



Carbon Venture Partners

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TO: Mr. Greg Mayeur, Ms. Yachun Chow
California Air Resources Board, 1001 I Street, Sacramento, CA 95812-2815

FROM: Victoria Evans, Chief Scientist; Andrew Farrell, Regulatory Analyst
Carbon Venture Partners, LLC

DATE: April 1, 2014

RE: Comments to the California Air Resources Board: Informal Discussion Draft, Rice Cultivation Carbon Offset Protocol

SUBMITTED: VIA ELECTRONIC FILING

COMMENTS FROM CARBON VENTURE PARTNERS LLC
ON INFORMAL DISCUSSION DRAFT –
ARB COMPLIANCE OFFSET PROTOCOL FOR RICE CULTIVATION

INTRODUCTION

Carbon Venture Partners (“CVP”) appreciates the opportunity to provide comments to the California Air Resources Board (“ARB”) regarding its Informal Draft of the Compliance Offset Protocol for Rice Cultivation (the “Rice Protocol”). These comments were prepared on behalf of CalAg, LLC, (“CalAg”) a manufacturer intending to utilize its patented process to produce medium density fiberboard (“MDF”) while using rice straw, replacing wood fiber, as a feedstock. Rice straw is a waste product from the farming and harvesting of California grown rice as well as rice grown elsewhere in the U.S.

CalAg’s rice straw-based MDF is an engineered composite panel which meets or exceeds all American National Standards Institute (ANSI) standards for wood-based MDF. CalAg intends to build their MDF manufacturing facility near Willows, California, in Glenn County within the California rice growing region. The plant would employ an estimated 250 to 300 full-time construction workers, 85 full-time employees at the plant, with an annual payroll of approximately \$10 million. An estimated 400 to 450 workers will be employed by the baling and transportation companies during the 5-month straw collection season.

CalAg, as the manufacturing and operating entity will sell the manufactured fiberboard product for use in various applications, including green building materials (since rice straw replaces the need for feedstocks of virgin wood fiber). CalAg believes if the final version of the ARB Rice Protocol includes credit for rice straw removal and is commercially viable, CalAg’s process could

represent the largest commercial offset project under the Rice Protocol and a substantial source of compliance offsets under California's Cap and Trade Program.

Representatives of CVP have participated in and filed comments in response to every Technical Working Group Meeting ("TWG Meeting") and Public Workshop addressing the Rice Protocol that has been hosted by ARB to date. CVP would like to recognize ARB's diligence and cooperation in responding to its previously filed comments and with taking the time to meet with CVP to discuss issues relevant to developing a scientifically sound and commercially viable Rice Protocol.

1. OFFSET CREDIT QUANTIFICATION WITH THE DENITRIFICATION-DECOMPOSITION MODEL ("DNDC MODEL")

a. Measures to Streamline Application of the Quantification Method: DNDC Model

During the March 17, 2014, Public Workshop, and at two prior TWG Meetings, ARB noted plans to streamline the Rice Protocol's emissions quantification methodology. CVP previously expressed substantial concerns about the lack of documentation, high level of complexity, prohibitive cost of implementation and quantification methods contained in the DNDC Model. While CVP lauds ARB for moving to implement tools designed to streamline application of the DNDC Model, CVP is nonetheless concerned by the lack of clarity as to what streamlining measures are to actually be implemented and by when. To date, ARB has not publicly released the details concerning the planned streamlining measures, nor has ARB provided stakeholders a chance to discuss and comment on them. Stakeholders do not have enough information to fully understand the streamlining that will occur to the DNDC Model and quantification calculations. Thus, CVP is unable to determine whether ARB has adequately responded to our earlier comments regarding the need for an emissions reduction quantification methodology that is scientifically credible, transparent and affordable to render the Rice Protocol commercially viable.

