use to minimize leakage of emissions (i.e., from deforestation or degradation) outside of its borders to the extent feasible under law.
- (b) The sector plan must describe the process used for designing the sector-based crediting program, include specific metrics for each requirement as specified in Chapters 3 through 15, and ensure these metrics are reported in the jurisdiction's annual report and independently verified. The sector plan must include a demonstration of public participation and a description of how the rights of forest-dependent and other local communities are fully respected, including their rights to participation, public consultation, lands, territories, and resources, through the implementation of social and environmental safeguards specified in Chapter 10. An ETS that utilizes this standard will only assess those implementing jurisdictions that can demonstrate a strong commitment to, and successful implementation of, rigorous social and environmental safeguards within their sector-based crediting programs.
- (c) The implementing jurisdiction must demonstrate that the sector plan's public participation program includes the following:
 - (1) A series of open meetings that ensure transparent and timely access to information and are held within close proximity to communities directly

- affected by jurisdictional policies and decision-making with regard to the implementing jurisdiction's sector-based crediting program;
- (2) A series of open meetings that ensure effective stakeholder engagement across all relevant stakeholder groups and incorporate socioeconomic, socio-cultural, and gender responsive procedures, accounting for these differences in communities most affected by jurisdictional policies and decision-making with regard to the implementing jurisdiction's sector-based crediting program; and
 - (3) Documentation substantiating that the public participation process included the meetings described in Chapter 3, subparagraphs (c)(1) and (c)(2), and adhered to the social and environmental safeguards specified in Chapter 10.
 - (4) Additional documentation demonstrating consistency with stakeholder engagement principles, such as the REDD+SES Version 2 (REDD+SES 2012) and the Forest Carbon Partnership Facility's *Guidelines on Stakeholder Engagement in REDD+ Readiness With a Focus on the Participation of Indigenous Peoples and Other Forest Dependent Communities* (FCPF 2012), may be used to help substantiate the public participation process adhered to the requirements in Chapter 10.
- (d) The sector plan must include a description of each element of the implementing jurisdiction's sector-based crediting program specified in Chapters 3 through 15, including a detailed description of the methodology utilized by the implementing jurisdiction to develop a reference level based on the provisions in Chapter 4.
- (1) This description must include transparent, high-quality, spatially explicit mapping data for above-ground biomass using remote sensing technology that has been calibrated to the implementing jurisdiction against ground-level measurements from within the jurisdiction as specified in Chapter 4, subparagraph (d)(1).
 - (2) The sector plan must include a definition of the implementing jurisdiction's individual values for carbon stocks in metric tons of carbon for each of the jurisdiction's forest types by hectare, and a weighted average value for the

entire jurisdiction. It must also define an error range above and below the average value(s) specified in Chapter 4, subparagraph (e).

- (e) The sector plan must include a description of how monitoring, reporting, and verification duties will be separated to avoid conflicts of interest.
- (f) The sector plan must establish a quantitative uncertainty measurement methodology that calculates any error in data measurement and any error in remote sensing technology. The error calculation resulting from this quantitative uncertainty measurement methodology must be updated annually in the greenhouse gas emissions reports as specified in Chapter 8.
- (g) The sector plan must describe how the implementing jurisdiction's sector-based crediting program is compliant with, fits within, and avoids double counting with any other voluntary or mandatory program's efforts to reduce emissions from deforestation and forest degradation, including any approved Nationally Determined Contribution under the Paris Agreement of the UNFCCC. (UNFCCC 2015)
- (h) The sector plan, including any subsequent revisions, must be made publicly available on the webpage described in Chapter 13.
- (i) The sector plan must be updated according to the schedule in Chapter 14, subparagraph (a).

