

**California Environmental Protection Agency**  
**Air Resources Board**

**Proposed Regulation to Implement  
the California Cap-and-Trade Program**

**APPENDIX E**

**DESCRIPTION OF QUANTIFICATION METHODOLOGY  
CHANGES**

**U.S. FOREST PROJECTS**

**Release Date: July 29, 2014**

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**State of California  
California Environmental Protection Agency  
AIR RESOURCES BOARD  
Stationary Sources Division**

**STAFF REPORT: INITIAL STATEMENT OF REASONS  
PROPOSED REGULATION TO IMPLEMENT  
THE CALIFORNIA CAP-AND-TRADE PROGRAM**

**APPENDIX E**

**DESCRIPTION OF QUANTIFICATION METHODOLOGY  
CHANGES AND COMPLIANCE OFFSET PROTOCOL**

**U.S. FOREST PROJECTS**

**Public Hearing to Consider the Proposed Regulation  
to Implement the California Cap-and-Trade Program**

**Date of Release: July 29, 2014**

**Scheduled for Consideration: September 18 and 19, 2014**

**Location:**

**California Air Resources Board  
Byron Sher Auditorium  
1001 I Street  
Sacramento, California 95814**

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## Quantification Methodology Updates to the U.S. Forest Project Protocol

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The process of updating the U.S. Forest Protocol involved an extensive review of relevant documents and literature as well as a stakeholder process which included soliciting input from industry experts, government agencies, project developers, academia and the public through workshops and small group discussions.

The U.S. Forest Protocol stakeholder process began on March 17, 2014, when ARB staff held a public workshop to discuss the decision to update several Compliance Offset Protocols, including the U.S. Forest Protocol. During this public stakeholder workshop, ARB invited interested members of the public to submit comments on the proposed updates and participate in the formal rulemaking process. Staff also had many individual interactions with stakeholders interested in discussing protocol related issues, and this staff proposal reflects those discussions.

As part of its update of this protocol, ARB staff reviewed its existing U.S. Forest Protocol, publicly available documents from the U.S. EPA and documents submitted by technical experts and other stakeholders. These documents are included in the reference section of this staff report, and are cited when relied upon for facts. The update to the U.S. Forest Protocol modifies the quantification methodologies update to the U.S. Forest Protocol presented to the Board for consideration at the September Board hearing as well as incorporating the best available science and information to ensure that emission reductions are real, permanent, quantifiable, additional, verifiable and enforceable.

A draft version of the U.S. Forest Protocol was made publicly available in June 2014.

ARB staff solicited and incorporated input from stakeholders into the proposed version released along with this staff report for public review on July 29, 2014. The formal 45-day public comment period begins on August 1, 2014 and the new Compliance Offset Protocol along with the proposed amendments to the Regulation will be considered at the September 18 and 19, 2014 Board hearing.

Broadly, the types of updates made to the quantification methodologies of the U.S. Forest Protocol Adopted October 20, 2011 include:

- Correcting typographical errors and mistakes that occurred when transitioning the protocol originally;
- Providing clarifications based on publicly released guidance from the first years of implementing the Compliance Offset Protocol;

- Ensuring all equations are mathematically correct and variables well defined; and
- Updating to the latest data available from the U.S. Department of Agriculture Forest Service Forest Inventory and Analysis National Program.

The following list provides specific changes made to the quantification methodologies of the U.S. Forest Protocol:

- **Quantitative Corrections and Updates**
  - Equations 6.1 and 6.11: Change “80%” to “0.8”, quantification unchanged
  - Equations 6.4 and 6.12: Modified equation format, quantification unchanged
  - Equation 6.8: Remove unnecessary terms
  - Equation 6.9: Reverse terms for accurate calculation
  - Equation 6.10: Change “>” to “≥” so that equation is inclusive
  - Equation 6.11: Change “>” to “≥” and “<” to “≤” so that equation is inclusive
  - Equation 6.11: Change “0%” to “0” and “100%” to “1” for proper application in subsequent equation
  - Equation 6.12: Replaced “-1 x CDR” term, which is a constant, with the value itself “-0.036”
  - Equations C.1 and C.2: Correct conversion factor for carbon to CO<sub>2</sub>e to 3.664
  - Equation C.5: Modify equation to represent the sum of carbon in wood products for all species
- **Administrative Clarifications**
  - Equation 6.1: Removed reference to CRT
  - Section 6.2.1: Change “economic constraints” to “financial constraints”
  - Equation 6.9: Define the stratified carbon weighting factor (SWF) term
  - Correct miscellaneous grammar and spelling mistakes
  - Added references used for the quantification methodologies update as new appendix (Appendix G)
- **Implementation Clarifications**
  - Sections 6.1.2, 6.2.3, 6.3.2: Clarify language requiring use of same models and equations used to calculate biomass in live trees and estimate baseline onsite carbon stocks
  - Section 6.1.5: Clarify quantification of secondary effects by creating ranges for level of brush cover in table 6.1
  - Section 6.2.1: Clarify 1) that the unit for initial carbon stocks and common practice are expressed in MT CO<sub>2</sub>e per acre, 2) that some baseline calculations are only applicable to projects where the initial carbon stocks are below common practice, 3) where common practice data is available from, 4) how to develop a baseline when a project’s initial carbon stocks

- are equal to common practice, and 5) the process for developing the baseline
- Section 6.2.2: Add language to clarify that the baseline should be modeled over 100 years
  - Section 6.3.1: Clarify how baseline should be modeled
  - Appendix A, Section A.2: Clarify that the inclusion of soil carbon is determined per tables 5.1-5.3
  - Appendix A, Section A.3: Clarify 1) that the use of volume models must be addressed in the inventory methodology, 2) how carbon in standing dead trees should be quantified, 3) how heights should be measured, 4) the geographical region where the Cairns equation should be applied, and 5) how below-ground carbon of standing dead trees should be calculated
  - Appendix A, Section A.3: Add requirement that known or potential disease(s) that may affect the health of the project's inventory be included in the inventory methodology
  - Appendix A, Section A.3: Add table A.3(b) to assist with carbon accounting
  - Appendix B, Section B.1: Clarify that approved growth models are those versions publicly available prior to January 1, 2015
  - Appendix B, Section B.1: Remove allowance for use of additional models (those not approved by the Board)
  - Appendix B, Section B.2: Clarify that the initial carbon stocks should be referenced in the baseline graph
  - Appendix C: Clarify the process for determining the carbon stored in wood products
  - Appendix C, Section C.1: Clarify 1) what portion of harvested trees are used in calculations, 2) which wood density factors to use and where they are available from, and 3) that the figures presented in table C.1 are examples of specific gravity and wood density values and not applicable to all projects
  - Appendix C, Section C.2: Clarify 1) that the mill efficiencies should be applied at the species level where possible, 2) where mill efficiency data is available from
  - Appendix C, Sections C.3 and C.4: Clarify 1) that the product classes should be applied at the species level where possible, 2) row numbers in tables C.2 and C.3
  - Appendix F: Clarify 1) terms used in determining common practice, 2) how site classes are developed, and 3) that Forest owner(s), Offset Project Operators, or Authorized Project Designees must determine the portion of the Project Area that is in each site class

The updated Compliance Offset Protocol U.S. Forest Projects will be incorporated by reference into proposed amendments to the Cap-and-Trade Regulation. This incorporation makes the offset protocol document an enforceable regulation. AB 32 exempts quantification methodologies from the Administrative Procedure Act (Government Code, section 11340 *et seq.*) (APA), however those elements of the Compliance Offset Protocol are still regulatory. The exemption allows future updates to the quantification methodologies to be made through a public review and Board adoption process but without the need for rulemaking documents. Each Compliance Offset Protocol identifies sections that are considered quantification methodologies and exempt from APA requirements. Any changes to the non-quantification elements of the Compliance Offset Protocols would be considered a regulatory update subject to the full regulatory development process pursuant to the APA.