Questions

- 1) What are the tools or additions/modifications that are being developed to streamline the DNDC Model and how will they streamline the Model's operation and its application for rice offset quantification? When will these tools and deliverables be available? When will the stakeholders be able to discuss these items?
- 2) When is Beta Test of these streamlining tools going to occur? What is the timeline for the Beta Test version of the model and other deliverables versus the overall schedule for development and adoption of the Rice Protocol?

b. Alleviating the Burden of Multiple Runs of the DNDC Model

CVP appreciates that ARB is seeking comments on how to best address and reduce the voluminous number of required DNDC runs for quantification. CVP supports reduction of the Monte Carlo runs required and would like to reiterate our concerns about the costs represented by the number of DNDC runs that are required under current voluntary rice cultivation protocols and ARB's Informal Discussion Draft Protocol.

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CVP supports a methodology that can be applied at reasonable costs that are low enough to allow for the development of commercially viable offset projects for agricultural projects like rice cultivation. This issue is of prime importance for CalAg. One of the primary proponents of the ARB Rice Protocol is also the developer of a recent voluntary rice offset project (currently listed with the American Carbon Registry) and is supported by not-for-profit funds (i.e., government research funds, foundation grants and other public monies). In contrast, CalAg is privately funded.

2. RICE STRAW REMOVAL AND BALING

ARB has not included rice straw removal and baling as a practice eligible for generating offsets in the Informal Discussion Draft Rice Compliance Offset Protocol. CVP does not agree with this exclusion and requests that ARB staff reconsider their decision.

Question

CVP previously requested information regarding the methane reduction achieved by each alternative cultivation practice for generating carbon offsets that ARB considered (rice straw baling, dry seeding, early drainage, alternate wet and dry activities, etc.), yet no discussion or disclosure of these relative benefits occurred to date. CVP requests any studies or findings that describe or quantify the methane reduction potential of each rice management practice considered by ARB.

- What is the quantity of methane reduction potential of each rice management practice considered by ARB?

a. Allowing Rice Straw to Decompose in Flooded Fields Results in Business As Usual Practices, Continuing Emissions of Greenhouse Gases

In response to the California legislative mandate to eliminate postharvest straw burning and environmental concerns to restore wetland habitat for Pacific flyway waterfowl, many California rice growers now incorporate straw into soil and flood rice fields in winter. The current practice of flooding rice fields after harvest so that remaining rice straw may decompose in anaerobic conditions produces methane, a greenhouse gas (“GHG”) with a global warming potential over 20 times that of carbon dioxide. Regional emission estimates by researchers have shown that since rice field flooding and rice straw incorporation have become widely implemented, generally 2.6 to 4 times more methane has been emitted from rice fields, when compared to periods before the legislative mandate against rice straw burning was enacted.^{1 2 3} This practice significantly contributes to the GHG emissions inventory of the state of California and Mid-South (rice growing regions).

For this reason, both of the American Carbon Registry’s and Climate Action Reserve’s offset methodologies for measuring voluntary emission reductions via changes in rice cultivation practices

¹Bird, Jeffrey A., Alison J. Eagle, William R. Horwath, Mike W. Hair, Eric E. Zilbert, Chris van Kessel. 2002. Long-term studies find benefits, challenges in alternative rice straw management. *California Agriculture*, March-April, pp. 69-75.

²Wong, A. 2003. Comparative Emission of Methane from Different Rice Straw Management Practices in California-A Statewide Perspective, *Journal of Sustainable Agriculture*, Volume 22, Issue 1, 2003.

³California Air Resources Board. 2010. —California Greenhouse Gas Inventory for 2000-2008 — by Sector and Activity. http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_sector_00-08_all_2010-05-12.pdf

recognize emission reductions from the removal and baling of rice straw, as eligible for carbon offsets.

