

Workshop on Proposed Compliance Offset Protocol for Rice Cultivation Projects and Updates to Existing Protocols

California Air Resources Board

March 17, 2014

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Staff Proposal for Discussion

Workshop Materials and Comments Submittal

- Slides and rice protocol discussion draft are posted at:
<http://www.arb.ca.gov/cc/capandtrade/meetings/meetings.htm>
- Written comments may be submitted at:
<http://www.arb.ca.gov/cc/capandtrade/meetings/meetings.htm>
by Noon, April 1, 2014 (PDT)
- During the workshop, E-mail questions to:
auditorium@calepa.ca.gov

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Agenda

- Offset Program Status Update
- Verification Training/Accreditation Update
- Proposed Updates to The Existing Protocols—US Forest Projects, Livestock Projects, and Ozone Depleting Substances (ODS) Destruction Projects
- New Proposed Protocol Development—Rice Cultivation Protocol
- Timeline

Note:

This workshop is to discuss the proposed updates to the existing U.S. Forest Projects, Livestock Projects, and ODS Destruction Projects Protocols and the newly proposed Rice Cultivation Projects Protocol only. There is a separate Cap-and-Trade rulemaking currently underway that was first considered by the Board in October 2013 and will be heard again in April 2014.

The proposed updates and new rice protocol are not included in the current rulemaking, and any comments submitted during this workshop will not be included in the rulemaking file for the pending rulemaking.

ARB will bring the protocol updates and the new rice protocol to the Board in September 2014 for consideration of inclusion in the Cap-and-Trade Program and will open a formal 45-day comment period August 1, 2014.

Offset Program Status Update

- Compliance Offset Projects
 - 827,746 ARB offset credits issued to 6 ODS projects
- Early Action Offset Projects
 - 81 projects listed
 - 4,707,918 ARB offset credits issued
 - 2,952,097 credits to 16 ODS projects
 - 1,649,864 credits to 3 US Forest projects
 - 105,957 credits to 6 Livestock projects

Verifier Training Update

- Seven training sessions held since June 2012 with attendance of:
 - 103 verifiers seeking accreditation
 - 26 Offset Project Registry (OPR) staff
 - 8 offset project operators/consultants
- Future trainings:
 - Possible – June 2-6, 2014 in Sacramento
 - For more information, see:
<http://www.arb.ca.gov/cc/capandtrade/offsets/verification/verification.htm>

Verifier Accreditation Update

- 17 Verification Bodies accredited
- 88 Offset Verifiers accredited
 - 74 Lead verifiers
 - 43 Livestock project specialists
 - 29 US Forest project specialists
 - 34 ODS Destruction project specialists
 - 26 Urban Forest project specialists
- For more information, see:

<http://www.arb.ca.gov/cc/capandtrade/offsets/verification/verification.htm>

Questions?

Proposed Updates to the Existing Protocols

- The Livestock, ODS Destruction, and U.S. Forest protocols are being updated to:
 - Correct errors and typos
 - Reflect the latest emission factors and other values used for quantification
 - Provide clarifications
- The proposed updates are consistent with current program implementation
- Upon the adoption of the proposed updates:
 - Future projects must use the updated protocols.
 - Existing project may use the updated protocols continuing the existing crediting period.

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Proposed Updates to the ODS Destruction Protocol Quantitative Corrections and Updates

- Clarify where high boiling residue (HBR), moisture, and ineligible ODS are included and excluded in calculations
- Correct carbon ratios and percent/fraction discrepancy
- Specify the pound/metric ton conversion factor
- Allow for ASTM method (instead of only "Scheutz" method) for analysis of ODS foam blowing agent

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Proposed Updates to the ODS Destruction Protocol Administrative and Regulatory Clarifications

- Convert text to regulatory language
 - Explanatory text removed
 - Some text shifted between chapters and appendices
- Add/remove some definitions and acronyms
- Clarify eligibility and regulatory compliance requirements
- Clarify descriptions of offset project commencement, reporting period, and crediting period

Questions?

Proposed Updates to the Livestock Digester Protocol Quantitative Corrections and Updates

- Update equations to ensure consistent formatting and fix typos
- Update emission factors and other values
- Update volatile solids (VS) and typical animal mass (TAM) values
- Set maximum value for Van't Hoff-Arrhenius factor to 0.95
- Clarify baseline data substitution methodology for missing data durations greater than one week

Proposed Updates to the Livestock Digester Protocol Administrative and Regulatory Clarifications

- Converted text to regulatory language
 - Explanatory text removed
 - Some text shifted between chapters and appendices
- Clarify project listing date
- Clarification of digester type and cover type categories
- Update protocol definitions and abbreviations

Proposed Updates to the Livestock Digester Protocol Implementation Clarifications and Updates

- Modify monitoring requirement for destruction devices
- Update equations to prorate emission reductions for incomplete calendar months

Questions?

Proposed Updates to the U.S. Forest Protocol

Quantitative Corrections and Updates

- Update conversion factors, and clarify formulas and references for greater accuracy and consistency
- Add standing dead tree carbon pool adjustment (Domke et al 2011)
- Update Common Practice (CP) values (includes data through 2012)

Proposed Updates to the U.S. Forest Protocol

Administrative and Regulatory Clarifications

- Section 3.8.1 Sustainable Harvesting:
 - Options 1 & 2 only: Offset Project Operator (OPO)/Authorized Project Designee (APD) must meet the sustainable harvesting requirements for all landholdings throughout the US
 - All options: Long-term management plan necessary for all options
- Clarify steps for improved forest management (IFM) project baseline and harvested wood product (HWP) sections
- Sequential sampling process clarified

Questions?

