



Ongoing Evaluation of the Potential for Sector-Based Offset Credits in California's Cap-and-Trade Program

March 22, 2016

Workshop Materials & Submitting Comments

- ❑ Presentation posted at:
<http://www.arb.ca.gov/cc/capandtrade/meetings/meetings.htm>
- ❑ White papers and background materials available at:
<http://www.arb.ca.gov/cc/capandtrade/sectorbasedoffsets/sectorbasedoffsets.htm>
- ❑ Written comments on this workshop and technical paper may be submitted until 5pm (Pacific Time) on Friday, April 8, 2016 at:
<https://www.arb.ca.gov/cc/capandtrade/meetings/meetings.htm>
- ❑ During this workshop, email questions to:
auditorium@calepa.ca.gov

Workshop Agenda

- ❑ Introduction
- ❑ Overview of ongoing evaluation
- ❑ Technical topics
 - ❑ Program Scope and Crediting Pathway
 - ❑ Reference Level
- ❑ Lunch Break
- ❑ Technical Topics
 - ❑ Crediting Baseline
 - ❑ Monitoring and Reporting Requirements
- ❑ Possible Next Steps
- ❑ Adjourn

California's Forestry Efforts in Context

- ❑ Governor direction to restore and protect forests
- ❑ Promoting forest conservation and restoration at home and beyond
 - ❑ Scoping Plan and Forest Carbon Plan
 - ❑ Climate Investments from auction proceeds
 - ❑ Cap-and-Trade Program
 - ❑ Compliance Offset Protocol for US Forest Projects
 - ❑ Potential for International Forestry Sector-Based Offset Credits
- ❑ International Partnerships and Leadership
 - ❑ Governors' Climate and Forests Task Force
 - ❑ UN New York Declaration on Forests
 - ❑ Rio Branco Declaration
 - ❑ Under 2 MOU

Why is California interested in tropical forests?

- ❑ AB 32 calls for California to take leadership role in environmental policy
- ❑ International recognition that climate change cannot be addressed without addressing tropical deforestation
- ❑ Many co-benefits of reducing deforestation
 - ❑ Similar to benefits of preserving California's forests
 - ❑ Research indicates link between tropical deforestation and reduced California precipitation
- ❑ Important cost-containment for Cap-and-Trade covered entities
- ❑ Cost-effective mitigation mechanism
- ❑ Engages developing countries in low-carbon growth
- ❑ Called out in 2008 AB 32 Scoping Plan and again in 2014 First Update to the AB 32 Scoping Plan

Purpose of Today's Workshop

- ❑ Staff white paper from October 19, 2015
 - ❑ Summarized California's work-to-date on tropical forests
 - ❑ Outlined recommendations that form the basis of ongoing staff analysis
 - ❑ Described potential next steps, including additional technical work such as the topics outlined for today's discussion
- ❑ October 28, 2015 workshop
 - ❑ Received ~50 comment letters, some supportive and some expressing concerns on policy and technical issues
 - ❑ ARB staff continues to seeking feedback on technical design elements as well as potential mechanisms to mitigate or avoid some of the stakeholder concerns
 - ❑ Additional technical topics tentatively scheduled for workshops in April

Technical Discussion Topics

Scope of the Program

- ❑ What is being measured?
 - ❑ Which forest carbon emissions would be counted?
 - ❑ How would carbon uptake from forest growth be accounted for?
- ❑ ROW Recommendation:
 - ❑ Only accept credits from deforestation/degradation emissions reductions, rather than carbon stock enhancement. Deforestation and degradation are simpler to measure and verify, and result in more conservative (e.g., less) crediting
 - ❑ If carbon enhancement methodology proves itself, then potentially include it later
- ❑ Current staff thinking:
 - ❑ Allow crediting only for programs that can accurately measure, report, and verify reductions from deforestation and degradation

Scope of the Program (cont.)