Rice straw can be used as a biomass feedstock for various processes and end uses; specifically, it can be used in producing building materials (via CalAg's patented medium density fiberboard production process), livestock bedding, erosion control and as a biomass fuel. In failing to incentivize rice straw removal from postharvest rice fields, ARB is missing an important opportunity to encourage end uses of rice straw, which would avoid significant methane emissions, a significant greenhouse gas, the reduction of which is the primary goal of California's Cap and Trade Program. Thus, incentivizing rice straw removal and its use in building materials and biomass feedstocks will displace the pressure on the current use of forest residues for those purposes.

b. ARB's Decision to Exclude Rice Straw Removal as an Avenue for Generating Offset Credits is Based on Insufficient Scientific Evidence

In deciding to omit rice straw removal as an avenue for generation of offsets, ARB has stated that it relied upon one study to provide evidence of an adverse impact on migratory waterfowl that results from baling rice straw after harvest. This Interim study, conducted by Point Blue Conservation Science and published on November 23, 2013 (the "PBCS Study")⁴ performed on behalf of the Environmental Defense Fund, has not been finalized, peer-reviewed, nor published in a scientific journal. These are typically requirements for scientific documentation used in regulatory rulemaking and the data that are used to substantiate voluntary offset protocols. Thus, this study does **not** adequately meet these requirements and should not be used to suggest the existence of a potential future environmental impact.

The PBCS Study purports to indicate that migratory waterfowl use unbaled rice fields in greater numbers, on the whole. Notably, there are not data in the PBCS Interim Study to prove that baled rice fields cannot adequately support migratory waterfowl or that migratory waterfowl will not use baled rice fields during their annual migrations. Rather the PBCS Study, which states that waterfowl appeared in greater number on certain fields because such fields were not baled, indicates only a potential preference on behalf of migratory waterfowl for unbaled flooded fields, compared to baled fields. Rice fields contain adequate sources of nutrition, especially when field straw is baled, because rice grains remain easy to reach on top of or embedded in the top layer of soil after fields are baled; thus, waterfowl do not have to move or trample the remaining rice straw to find the rice grains.

CVP has already provided verbal comments during the TWG meeting in December 2013, regarding variables that are unaccounted for in the PBCS Study. Here we restate those, along with additional information, since these comments have not been completely responded to. CVP believes that ARB must account for the following issues in order to justify its decision to omit rice straw removal/baling from the Informal Draft Protocol based upon the PBCS Interim Study results.

⁴ Sesser, Kristin A., Khara M. Strum, Catherine M. Hickey, Matthew E. Reiter 2013. PBCS Interim Report, *Assessing the environmental trade-offs of greenhouse gas emission reduction in California's rice fields: The effect of baling on waterbird use of winter flooded rice fields*. <http://www.arb.ca.gov/cc/capandtrade/protocols/rice/pbcs-12-20-13.pdf>

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The following CVP comments address these variables:

- **Waterfowl Counts By Species Per Year Were Not Reported.** Typically a bird field study would include a table of bird counts by species for each study year. The PBCS study does not provide this information. Based upon verbal responses by PBCS to this question during the December 2013 TWG meeting, it is not clear that these records were kept. If these data were compiled, they should be provided in an addendum to the report. These data are important to note variability from year to year.
- **Water Depth Variability Was Not Reported.** With respect to the fields observed by PBCS, other prior scientific studies have indicated that the depth of floodwaters in the rice field substantially impact the presence of migratory waterfowl. The PBCS Study did not report on the flood water depth per field, as observed during the study. The rice field flood water level is expected to be different for each rice field observed. The depth of flood water treatment has been shown in previous studies to have differential effects on waterfowl usage of rice fields (Elphick 2010).⁵ Without information as to the flood water depth in each field, it is impossible to determine whether increased bird presence on each field was due to baling practices, hunting season, flood water depth or another variable. This information should be provided if it was collected and further analyzed; if these data were not collected, then we submit that the conclusions of the PBCS study are based upon inadequate data collection.

Other researchers have stated that in California fields, the average winter flood water depths exceed those at which waterfowl presence is highest (Eadie et al. 2008).⁶ This suggests that equivalent (or greater) waterfowl conservation gains could be achieved with the use of less water to flood rice fields in California, as opposed to the current relatively variable set of water levels used by farmers for unbaled/baled rice fields. In addition, less water and lower water levels are able to be used for baled fields.