## **Environmental Impacts Analysis**

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### **A. Introduction**

Staff prepared this environmental analysis (EA) for the proposed updated Compliance Offset Protocol for United States (U.S.) Forest Projects (Forest Protocol) under its regulatory program certified by the Secretary of the Natural Resources Agency (14 CCR 15251(d); 17 CCR 60000-60008). Public Resources Code section 21080.5 of the California Environmental Quality Act (CEQA) exempts public agencies with certified regulatory programs from certain CEQA requirements, including but not limited to, preparing environmental impact reports, negative declarations, and initial studies (14 CCR 15250). ARB prepares its required CEQA documentation as part of the Staff Report prepared for the proposed action (17 CCR 60005).

Staff has determined that adoption of the proposed updated Forest Protocol has no potential to cause any new significant environmental impacts or a substantial increase in the severity of impacts previously disclosed in the *Functional Equivalent Document prepared for the California Cap on GHG Emissions and Market-Based Compliance Mechanisms* (2010 FED). Further, there are no changes in circumstances or new information that would otherwise warrant any subsequent environmental review; the 2010 FED adequately addresses the potential environmental impacts of implementation the proposed updated version of the protocol.



## B. Prior Environmental Analysis

In October 2011, the Board adopted the Forest Protocol, along with the Protocols for Urban Forest Projects, Livestock Projects, and Ozone Depleting Substances Projects (ODS). In 2010, ARB prepared an environmental analysis (2010 FED) that was included as Attachment O to the Staff Report: Initial Statement of Reasons (ISOR), released for public review and comment October 2010. The 2010 FED provided a programmatic level of analysis of the potential environmental impacts of the expected compliance responses of Cap-and-Trade covered entities and the potential indirect impacts associated with development of offset projects under the four compliance offset protocols. Staff prepared written responses to comments received on the 2010 FED in a document entitled *Response to Comments on the Functional Equivalent Document Prepared for the California Cap on GHG Emissions and Market-Based Compliance Mechanisms* released on October 10, 2011. At its hearing on October 20, 2011, the Board adopted Resolution 11-32 certifying the 2010 FED, approving the written responses to comments on the 2010 FED, and adopting findings and statement of overriding considerations. The Board also adopted the *Adaptive Management Plan* (available at <http://www.arb.ca.gov/cc/capandtrade/adaptivemanagement/adaptivemanagement.htm>) to address any unanticipated biological resource impacts resulting from implementation of projects under the Forest Protocol. A Notice of Decision was filed with the Secretary of the Natural Resources Agency for public inspection and on ARB's website on October 27, 2011. These documents are available at: <http://www.arb.ca.gov/regact/2010/capandtrade10/capandtrade10.htm>

For the four protocols, the 2010 FED concluded that implementation of offset projects would result in beneficial impacts to GHG emissions and no adverse impacts or less-than-significant impacts in all resource areas, except for the following: implementation of projects under the Livestock Protocol could result in significant adverse impacts to odors, and construction impacts to cultural resources, noise, and traffic; implementation of projects under the Urban Forest Protocol could result in significant adverse impacts to cultural resources; and implementation of projects under the Forest Protocol could result in significant adverse impacts to biological resources and land use. There were no impacts identified for ODS.

The 2010 FED identified mitigation that could reduce most of the identified impacts to a less-than-significant level. The 2010 FED relied on the agencies with local permitting authority to analyze site-or project-specific impacts because the programmatic 2010 FED could not determine with any specificity the project-level impacts, and ARB does not have the authority to require project-level mitigation for specific projects carried out under the offset protocols. Because the programmatic analysis in the 2010 FED could

not determine project-specific details of impacts and mitigation, and there is an inherent uncertainty in the degree of mitigation ultimately implemented to reduce the potentially significant impacts, the 2010 FED took a conservative approach in its post-mitigation significance conclusion finding potentially significant impacts to these resource areas as significant and unavoidable.

### **C. Current Proposed Updates to the Forest Protocol**

The proposed updated Forest Protocol includes the following types of changes:

- Correcting typographical errors and mistakes that occurred when transitioning the protocol originally;
- Providing clarifications based on publicly released guidance from the first years of implementing the Forest Protocol;
- Ensuring all equations are mathematically correct and variables well defined; and
- Updating to the latest data available from the U.S. Department of Agriculture Forest Service Forest Inventory and Analysis National Program.