- ❑ Seeking input on:
 - ❑ Which emissions reductions to measure and verify for crediting?
 - ❑ Reductions in deforestation rate; and/or
 - ❑ Reductions in degradation rate; and/or
 - ❑ Carbon stock enhancements
 - ❑ How could potential regulatory provisions allow for jurisdictional programs that currently only measure for reductions in deforestation, while incentivizing adding in reductions in degradation once the jurisdiction is able to measure and verify such reductions?

Crediting Pathway

- ❑ Crediting pathway refers to who issues credits and who receives them.
- ❑ Options:
 - ❑ Partner Jurisdiction issues and sells credits
 - ❑ Partner jurisdiction issues credits within its offset tracking registry
 - ❑ Partner jurisdiction retires credits from its offset tracking registry and requests transition to ARB sector-based offset credits (proof of retirement would be required)
 - ❑ Partner jurisdiction sells to CA compliance entity directly
 - ❑ Nested crediting, in which individual projects within the jurisdiction are eligible for crediting
 - ❑ Partner jurisdiction issues credits, but directly to nested project within jurisdiction offset tracking registry
 - ❑ Nested project sells directly to CA compliance entity, and then seeks to transition to ARB sector-based offset credits (proof of retirement would be required)

Crediting Pathway (Cont.)

- ❑ Current staff thinking:
 - ❑ Focus on jurisdictional crediting for now, and continue evaluating role of nested-project crediting for potential future rulemaking
- ❑ Seeking input on:
 - ❑ Should ARB only consider jurisdiction-level crediting?
 - ❑ If nested project-level crediting is considered, what criteria would need to be met?
 - ❑ Project-specific monitoring, reporting, and verification requirements?
 - ❑ Project-specific social and environmental safeguards?
 - ❑ Other criteria?
 - ❑ How could a phased approach work?
 - ❑ 1st rulemaking allow only jurisdiction-level crediting
 - ❑ Later rulemaking could incorporate nested project crediting

Questions?

Reference Level & Crediting Baseline

Reference Level

- ❑ **Reference Level** means “the quantity of GHG emission equivalents that have occurred during the normal course of business or activities during a designated period of time within the boundaries of a defined sector and a defined jurisdiction.”
- ❑ Staff’s **current thinking** is that this would translate into a historic annual emissions estimate averaged over 10 consecutive years.

Reference Level

- ❑ For example, a jurisdiction could have a reference level of 496 Km² based on measured deforestation emissions from 2001-2010.
- ❑ A reference level serves as a proxy for emissions that would have occurred with no jurisdictional program under a BAU scenario. It takes into account legal constraints and implementation of plans implemented during that time-period.

Reference Level

Annual Deforestation	
Year	Deforestation (Km2)
2001	419
2002	883
2003	1078
2004	728
2005	592
2006	398
2007	184
2008	254
2009	167
2010	259
Total	4962
Average deforestation AD = 4,962/10	496

- Convert km² to ha: 496 km² x 100 = 49600
- average carbon stock of the state/province = 123 MT/ha
- 49,600 x 123 = 6,100,800 ha
- C/CO₂ Conversion factor: 3.667
- = 22,400,000 MtCO₂

Reference Level

- ❑ Staff is **seeking stakeholder input** on the use of the historic annual emissions estimate averaged over 10 consecutive years approach.
- ❑ Staff recognizes this approach would not accommodate jurisdictions that have high carbon stocks and low deforestation, but high deforestation threat.
- ❑ Staff is **seeking stakeholder input** on potential methodologies to set a Reference Level for those jurisdictions that have:
 - ❑ Low historic deforestation with high carbon stocks
 - ❑ near-term threat of removal of deforestation (*how to define near-term threat?*)
 - ❑ Forest has high conservation value (HCV) (*how to define HCVs or use of existing designations?*)

Reference Level

- ❑ **Reference Period** means a specified period of time over which the Reference Level would be applicable.
- ❑ Reference Periods could be updated periodically to reflect changes in global forest market conditions:

Example		
Period	Reference Level (RL) based on data from	Reference Period during which RL would be applicable
1	2006-2015	2016-20xx

Reference Level Data

❑ Reference Level Data

- ❑ Must be publicly available and transparent
- ❑ Must be replicable
- ❑ Must be composed of best available data
- ❑ Must arise from high quality, spatially explicit activity using remote sensing that has been calibrated against ground-level measurements
- ❑ Carbon pools included in Reference Level and Crediting Baseline would be the same

Carbon Pools and Categories for Reference Level and Crediting Baseline

- ❑ Carbon pools and categories must be the same in Reference Level and Crediting Baseline
 - ❑ Staff is **seeking input** on allowable carbon pools to include/exclude
 - ❑ above-ground carbon stocks only, below ground carbon, soils, etc. Currently thinking above-ground carbon stocks only.
- ❑ Staff's current thinking on program scope (categories) for potential consideration/crediting would only include deforestation and degradation (not afforestation, reforestation)
 - ❑ However, staff is **seeking input** on categories to include/exclude when determining reference levels and crediting baselines

Questions?

Break for Lunch

Crediting Baseline

- **Cap-and-Trade Regulation defines Crediting Baseline:**

“...the reduction of absolute GHG emissions below the business-as-usual scenario or reference level across a jurisdiction’s entire sector in a sector based crediting program after the imposition of greenhouse gas emission reduction requirements or incentives.”

Crediting Baseline

- ❑ What is a crediting baseline:
 - ❑ Establishes a performance level that is below the Reference Level
 - ❑ Average annual estimate that reflects a jurisdiction's commitment implementing its own efforts taking into account existing policies, laws, and plans
 - ❑ Could be driven by a future GHG emission reduction goal from the forest sector

Crediting Baseline

❑ Why a crediting baseline:

- ❑ Creates an incentive for reductions across the forest sector.
- ❑ Allows forest sector emission reductions to be incentivized through a combination of the jurisdiction's own efforts (e.g., public financing, offsets through the voluntary market, subnational policies and planning) and a market-based compliance-grade offset program
- ❑ Ensures any credits issued for a market-based compliance-grade program are additional to business-as-usual
- ❑ Once the jurisdiction meets its crediting baseline, or is on its way toward meeting its crediting baseline, credits could be converted to Sector Based Offset Credits (S-BOCs)

Crediting Baseline – Potential Options

- ❑ Option 1: Trajectory with annual targets and proportional emission reductions
- ❑ Option 2: A uniform percentage reduction below Reference Level
- ❑ Staff is **seeking stakeholder input** on these 2 potential options and other potential approaches