- **Coincidence of Hunting Season During the PBCS Field Study.** An additional variable that has been noted in other field studies is whether the rice fields were open for hunting during the study of waterfowl use. It is notable that PBCS confirmed during the December 2013 TWG meeting that they conducted their study during the hunting season for the subspecies of migratory waterfowl that are considered game birds and thus, eligible for hunting. This hunting would be expected to decrease the accuracy and increase the variability of the game bird and waterfowl count. In North America, researchers have found that hunting generally deters waterfowl from using flooded rice fields until nighttime, when hunting ceases (Eadie et al. 2008).⁷ Researchers report that waterfowl use managed wetlands or rice fields that are not subjected to hunting as refuges for resting and feeding by day, traveling to feed in hunted fields after dark (Miller

⁵ Elphick, 2010. Management of Rice Fields for Birds during the Non-Growing Season. *Waterbirds*, 33(sp1):181-192.

⁶ Eadie JM, Elphick CS, Reinecke KJ, Miller MR. 2008. Wildlife values of North American Ricelands. pp 7–89 in Manley SW, editor. Conservation in ricelands of North America. Stuttgart, Arkansas: The Rice Foundation.

⁷ Ibid.

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1985 for California;⁸ Rave and Cordes 1993 for Louisiana⁹). Thus, reduced waterfowl presence in some fields may be attributable to the fact that those fields were actively hunted, not because the straw had been baled.

- **Variability of Food Availability.** Among other variables that were not completely analyzed by the PBCS Study include a comparison of food availability in baled and unbaled fields, i.e., the ease with which birds can access food on a baled field. PBCS was to conduct additional analyses on this topic, as mentioned in the Interim Report. However, no additional results have been provided to date.

Regarding food availability, baling has a positive effect in that it provides favorable conditions for waterfowl to gain access to the remaining rice grains as a food resource. Incorporating straw and the left over rice grains into the soil makes it more difficult for the waterfowl to find the food resource, than if the straw were baled and thus, removed, leaving the grains left undisturbed and easy to find. The latter practice was implemented for over 75 years prior to the phase out of rice straw burning, which began in the early 1990's. Thus, baling provides a higher percentage of undisturbed food resource than straw incorporation.

Finally, it should be noted that other prominent experts have been unable to reach the same conclusion as the PBCS Study. Namely, Elphick and Oring, who were cited in the PBCS Study, were unable to conclude that rice straw manipulations (i.e., baling vs. refraining from baling) fully explained variations in waterfowl use of flooded California rice fields (Elphick and Oring 2003).¹⁰

c. Protecting Migratory Waterfowl Habitat Relies on Major Assumptions Regarding Future Water Supplies and Climate Changes.

ARB's action could be interpreted to support waterfowl habitat conservation by encouraging winter flooding of rice fields and discouraging rice straw baling in a voluntary opt-in program; this is only advisable so long as ARB is confident that other extrinsic factors do not significantly damage such habitats. ARB's policy assumes adequate future water supply to allow for winter flooding (thus creating migratory waterfowl areas), as well as favorable climatic conditions under which migratory bird areas (rice fields) will persist.

According to the California Department of Fish and Game's (renamed Fish and Wildlife) Draft Environmental Document, Migratory Game Bird Hunting (May 2013), water supply for rice production (as well as for fish) is projected to compete with flooding for waterfowl enhancement in the future. Also, current conditions strongly suggest that scarce water supplies may negate current efforts to bolster waterfowl habitats. EDF and others have projected that only 10% of the rice farm acreage in California will be planted this year due to water shortages.

⁸ Miller, M. R. 1985. Time budgets of Northern Pintails wintering in the Sacramento Valley, California. *Wildfowl* 36: 53-64.

⁹ Rave, D. P. and C. L. Cordes. 1993. Time-activity budget of Northern Pintails using nonhunted rice fields in southwest Louisiana. *Journal of Field Ornithology* 64: 211-218.

¹⁰ Elphick, C.S. and L.W. Oring. 2003. *Agriculture, Ecosystems and Environment* 94, 17-29, p 26.