### **D. Legal Standards for Determining When Additional Environmental Analysis is Required**

Under its certified regulatory program, ARB prepares the required CEQA documentation as part of the Staff Report for the proposed action (17 CCR 60000-60008). When the equivalent of an EIR or negative declaration has been prepared for a rule, regulation, order, standard or plan, ARB looks to Public Resources Code section 21166 and CEQA Guidelines section 15162 for guidance on the triggers for further environmental review when considering approval of changes to that project. When an EIR for a project has been certified, that EIR is conclusively presumed valid unless a lawsuit challenging the EIR is timely filed (PRC 21167.2). This presumption precludes reopening the prior CEQA process unless one of the events triggering additional review as specified in Public Resources Code section 21166 and CEQA Guidelines section 15162 has occurred.

CEQA Guidelines section 15162 states:

- (a) When an EIR has been certified or negative declaration adopted for a project, no subsequent EIR shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence in the light of the whole record, one or more of the following:
  - (1) Substantial changes are proposed in the project which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;

- (2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
- (3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the negative declaration was adopted, shows any of the following:
  - (A) The project will have one or more significant effects not discussed in the previous EIR or negative declaration;
  - (B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;
  - (C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or
  - (D) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

If a subsequent or supplemental EIR or negative declaration is not required, the lead agency may document its decision and supporting evidence in an addendum (14 CCR 15164(a), (e)). The addendum and lead agency's findings should include a brief explanation of the decision not to prepare a subsequent or supplemental EIR or negative declaration (14 CCR 15164(e)). An addendum does not need to be circulated for public review, but it must be considered by the lead agency prior to making a decision on the project (14 CCR 15164(c)-(d)).

This chapter serves as a substitute document equivalent to an addendum to the 2010 FED prepared under ARB's certified regulatory program to document ARB's determination that no subsequent or supplemental environmental analysis is required for the proposed updated Forest Protocol.

## E. Determination that No Additional Environmental Analysis is Required

Using CEQA Guidelines section 15162 as guidance, a brief explanation is provided below to document ARB's determination that none of the conditions requiring further environmental review are triggered by the proposed updates.

- a) *There are no substantial changes to the Forest Protocol that require major revisions to the 2010 FED due to the involvement of new significant environmental impacts or a substantial increase in the severity of previously identified impacts.*

The updates to the protocol that correct typographical errors and mistakes, provide clarifications, and ensure equations are mathematically correct do not alter how projects are implemented under the protocol in any way that could result in new significant impacts or a substantial increase in the severity of previously identified impacts. These changes do not alter the way projects are implemented or result in any changes that affect the physical environment. Therefore, the updates do not alter the conclusions of the impacts analysis prepared for the Forest Protocol in the 2010 FED.

- b) *There are no substantial changes with respect to the circumstances under which the proposed updated Forest Protocol is being undertaken that require major revisions to the 2010 FED related to the proposed changes due to the involvement of new significant environmental impacts or a substantial increase in the severity of previously identified impacts.*

There are no substantial changes in the environmental circumstances under which the updated Forest Protocol will be implemented which would require major revisions to the 2010 FED. As explained above, the updates involve correcting typographical errors and mistakes, providing clarifications, and ensuring equations are mathematically correct. These changes are administrative in nature and would not alter the way projects are implemented or result in any changes with respect to the circumstances that projects under the Forest Protocol are undertaken.

- c) *There is no new information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the 2010 FED was certified as complete, that changes the conclusions of the 2010 FED with regard to impacts, mitigation measures, or alternatives;*

During the first years of implementing the Forest Protocol, no new information of substantial importance has come to staff's attention through due diligence of all project reviews that led to the identification of additional or more severe environmental impacts, or feasible mitigation measures or alternatives that would reduce potentially significant impacts.

## **F. Conclusion**

The 2010 FED addressed the Forest Protocol and concluded there would be significant and unavoidable impacts to biological resources and land use planning. For the reasons described above, the proposed updates do not trigger any additional environmental analysis because the changes in the update would not change how projects are implemented under the Protocol in a way that could affect the physical environment or alter the conclusions of the environmental analysis included in the 2010 FED.

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