Chapter 4. Reference Level

The implementing jurisdiction must develop a reference level defined as the quantity of GHG emissions that have occurred during **business-as-usual** activities during a designated period of time within the geographic boundaries of the implementing jurisdiction. The reference level must be developed consistent with IPCC methodologies using transparent and high-quality remote sensing and ground-level data, best available historical annual deforestation rates, and must be updated periodically. **The crediting baseline**, and any resulting sector-based crediting, as described in Chapter 6 **is measured against the reference level.**

- (a) The reference level shall represent **an historical average of gross emissions from deforestation and, if applicable, degradation, over a 10 consecutive year period referred to as the reference period.** The first reference period shall be a 10-year

- period absent any influence from the jurisdictional sector-based crediting program that ends no more than 24 months prior to linkage with an ETS.
- (b) The reference level shall be based on the **annual estimate of total forest area cleared, expressed in metrics** that are consistent with IPCC methodologies, and if applicable, the national Forest Reference Level or Forest Reference Emission Level. A jurisdictional reference level serves as a benchmark for assessing progress achieved against a jurisdictional crediting baseline.
 - (c) The **reference level must be expressed in MTCO_{2e} per year;**
 - (d) The reference level shall be based on all of the following:
 - (1) Transparent and high-quality spatially explicit data using remote sensing technology with known sensitivity to variation in forest cover, structure, and biomass which has been calibrated using ground-level measurements from within the implementing jurisdiction;
 - (2) Annual emissions from deforestation and, if applicable, degradation, from a period of ten consecutive years averaged over the ten years, based on best available data;
 - (3) The reference level must include, at a minimum, above-ground biomass consistent with IPCC methods (also called above-ground standing live carbon stocks under California's Compliance Offset Protocol U.S. Forest Products (ARB 2015b)). All carbon pools included in the reference level must also be included in the implementing jurisdiction's crediting baseline as described in Chapter 6.
 - (e) If an implementing jurisdiction includes both deforestation and degradation in its reference level, the methodology used to determine annual averaged rates of deforestation and degradation, based upon peer-reviewed science reflecting regional differences within the jurisdiction, must be accounted for separately and included within the implementing jurisdiction's sector plan described in Chapter 3.
 - (f) Non-native forests must be identified separately (spatially and through separate accounting) and **excluded** from the jurisdictional reference level and crediting baseline accounting.
 - (g) The reference level may be updated to reflect an unintentional reversal event.

- (h) The reference level must be updated according to the schedule in Chapter 14, subparagraph (b).

Chapter 5. Crediting Period

For purposes of sector-based crediting programs, a crediting period is a span of years representing the time during which the reference level is applicable for purposes of determining crediting. Crediting periods must be updated according to the schedule in Chapter 14, subparagraph (c).

Chapter 6. Crediting Baseline

To ensure the additionality of any sector-based offset credits issued by the sector-based crediting program, the implementing jurisdiction must establish a crediting baseline at least 10% below the reference level described in Chapter 4.

- (a) The crediting baseline represents additional emissions reductions below the jurisdiction's reference level as a direct or indirect result of the implementation of local, regional, jurisdictional and national GHG emissions reductions or enhanced sequestration requirements or incentives affecting tropical deforestation and, if applicable, degradation, within the implementing jurisdiction. All carbon pools included in the reference level as described in Chapter 4 must also be included in the implementing jurisdiction's crediting baseline.
- (b) The jurisdiction may use progress toward achieving a future GHG emission reduction goal for the forest sector to meet its crediting baseline.
- (c) The implementing jurisdiction's sector plan, as described in Chapter 3, must describe the strategies and actions (e.g., "own effort") the implementing jurisdiction will undertake to reduce emissions to the level of the crediting baseline. These include domestic GHG mitigation strategies, policies, public financing, and planning actions, and must take into account issuance of any offset credits that are part of a voluntary offset program occurring within the jurisdiction.
- (d) Only those sector-based offset credits issued by the implementing jurisdiction after the crediting baseline has been met (e.g., reductions below the crediting

baseline) are eligible for recognition by an ETS pursuant to Chapter 16 below and for use by entities regulated within the ETS.

- (e) The crediting baseline must be maintained by the implementing jurisdiction in order for the credits to be eligible. Emissions that exceed the crediting baseline shall constitute a reversal under Chapter 11 and require that an equal amount of credits be retired from the ETS Sector-Based Crediting Program Buffer Pool pursuant to the implementing jurisdiction's reversal methodology and buffer requirements as described in Subchapters 11.1 and 11.2.
 - (1) The implementing jurisdiction's sector-based crediting program must include a methodology for ensuring permanence and identifying and quantifying the risk of reversals based on regionally specific circumstances, as specified in Chapter 11.
 - (2) Pursuant to Chapter 11, a quantity of sector-based offset credits from the credits issued by the implementing jurisdiction per year must be contributed to a sector-based crediting buffer account established for approved sector-based crediting programs and maintained by the ETS.
- (f) The jurisdiction's crediting baseline may be updated to reflect changes in the reference level as provided in Chapter 4, subparagraph (g).
- (g) The jurisdiction's crediting baseline must be updated according to the schedule in Chapter 14, subparagraph (c).