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ARB's assumptions regarding water supplies and climate for waterfowl are contrary to positions of the California Department of Fish and Game and California Department of Water Resources (regarding future water availability and management), which consist of the following:

*"Changes in water availability and timing (Miller et al 2003) would likely have the greatest impact on rice agriculture, an important component of wintering waterfowl habitat in California."*¹¹

*"There is substantial evidence that climate change will cause changes in habitats and other factors that affect waterfowl populations over the long term."*¹²

*Competitive urban needs for water, especially as it relates to rice production, may affect waterfowl food supplies in the future. This will be especially prevalent when drought conditions return."*¹³

CVP submits that reliance by ARB upon an assumed future water supply for flooding California rice fields and favorable climatic conditions for migratory waterfowl and game birds may be contrary to published statements made by and current science relied upon by sister agencies of the state of California. CVP recommends that ARB consult with these sister agencies to consider and incorporate their viewpoints into this protocol policy.

d. Excluding Rice Straw Baling Suggests Commercial Waterfowl Hunting Interests are Prioritized

Migratory waterfowl is in general protected under an International Treaty. A number of migratory waterfowl species included in the PBCS Study are classified as California migratory game birds, including ducks, geese, brant, swans, cranes and snipe. Thus, these migratory are allowed to be hunted and thus, to be the subject of consumptive uses of wildlife. We are aware that leasing duck hunting rights on rice fields is a lucrative business in both California and the Mid-South. During multiple ARB TWG meetings, Ducks Unlimited, a major proponent of commercial hunting for waterfowl, has been present and provided comments in favor of excluding rice straw baling and continuation of rice field flooding. This implies that Ducks Unlimited has as its main intent is to protect its commercial interests by preserving the status quo of duck hunting and duck hunting installations (blinds and other facilities utilized for duck hunting and related activities) in Northern California.

e. Unbaled Rice Fields Require More Water to Successfully Decompose Rice Straw

California is facing its worst drought in recorded history. Residential and commercial interests are vying for increasingly scarce water allocations. Unbaled rice fields require significantly more water to dispose of leftover rice straw via anaerobic decomposition than baled fields require. By neglecting to incentivize rice straw baling, ARB has missed an opportunity to mitigate drought-related problems arising in Northern California, particularly problems that affect the agriculture

¹¹ CDFG's Draft Environmental Document, Migratory Game Bird Hunting, p 74 (May 2013)
<http://www.dfg.ca.gov/wildlife/waterfowl/docs/2013DEDWaterfowl.pdf>

¹² Ibid. pp 75.

¹³ Ibid, pp 34-35.

sector. As climate change continues to threaten rainfall levels and snowpack reserves across the State, water scarcity and droughts will only continue to grow in severity in the years ahead. The facts that we recommend be considered are that less water is needed for flooding baled rice fields; more water is needed for flooding unbaled rice fields, in order to decompose the standing rice straw. With the concern for water use in rice cultivation, CVP reiterates that baled rice fields require less water for flooding than unbaled fields and this could allow for the preservation of greater acreages of waterfowl areas with less water usage overall. We submit that this is a very important consideration especially during drought conditions.

f. By Excluding Rice Straw Baling, ARB Has Essentially Substituted One Major Air Pollution Problem With Another

In the 1990's the state of California regulated the burning of rice straw after harvest to limit harmful air pollutants that were released by the process. Now, rice farmers, more frequently, decompose rice straw in anaerobic conditions by flooding fields in the winter. This practice still emits significant amounts of methane. This methane produces an adverse environmental impact upon climate change and thus, upon the health and welfare of California residents.

There are numerous end uses for rice straw that would justify inclusion of credit for straw removal and result in avoided methane emissions, including composting and CalAg's patented utilization of rice straw within medium density fiberboard. Composting leftover rice straw, for instance, would produce 20 times less the amount of carbon dioxide equivalent that is generated by flooding winter fields because it involves aerobic, as opposed to anaerobic decomposition. Notably, CalAg's utilization of rice straw would avoid an even greater percentage of the emissions that are produced during winter flooding.