Option 1 - Setting a Jurisdictional Crediting Baseline

Option 1: Trajectory with annual targets and proportional emission reductions

e.g., Reduce deforestation below reference level years 1996-2006 by 80% by 2020

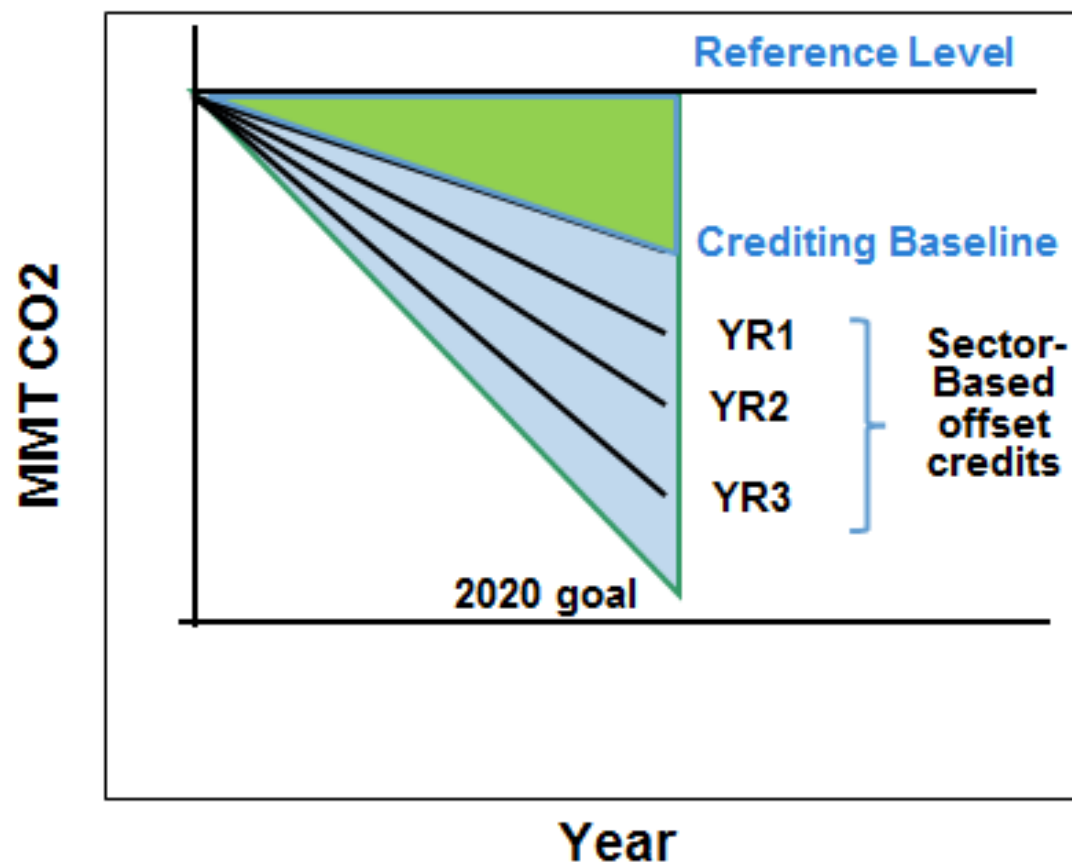
- ❑ Crediting baseline could be set at a point in a trajectory toward the goal at Yr1, Yr2, Yr3, up to 2020
- ❑ New trajectory beyond 2020 could be based upon ongoing jurisdictional goal
- ❑ Each year could represent a crediting baseline “Interim Annual Goal.” Reductions would get larger as the jurisdiction gets closer to meeting its goal

Option 1 - Setting a Jurisdictional Crediting Baseline (Cont.)

Option 1: Trajectory with annual targets and proportional emission reductions (Cont.)

- ❑ When the jurisdiction reduces deforestation at or below the crediting baseline for interim Yr1, Yr2, Yr3, an equal proportion of jurisdictional credits could be converted into ARB Sector Based Offset Credits (S-BOCs)
- ❑ When the jurisdiction reaches its goal, all jurisdiction credits could be converted to S-BOCs
- ❑ Option 1 creates an incentive to improve sector-based reductions, while allowing a proportional amount of S-BOCs to be converted immediately

Option 1 - Setting a Jurisdictional Crediting Baseline (Cont.)