Chapter 7. Leakage

The implementing jurisdiction's sector-based crediting program must include a framework and mechanisms for managing and mitigating activity-shifting leakage and market-shifting leakage and for detecting and accounting for any residual leakage outside the implementing jurisdiction's borders. This must include a demonstration that drivers, agents, and causes of deforestation are directly addressed by the program within the implementing jurisdiction's geographic boundaries. This could include a demonstration of production of crops and livestock at a business-as-usual rate or accelerated rate accompanied by simultaneous lower deforestation and forest degradation rates. This could also include a demonstration of no increase in production

of extractive industry such as mining, timber, or oil and gas extraction accompanied by simultaneous lower deforestation and forest degradation rates.

Chapter 8. Monitoring and Reporting

The implementing jurisdiction must monitor emissions and prepare a report reflecting GHG emissions for each reporting period and include the following:

- (a) Reporting must be conducted in a manner consistent with IPCC methodologies and ISO 14064-1:2006.
- (b) Each report must include total GHG emissions from deforestation and, if applicable, degradation, as well as the quantity of emissions reductions achieved relative to the implementing jurisdiction's reference level and crediting baseline. Each reporting period reflects a one-year period, covering the calendar year from January 1 through December 31, and must assess changes in forest cover across the entire jurisdiction as specified in the implementing jurisdiction's sector plan against the jurisdiction's established reference level and against the established crediting baseline.
- (c) Each report must determine, to a high degree of accuracy, the extent to which emissions reductions resulting from reduced deforestation and, if applicable, degradation, are achieved and quantify the total number of sector-based offset credits that the implementing jurisdiction will issue against the established crediting baseline.
- (d) Each report must include an updated calculation pursuant to the quantitative uncertainty measurement methodology specified in the sector plan. A percent credit deduction shall be taken prior to issuance corresponding to the results of the uncertainty calculation.
- (e) Crediting will be based on the reported GHG emissions reductions resulting from reduced deforestation, and degradation, if applicable, after accounting for the uncertainty deduction, but before the buffer contribution is calculated pursuant to Chapter 11.
- (e) Each report must be certified by the implementing jurisdiction to be in compliance with the requirements of this standard, including the sector plan established pursuant to Chapter 3.

- (f) Each report must be posted to an internet webpage as described in Chapter 13 by June 1 of the year following the emissions data year.

Chapter 9. Third-Party Verification

The implementing jurisdiction must establish requirements for employing the use of independent third-party verifiers to ensure data quality and conformance with the sector plan pursuant to Chapter 3. Each GHG emissions data report specified in Chapter 8 must undergo third-party verification, in which a third-party verification body issues a verification report.

- (a) The sector plan shall describe a set of criteria which, at minimum, meets the following requirements:
 - (1) Third-party verification bodies shall be accredited in conformance with ISO 14064-3:2006 and ISO 14065:2013.
 - (2) A third-party verification body shall conduct verification of the implementing jurisdiction's sector plan in a manner that is consistent with the ISEAL Assuring Compliance with Social and Environmental Standards Code of Good Practice Version 2.0. (ISEAL Alliance 2018)
 - (3) The implementing jurisdiction's sector plan must include requirements for third-party verification bodies, including a requirement that third-party verification bodies must include individuals with demonstrated expertise through at least 2 years of professional experience and an advanced degree in the following fields:
 - (A) Forestry, with expertise in field-based forestry and licensing from a state, province, national, or professional organization;
 - (B) Statistics or forest biometrics, with expertise in sampling design, forest inventory, growth and yield modeling;
 - (C) Remote sensing and/or spatially-explicit Geographic Information Systems (GIS);
 - (D) Social and/or cultural anthropology and/or social ecology, with expertise in ethnography, social science research, or sociocultural analysis; and
 - (E) Indigenous and human rights.