In light of the methane emissions produced by decomposing rice straw in flooded fields, ARB should find a way to retain rice straw removal in the Rice Offset Protocol. The additional methane produced by rice decomposition is a meaningful contributor to the state's GHG inventory. By excluding rice straw removal from the offset protocol, ARB has signaled that it is not concerned with avoiding harmful emissions that are generated when disposing of rice straw under the current Business As Usual practices.

CalAg proposes to remove about 200,000 tons of waste rice straw per year from approximately 90,000 acres of rice fields. Further, through its proposed use of the formaldehyde-free binder instead of the more traditional formaldehyde-based resins, CalAg will produce a rice straw based panel board which has 'zero formaldehyde' emissions and thereby provides a cleaner and healthier indoor air environment where this product is used. CalAg's rice straw-based MDF displaces need for wood-based MDF. The rice straw MDF product is expected to qualify under several categories of the Leadership in Energy and Environmental Design (LEED) Green Building Rating System administered by the U.S. Green Building Council.

g. Northern California Waterfowl Populations Were Robust When Winter Flooding Was Not a Primary Rice Farming Practice

Prior to 2001, before post-harvest straw burning was phased out by regulations, rice straw on many acres in Northern California was burned and fewer rice farm acres were winter-flooded.

Nonetheless, waterfowl populations were robust during this time. In fact, estimates made by the California Department of Fish and Game indicate that waterfowl populations in several years prior to 2001 were larger than recent populations that have been recorded while winter flooding has been a prevalent farming practice.¹⁴ These data suggest that waterfowl populations will not be negatively affected if rice straw baling becomes a primary farming practice, as baling and burning reach the same end result, less rice straw remaining in fields during the post-harvest period.

h. Commercial Viability of Offset Protocol is Unclear Due to Low Volume of Rice Offset Credits

The exclusion of rice straw baling decreases the volume of carbon offset credits for rice projects. This renders the already low volume of credits for rice cultivation measures to a level that may discourage offset projects and is not likely to be commercial for rice growers and project developers.

i. Recommendations

CVP recommends that rice straw baling be included for credit in the Rice Protocol, until such time as there is definitive scientific data to demonstrate an adverse impact on migratory waterfowl. Excluding the measure at this point, without robust data to support such a decision is improper. Further, even if there were robust data indicating an adverse environmental impact, CVP does not believe that ARB has adequately weighed all of the interests that are favored by farmers baling rice straw. The practice not only reduces GHG emissions, but also reduces water consumption. It is consistent with the purpose of the California Cap and Trade Program and the ARB's goals in developing a robust Carbon Offset Program.

3. ALTERNATE WET AND DRY ACTIVITIES

Alternate Wet and Dry Activities to reduce flooding during the growing season is listed as a measure eligible for generating offset credits on rice farms in the Mid-South. CVP requests that this be included as an avenue for generating credits in California as well.

CVP's primary concern is that the Rice Protocol, as written, will not provide for commercially viable GHG reduction projects on rice farms and that the Rice Protocol will not produce a meaningful volume of methane reductions and offset credits. The management practices that are eligible to receive credit on California rice fields have been severely limited, which will likely result in many California rice farmers opting not to participate. Allowing this practice to generate offsets in California will incentivize more methane emissions reductions and strengthen the Rice

¹⁴ Population Estimates, California Department of Fish and Game, *available at* <http://www.dfg.ca.gov/wildlife/waterfowl/docs/BPStotals.pdf>

Protocol by adding value for rice farmers and project developers who participate in California offset projects.