New Protocol Development Rice Cultivation Projects

- Rice cultivation protocol is intended to reduce methane emissions from traditional rice cultivation practices
- Methane (CH₄) facts:
 - Principle component of natural gas
 - Produced biologically under anaerobic conditions
 - Relatively large radiative efficiency
 - Second most important anthropogenic greenhouse gas (GHG) in atmosphere
 - Short-lived climate pollutant

Offset Criteria

- Real, additional, quantifiable, permanent, verifiable, and enforceable
- Board-adopted Compliance Offset Protocols (COP)
- Cannot credit emission reductions that occur in capped sectors
 - No offset credits for fossil fuel or electricity displacement
- Must meet the same accuracy requirements as all other reported GHG emissions under the cap
- Participation in the offset program is voluntary
 - Once in the program, all participants are subject to regulatory requirements, including oversight and enforcement.

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Timeline for New Protocol Development

- Conducted 4 technical working group meetings: 2013
- Discussion draft protocol for public comment: March 2014
- More public workshops: Spring/Summer 2014
- Propose for Board Consideration: September 2014
- If approved by the Board, protocol effective date: Jan 1, 2015

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Rice Cultivation Projects Protocol

- First crop-based compliance offset protocol considered by ARB
- Flooded rice paddies serve ecological functions as man-made wetlands; but also a source of GHG emissions
- Protocol quantifies methane emission reductions from changes in rice cultivation practices
- Draft protocol maintains yield and preserves current associated ecological benefits

Project Definition

- The implementation of approved practices that reduce methane emissions from rice cultivation practices
 - California
 - Switch from wet seeding to dry seeding
 - Early drainage in preparation for harvest
 - Mid-South States
 - Alternate wet and dry (AWD) during the growing season
 - Early drainage in preparation for harvest

Eligibility Criteria

- Project geographic location
 - California: Sacramento Valley
 - Mid-South: Mississippi River Delta and Gulf Coast of Louisiana
- Project commencement
 - First day of cultivation cycle during which a project activity is implemented
- Project reporting period
 - Rice cultivation cycle – approximately one year
- Crediting period
 - 10 reporting periods

Offset Project Boundary

- Soil systems – biochemical reactions affecting GHG emissions
- Increased fossil fuel emissions
 - Field preparation
 - Fertilizer/pesticide/herbicide application
- Rice straw residue management

Emissions Quantification Methodology (1)

- Soil systems emissions quantified using DeNitrification DeComposition (DNDC) model
 - <http://www.dndc.sr.unh.edu/>
- A computer model that can be used for predicting emissions of GHGs based on field-specific parameters
Calibrated with:
 - Crop-type specific data
 - Region specific data
 - Activity specific data
- Quantify both baseline and project emissions

Emissions Quantification Methodology (2)

- Fuel usage emissions quantified using default fuel specific emissions factors and fuel volumes
- Straw residue usage emissions quantified using emission factors specific to end-use

Early Action for New Protocol

- Reductions occurred between January 1, 2005 and December 31, 2014
- Registered with ARB or approved Offset Project Registry prior to June 30, 2015
- Results from the use of an approved early action quantification methodology
 - Voluntary protocols that are substantially similar to the adopted COP will be considered for early action quantification methodologies
- Verified pursuant to section 95990(f)

New Compliance Offset Protocol Crediting

- Project commencement date must be after December 31, 2006
- First reporting period may be 6 to 24 months
- Report must be completed and submitted within 4 months of ARB posting the structural uncertainty value
- Report must be verified and the offset verification statement submitted within 11 months of ARB posting the structural uncertainty value

Managing Project Costs

- Small projects (<25,000 MTCO₂e) may verify biennially
- Authorized Project Designee (APD) may group together multiple projects for economy of scale
- ARB contract for developing tool to simplify reporting and use of DNDC model
- Alternative methods to simplify quantification of primary emission reductions

ARB Contract Quantification Tool

- Finalizing contract to streamline quantification
- Easy compliance with record keeping and quantification requirements
- Simplify data input
- Internally linked weather and soil data
- Project quantification calculator
- Project record keeping file

Verification

- First proposed compliance offset protocol to rely entirely on modeled calculations not tied to direct measurement
- Verification focus on confirmation of mitigation activity
 - Staff seeking input from verifiers on process
- Stakeholder proposal: Project Aggregation
 - Not allowed under current regulatory verification requirements
 - No project data to allow for staff evaluation of aggregation proposal
 - Staff will continue to evaluate for potential future inclusion as project data becomes available

Stakeholder Input (1)

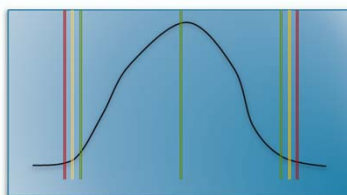
- Is the 75% heading criterion feasible in determining the earliest drain day?
- How to monitor soil drying for alternate wet and dry activity?
- How to quantify emissions from end-use of rice straw?
- Is it likely that fertilizer and herbicide usage will not change as a result of project activities?

Stakeholder Input (2)

- Methods for quantifying secondary emission increases that do not rely on field specific data should be conservative.
- Suggestions for better ways to document project activities and support regulatory verification?

Stakeholder Input (3)

- DNDC modeling
 - 2000 runs Monte Carlo simulation
 - Average value
 - Calculate soil uncertainty
 - 2000 runs of Monte Carlo simulation
 - Use 90% values for calculating primary emission reductions
 - 16 runs of Monte Carlo simulation
 - High and low uncertainty of each soil parameter (4)
 - Take the most conservative values



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