- (b) The verification team must identify all potential conflicts of interest and attest to a lack of conflict of interest through a disclosure process designed and implemented following the jurisdictional sector-based crediting program's conflict of interest requirements, and consistent with section 95979 of the California Cap-and-Trade Regulation. Verification bodies must assess and report any conflicts of interest with regard to prior relationships with the jurisdiction, its consultants, nested project developers, where appropriate, and any other relevant entities involved with implementation of the jurisdictional program.
- (c) Each verification report must be posted to an internet webpage as described in Chapter 13 by March 1 of the year following the year the emissions data report was posted pursuant to Chapter 8, subparagraph (f).

Chapter 10. Social and Environmental Safeguards

In meeting the public participation and participatory management requirement specified in Chapter 3, subparagraphs (c)(1)-(2), the implementing jurisdiction must demonstrate the following:

- (a) Forest-dependent communities, including indigenous communities as specified in the Paris Agreement to the UNFCCC (UNFCCC 2015) and UNDRIP (UNDRIP 2007), were consulted during and participated in the design and ongoing implementation of the jurisdiction's sector plan. This demonstration would be submitted as part of the implementing jurisdiction's sector plan described in Chapter 3.
- (b) To ensure that forest-dependent communities and other representative stakeholder groups participate in the development of the sector plan and receive direct benefits as a result of the plan, the implementing jurisdiction's sector plan must include social and environmental safeguards that are equivalent to the principles and criteria specified in the REDD+SES Version 2 (REDD+SES 2012), and must provide narratives as to how each of these principles and criteria are met using indicators defined in the sector plan. Reference to additional documentation, such as the Green Climate Fund Indigenous Peoples Policy (Green Climate Fund 2018), may be used to help in demonstrating equivalency.

- (c) To ensure transparency of the implementation of these safeguards, the implementing jurisdiction must establish a publicly-accessible internet webpage where social and environmental safeguard reports are posted publicly in a timely manner. This webpage must also identify a grievance mechanism process through the implementing jurisdiction's equivalent of a public ombudsman. This webpage may be the same internet webpage as specified in Chapter 13.
- (d) The social and environmental safeguard report to be submitted by the jurisdiction may reference additional documentation, such as the World Bank's Social and Environmental Framework (World Bank 2016), and may be included as part of the annual GHG emissions data reports specified in Chapter 8 or may be submitted as separate reports.
- (e) The implementing jurisdiction's sector plan must include a requirement for third-party verification of the social and environmental safeguard reports, consistent with the requirements specified in Chapter 9.

Chapter 11. Permanence and Reversal Risk

A sector-based crediting program must ensure the permanence of any GHG emissions reductions. GHG emissions above the implementing jurisdiction's crediting baseline will constitute a reversal for purposes of this Chapter. The implementing jurisdiction will identify and quantify drivers of potential reversal, resulting in a risk reversal factor. This factor will be deducted from the total issued credits and transferred into a buffer pool.



11.1. Permanence

The sector-based crediting program must include a mechanism to compensate for any reversal. Such a mechanism must include a contribution of sector-based offset credits to a jurisdictional buffer pool. The ETS shall establish its own Sector-Based Crediting Program Buffer Pool to accept sector-based offset credits transitioned from the jurisdictional buffer pool.

11.2. Buffer Pool

The implementing jurisdiction shall contribute 10 percent of the total credits issued by the implementing jurisdiction per year, or the amount of credits identified by the buffer

pool contribution equation based on the reversal risk rating factors identified in Subchapter 11.3, whichever is higher. Upon linkage with the ETS, the implementing jurisdiction shall transition its buffer pool credits to be maintained in the ETS Sector-Based Crediting Program Buffer Pool.

11.3. Risk Assessment

Reversal risk assessment categories and associated quantified risk factors shall be updated based upon jurisdictionally-defined risks consistent with the required sector plan update schedule, as described in Chapter 14, subparagraph (b). Risk shall be demonstrated by the inclusion of a reversal risk deduction mechanism quantifying reversal risk due to the below categories. Each risk factor shall have its individual deduction (e.g., a jurisdiction-specific percentage deduction) within a buffer pool contribution equation established by the implementing jurisdiction, with a total risk rating resulting in the jurisdictional buffer pool contribution. This information must be reported within the annual GHG emissions data report described in Chapter 8.