4. AGGREGATION AND VERIFICATION

The current definition of a project in agricultural land-based carbon offset protocols is at the field level. The sizes of field can vary widely by land use or crop type. For agricultural offset projects to be commercial and to produce meaningful quantities of offsets, GHG emission reductions need to be aggregated into larger, multi-field and/or multi-landowner projects. Aggregation is one of the most important factors in the development of agricultural offset projects. It provides the basis for these projects to be cost-effective and for encouraging the engagement of the agricultural sector in GHG mitigation efforts. The state of California has a precedent for aggregation in the nitrogen tracking and reporting system developed by the California Department of Food and Agriculture (CDFA).¹⁵ This system was developed to “identify intended outcomes and expected benefits of a nitrogen mass balance tracking system in nitrate high-risk areas.”¹⁶ Through this approach, farmers report to their Regional Water Board through an aggregator. Field-level records are retained by the grower and the data is compiled by an aggregator before being reported to the relevant Regional Water Board.¹⁷ The field-level data are available for review by the Water Board upon request.¹⁸

ARB has the ability to follow a similar approach through the current version of the cap-and-trade regulations and by targeting changes to the Rice Offset Protocol. These changes are based on the cooperative forestry project model which is already accepted by ARB. A summary of this process is as follows:

- A. A grower implements one or more offset practice(s) and collects current and historical data for his field.
- B. Each grower registers as an Offset Project Operator (OPO) and obtains a Compliance Instrument Tracking System Service (CITSS) account.
- C. Each of the growers select a single Authorized Project Designee (APD) who is responsible for collection of the all the data, generating the Offset Project Data Report (OPDR), and overseeing the project’s verification. The data would be maintained by both the farmer (OPO) and the APD. The OPDR would aggregate the data from each of the OPOs.
- D. As a part of the verification, every OPO in the OPDR would be subject to a desk review of their data and calculations by the verifier.
- E. The verifier would then apply a risk-based sampling methodology and statistical sampling requirements for site visits at the aggregate level.

Thus, the ARB Rice Offset Protocol and associated ARB regulations must include provisions that allow for the aggregation of multiple emissions reducing projects that are geographically and temporally distinct. This would allow for multiple fields to be bundled or

¹⁵ *Nitrogen Tracking and Reporting Task Force*, CDFA, December 2013, <http://www.cdfa.ca.gov/environmentalstewardship/PDFs/NTRSTFFinalReport122013.pdf>

¹⁶ *Ibid*, p3

¹⁷ *Ibid*, p3

¹⁸ *Ibid*, p18

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aggregated into one offset project. More detailed comments and process are available in the *Updated Proposal on Aggregation* developed by the Coalition on Agricultural Greenhouse Gases or C-AGG. CVP participated in formulating C-AGG's stakeholder proposal for aggregation that was submitted to ARB.¹⁹ Thus, CVP heartily supports the terms and provisions proposed therein.

Provisions for aggregation need to be inserted so that the ARB Rice Compliance Offset Protocol and other agriculture protocols as well, can be cost-effective and allow farmers and project developers to engage in offset generation. Without aggregation, farmers and project developers are unlikely to be incentivized to participate in agricultural offset projects at a scale that matters to the carbon market and GHG emissions reduction. This is especially true for the Rice Protocol, which is not projected to generate a volume of credits when compared with other protocols. C-AGG's aggregation proposals will provide a basis for large investments in offset projects because they allow single Project Developers to feasibly register and develop enough acres to assemble a commercially viable overall project.

CVP would be happy to meet with ARB to discuss issues related to aggregation and work out what type of 'project data' are needed to satisfy ARB's current concerns. CVP believes that such project data should be comparable to the data requirements in other ARB offset protocols.

5. CONCLUSIONS

CVP is appreciative of ARB's efforts to streamline the DNDC Model and associated quantification tools for use under their planned Rice Offset Protocol. However, for a transparent public process, full disclosure to stakeholders should occur of what streamlining efforts will be made and what tools are to be developed.

While CVP is unable to support the adoption of this version of the Rice Offset Protocol, we would support its adoption if it included credit for Rice Straw Removal (baling) for both California and the Mid-South regions, included credit for Alternate Wet and Dry Activities for California, and included provisions to allow Aggregation.

¹⁹ C-AGG Proposal on Aggregation for Agricultural Offset Projects. January 2, 2014.