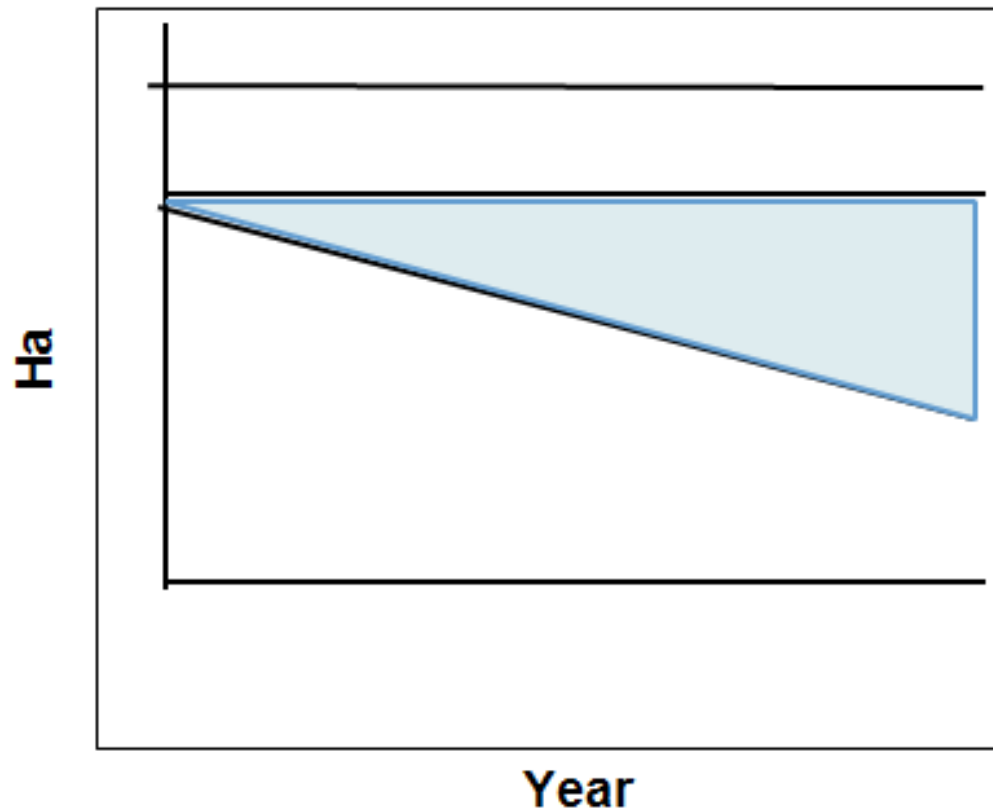
Option 2 - Setting a Jurisdictional Crediting Baseline

Option 2: Uniform percent reduction below Reference Level
e.g., 20% below Reference Level

- ❑ Crediting baseline could be based upon a percent of emission reductions achieved below the reference level:
 - ❑ The jurisdiction would meet its crediting baseline based upon jurisdictional, national or international goals
 - ❑ Once the jurisdiction meets or exceeds the crediting baseline, jurisdiction credits may be converted to S-BOCs, or
 - ❑ Once the jurisdiction meets a designated benchmark *on its way to meeting its overall goal*, a proportion of jurisdiction credits equal to the achievement may be converted to S-BOCs

Option 2 - Setting a Jurisdictional Crediting Baseline

Sector-Based
offset credits



Reference level

Crediting Baseline

Sector-Based
offset credits

10%

Questions?

Monitoring, Reporting, & Verification (MRV)

- ❑ **Monitoring:** the ongoing collection and archiving of all relevant and required data for determining an emissions baseline, actual emissions, and quantifying GHG reductions or GHG removal enhancements that are attributable to the reduction or removal enhancement activities
- ❑ **Reporting:** the process used to translate information resulting from monitoring into an agreed on format
- ❑ **Verification:** the process of independently ensuring the quality and robustness of the reported information against the methodologies which produce the information

Primary MRV Question

- ❑ Which approaches could ARB specify?
 - ❑ Define a specific, detailed set of procedures for monitoring, reporting, and verification that a jurisdiction must adhere to?
 - ❑ Develop a set of quality standards and evaluate the design of a jurisdiction's own MRV program against those standards?

ARB Staff Current Thinking

- ❑ ARB staff is interested in developing a set of quality standards to assist jurisdictions in designing an MRV program
- ❑ This allows jurisdictions to tailor their program to their own capabilities and situation
- ❑ This avoids placing undue burden on jurisdictions that are already in the process of developing robust MRV programs

Overarching Principles

- ❑ Jurisdictional sector-based crediting programs would have to be fully transparent, with sufficient information provided on methods and underlying uncertainty estimations to permit full evaluation and verification
- ❑ Methodologies could be validated at the onset of the program, and periodically thereafter or subsequent to updates to the methodologies