- (a) Political and Governance Risk, including land insecurity, labor rights, governance structure, corruption, land ownership and cross-sector government collaboration. The implementing jurisdiction may utilize assessment tools such as the *VCS Jurisdictional and Nested REDD+ (JNR) Non-Permanence Risk Tool Version 3* (VCS Association 2013) to help determine the political and governance risk;
- (b) Management Risk, including conversion, illegal activities, and conservation overlays within 1 year, sustainable harvest, including tons generated from forests with an overlay of international forest certification programs including the Forestry Stewardship Council (FSC) and Program for the Endorsement of Forest Certification (PEFC); and
- (c) Financial Risk, including general economic conditions, reasons for deforestation (e.g., timber value, mining, agriculture and cattle expansion), and tax incentives.

11.4. Invalidation

If credits have been issued for GHG emissions reductions that are subsequently found to be in error, these credits may be invalidated as detailed in section 95985(c) of the California Cap-and-Trade Regulation and the holder of these credits would be

responsible for the replacement of these credits. For the California context, the process for invalidation by ARB ensures that ARB maintains the ability to enforce against the requirements of the California Cap-and-Trade Regulation at all times.

Chapter 12. Enforcement

The implementing jurisdiction must ensure effective enforcement of the requirements of its sector-based crediting program. Enforcement must include regulatory oversight of any public or private individual, corporation, company, or other entity involved in the implementation, including monitoring, reporting, and verification, of the sector-based crediting program, including with respect to any nested project. Enforcement actions must be tracked by the implementing jurisdiction.

Chapter 13. Registry and Public Access

The implementing jurisdiction must establish and maintain an electronic registry database system and webpage to track and store information on monitoring data, emissions data reports, verification reports, social and environmental safeguard reports, issuance and transfer of jurisdictional sector-based offset credits, and to demonstrate proof of retirement.

- (a) In order to ensure transparency and public access, the implementing jurisdiction must:
 - (1) Maintain a free, publicly-accessible internet webpage portal within the registry where monitoring, reporting, and verification data are posted publicly and maintained over time; or
 - (2) Establish and maintain a free, publicly-accessible internet webpage portal within the implementing jurisdiction's government webpages where monitoring, reporting, and verification data are posted publicly and maintained over time.
- (b) The internet webpage must be designed to maintain the highest data and access integrity. It must also be designed with stringent security measures to prevent unauthorized access.
- (c) The electronic registry database system may need to be fully compatible with national registries, if one exists.

- (d) The publicly-accessible information must include the implementing jurisdiction's sector plan, mapping files (GIS files, shapefiles, etc.) used for conducting jurisdiction-wide mapping of forest cover, annual emissions data reports, conversion factors associated with the annual emissions data reports, third-party verification reports, data sheets with subtotals for each carbon pool that lead to the annual total emissions reported, risk reduction estimates per Subchapter 11.3, buffer contribution estimates per Subchapter 11.2, and reports from the implementing jurisdiction's equivalent of a public ombudsman, if applicable. The implementing jurisdiction must also include English translations of all of this information and make that version available on the website. Any personally identifiable information, confidential cultural resources information, and other confidential information that is either required to be protected by law in the implementing jurisdiction or could result in harm to an individual or community must be redacted from the information included on the registry described in this Chapter.
- (f) If the implementing jurisdiction's sector-based crediting program includes nested projects, the registry must:
- (1) Be capable of presenting all information traceable to specific projects, tracing credits back to the location the credits originated from, and include free publicly-available data sets, associated equations, spatially-explicit maps, summary reports, and verification reports;
 - (2) Provide a mechanism by which each project's individual carbon pool of GHG reductions and associated data is presented with clear and established procedures for each step; and
 - (3) Establish deadlines by which projects must be listed, verified, and submitted for jurisdictional review that are consistent with the annual reporting and verification requirements of the implementing jurisdiction's sector-based crediting program.

Chapter 14. Schedule for Updates

Implementing jurisdictions must update elements of their jurisdictional programs pursuant to the following schedule:

- (a) Sector Plan. Sector plans must be updated at least every 10 years.
- (b) Reference Level. A jurisdictional reference level must be updated every 5 years using a 10-year average of the annual estimate of emissions from deforestation and, if applicable, degradation.
- (c) Crediting Period. Crediting periods must be updated consistently with any reference level changes.
- (d) Crediting Baseline. Crediting baselines must be updated consistently with any reference level changes.

Chapter 15. Nested Projects

As specified in Chapter 1, the purpose of this standard is to establish the criteria against which an ETS would assess potential partner jurisdictions seeking to link their sector-based crediting programs that reduce emissions from tropical deforestation with the ETS. This chapter is intended as a placeholder to provide guidance to sector-based crediting programs that may seek to include nested projects as part of their programs in the future. If the implementing jurisdiction's sector-based crediting program includes nested projects, the following criteria must be included for the program to be approved by an ETS utilizing this standard:

- (a) The registry and public webpage must include a transparent system for reconciling nested offset project-based GHG reductions in sector-level accounting.
- (b) The implementing jurisdiction's sector plan must include the jurisdiction's procedure by which each project will establish a project-level, historical average baseline that reflects and fits within the jurisdiction's reference level. The implementing jurisdiction must ensure that project-level crediting comports with and ensures there is no double counting against the jurisdiction-level accounting and crediting.
- (c) Each project must submit a GHG emissions data report to the implementing jurisdiction.
- (d) Each project must undergo independent, third-party verification pursuant to the implementing jurisdiction's sector plan requirements.

- (e) Each project must ensure that the social and environmental safeguards are met, as defined within the jurisdictional sector plan, and consistent with REDD SES+ Version 2 (REDD+SES 2012) principles and criteria. The jurisdiction's social and environmental safeguard program must receive a positive verification consistent with the Climate, Community and Biodiversity Standards Version 3.1 (VCS Association 2017). Verification must use the ISEAL Social and Environmental Standards Code of Good Practice Version 2.0 (ISEAL Alliance 2018) to support the verification review.
- (f) Any offset credits issued to the project by the implementing jurisdiction must be contained in the implementing jurisdiction's registry. Project-level information, including mapping files (GIS files, shapefiles, etc.) used to conduct mapping of forest cover, annual emissions data reports, third-party verification reports, and reports from the implementing jurisdiction's equivalent of a public ombudsman, if applicable, must be made publicly available in the same manner and from the same free, publicly-accessible internet webpage described in Chapter 13 as jurisdiction-level information.

Chapter 16. Recognition Process for Transitioning Sector-Based Offset Credits

Once an approved sector-based crediting program has demonstrated reduced emissions below its crediting baseline and issued jurisdictional sector-based offset credits within the implementing jurisdiction's registry, those credits are eligible for recognition by an ETS.

- (a) In order to transition those credits into the tracking system of the ETS (e.g., the Compliance Instrument Tracking System Service (CITSS) of the California Cap-and-Trade Program), a request for recognition of ETS sector-based offset credits must be submitted to the ETS. The implementing jurisdiction or an entity registered in the tracking system that has been designated by the implementing jurisdiction may submit the request for recognition. The request for recognition must indicate the holding account into which the ETS would transfer the ETS sector-based offset credits.
- (b) One ETS sector-based offset credit will be issued for one jurisdictional sector-based offset credit generated under the implementing jurisdiction's approved

sector-based crediting program. If the implementing jurisdiction ceases complying with its sector plan and/or no longer meets the provisions of this standard, the ETS may deny the implementing jurisdiction's request for recognition of sector-based offset credits submitted pursuant to Chapter 16, subparagraph (a).

- (c) Once the ETS has issued ETS sector-based offset credits, the sector-based crediting program must retire an equal number of jurisdictional sector-based offset credits from its registry and the implementing jurisdiction or the entity requesting recognition must provide proof of retirement to the ETS before the ETS may transfer ETS sector-based offset credits into recipient holding accounts and into the ETS Sector-Based Crediting Program Buffer Pool.
- (d) The ETS may transfer ETS sector-based offset credits into the holding account(s) specified in the request for recognition as specified in Chapter 16, subparagraph (a). Proof of retirement from the implementing jurisdiction must be provided to the ETS prior to the transfer of ETS sector-based offset credits. Proof of retirement must also be made publicly available through the same free, publicly-accessible internet webpage described in Chapter 13.

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