Monitoring

- ❑ ARB would like to solicit input regarding:
 - ❑ the frequency upon which a jurisdiction would conduct monitoring of emissions and emissions reductions
 - ❑ the duration of this monitoring (i.e., at least 100 years)
 - ❑ the level of and specificity of minimum required quality standards

Monitoring

- ❑ ARB proposes that a jurisdiction must clearly describe:
 - ❑ Where monitoring will occur
 - ❑ What will be monitored
 - ❑ How monitoring will be performed
 - ❑ Who will conduct the monitoring efforts (e.g., a government climate agency, other government agency, a third-party contractor)

Where monitoring will occur

- ❑ Jurisdictions would need to define:
 - ❑ The geographic boundary that will be monitored
 - ❑ Since a jurisdictional program would have to account for emissions reductions across the entire jurisdiction, ARB staff anticipates that monitoring would be conducted throughout the jurisdiction's territory
 - ❑ The carbon pools that will be monitored

What will be monitored

- ❑ A jurisdiction would need to define:
 - ❑ The land cover/land use classification system
 - ❑ The variables to monitor
 - ❑ The associated uncertainties
 - ❑ Social and environmental safeguards

How monitoring will be performed

- ❑ A jurisdiction would need to define the process to ensure consistency of data collection and storage over time, including:
 - ❑ Procedures for analyzing remote sensing data
 - ❑ Procedures for field-based sampling, if applicable
 - ❑ Procedures for tracking social safeguards
 - ❑ A robust internal QA/QC system

Who will monitor

- ❑ A jurisdiction would need to define:
 - ❑ The roles of involved parties
 - ❑ The use of community-based monitoring methods and procedures for incorporation, if applicable
 - ❑ How to reconcile monitoring data at different jurisdictional levels (national, provincial, county)

Reporting

- ❑ ARB staff's current thinking is that we would need to create general quality standards for reporting that a jurisdictional program would be evaluated against.
- ❑ ARB staff is soliciting input on:
 - ❑ The frequency and duration of reporting
 - ❑ How information will be reported (and how it will be publicly accessible)
 - ❑ What information will be reported

What information will be reported

- ❑ ARB staff's current thinking is that a report would need to include:
 - ❑ The reference level and crediting baseline
 - ❑ Updates to carbon pools and total reduced emissions
 - ❑ The emissions factors used to quantify reduced emissions
 - ❑ Reversals
 - ❑ A discussion of how the monitoring methodology was followed and how QA/QC was implemented as planned
 - ❑ An estimate of uncertainty

What information will be reported (Cont.)

- ❑ ARB staff's current thinking is that a report would also need to include:
 - ❑ Identification of any changes in policy that might influence the reference level
 - ❑ Updates on social and environmental safeguards
 - ❑ Track compliance with and evaluate performance of safeguards in a transparent manner
 - ❑ Report grievances received and how they have been responded to and resolved
 - ❑ Ensure information is provided to all relevant stakeholders and the public at large
 - ❑ Staff anticipates discussing safeguards in greater detail at a workshop tentatively scheduled for April 28

What information will be reported (Cont.)

- ❑ ARB staff would like to solicit input regarding how uncertainty will be addressed
- ❑ 3 options:
 - ❑ Uncertainty is ignored
 - ❑ Default static correction
 - ❑ Sliding scale discount
- ❑ ROW recommends sliding scale with more uncertainty resulting in a higher discount, up to a limit where no credits will be issued

Questions?

Possible Next Steps

- ❑ ARB staff looks forward to stakeholder feedback on these topics, and requests written comments by 5:00 PM Pacific on Friday, April 8, 2016. Comments may be submitted at <http://www.arb.ca.gov/cc/capandtrade/meetings/meetings.htm>.
- ❑ Additional technical workshops are *tentatively* scheduled for:
 - ❑ April 5, 2016 (covering reversals, offset tracking registry platforms, and verification)
 - ❑ April 28, 2016 (covering linkage process and social and environmental safeguards)
- ❑ A listserv notice would be issued to announce each of these meetings once details and topics become final