



C-AGG Aggregation and Verification Workshop: The Role of Agricultural Offsets in the CA Cap-and-Trade Program

Wednesday, October 9, 2013

Sacramento, CA

MORNING SESSION

Debbie Reed, C-AGG:

- **Meeting Overview and Introductions**
- **Review of C-AGG August 2, 2013 Submission to ARB During Public Comment Period Seeking Proposed Amendments to Cap-and-Trade Regulations**

- Aggregation – essential to cost effective offset projects that are quantifiable, enforceable, and can engage farmers
- Aggregation can help ARB manage risk, by allowing ARB to interface with aggregators who assume legal liability of offset projects, rather than individual farm operators
- Aggregators can assume liability of changing land dynamics and develop information management and tracking systems for multiple fields within a project
- C-AGG believes that:
 - Clearly defining the role of the aggregator within the cap-&-trade regulation is necessary; and that
 - Aggregation should only be allowed where expressly permitted by the compliance offset protocol.

Specific proposed changes to regulatory language (C-AGG 2 August ARB Submission):

- Add definition for aggregator as an entity to serve as an Offset Project Operator (OPO);
- Require ARB accreditation for aggregators, with specific conforming language to accompany this requirement, consistent with current ARB requirements for accreditation of Verification Bodies.

Discussion

- OPO vs. APD as aggregators? Rationale for C-AGG Choosing OPO?
 - Under APD as aggregator approach, farmers, ranchers and landowners would be OPOs, and all would be required to create a CITSS account (and we heard from farmers at July meeting in Detroit, and in previous meetings, that they are reticent to make personal data publicly available – and CITSS accounts are publicly available), all would have PDD, all would be subject to annual verification. APD allows project development and verification in bulk: 1 report, 1 verification, but every farm within a project would still need to be visited. Efficiencies of scale achieved by APDs in management reporting systems, data collection, negotiating discounts for bulk verification.
 - APD model could work. Definition of OPO could allow grouping of farmers.

Greg Mayeur, ARB: Offsets Implementation Cost Containment



- Rice in CA: 350-700 tons CO₂e/year @ \$10 ton works out to a couple of cents per acre. Question is how to help encourage farmers (rice farmers, in this instance) to engage and participate in offset opportunities?

Relevant Opportunities within the CA Regulations (starting point)

- Small projects (<25,000 mtCO₂e) can verify biennially – i.e., can skip one year, but credits are only awarded post-verification
- APD – Tend to operate multiple projects in specific project type/area, with a single entity to aid in MRV (negotiated discounts), which creates economies of scale. Each project is credited individually and not dependent on the success of others. Can have data collection technologies/methods that an individual farmer would not have.
- Cooperatives (forestry offsets)
 - Multiple forest owners can join together to form a single project, but must be co-located or within same geographic region
 - All lands credited together and depend on success of others – if one forest owner is in non-compliance, the whole project is terminated
 - Verification occurs every 6 years (slow growth and credit accrual)
- ARB is currently working with others to streamline DNDC (for the rice protocol), to make it more user friendly
 - Contracting to develop front and back ends for DNDC
- Verification tools:
 - ARB very interested in remote sensing and other viable verification technologies (e.g., rice in mid-south is mostly irrigated; can utilize pumping/electricity records to verify irrigation – easy for verification)
 - Q: Will APDs, OPOs know how to use advanced (e.g. remote sensing) technologies?
- ARB Accredited Verifiers
 - Staffing – minimum 2 accredited verifiers on staff
 - Liability insurance required
- Outstanding questions on aggregation not addressed in C-AGG's August 2 submission – additional details, comments, suggestions welcomed:
 - How are reports submitted?
 - Frequency of verification?
 - Number/percent of projects verified annually (within an aggregate)?
- ARB-identified hurdles with aggregation
 - Inconsistent with WCI Design Document
 - ARB works with Quebec, need to be aligned. Differences of opinion must be addressed to arrive at consistent approaches.
 - Not necessarily a deal-breaker, but an issue for ARB.
 - Inconsistent with transparency requirements
 - Individual project operators need to be made publicly available
 - Each project location and all project data has to be public
 - Publicly available data/info is limited to what is required in the Offset Project Data Report (OPDR)



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- Centralized reporting and verification with heterogeneous baselines
 - Must understand how each individual field performs in relation to individual baselines: complicated
- Uncertain implications of an adverse verification
 - If one field/one farm receives adverse verification, what does that mean for the entire aggregate?

Discussion – General Offset Requirements

- Apparent inconsistency: forest cooperative projects treat multiple plots as one project – seems this could also apply to ag projects? Downside is that aggregation of ag producers into one project via cooperative approach means that one bad actor can lead to termination of the entire project.
- Since farmers have indicated they don't want their personal information public, we need to understand how much personal information farmers are willing to share publicly. See example of information required from ODS and livestock projects – not much information is required; for agriculture, much of the required information would be relative to field locations and practices/practice changes.
- Suggest perhaps just make field data/location available – don't necessarily need a map, but longitude/latitude coordinates, and/or polygons to identify fields, and identify tons of emissions reductions per field – is that transparent enough?
- Suggest that with aggregation of farms and/or fields, if one fails verification within an aggregate, do the requisite number of (additional) samples to verify the whole project. Look at the aggregate as a single project – if one farm fails, there may still be enough data across the entire project to ensure sufficient sampling and verification. Define project at macro level.
- There is some belief that, within an aggregate where 1 bad actor would lead to termination of the entire project, the peer pressure from other farmers will prevent or reduce the likelihood of a bad actor.
- For project-level aggregation in Canada, there are requirements for data management and tracking systems on behalf of the aggregator. This is also a critical part of verification.
- In Alberta the aggregator takes on the role of ensuring that farmers within an aggregate are doing the right thing; they collect and retain all necessary data, and will weed out potential bad actors from even participating in a project, or, if a producer is included but has sloppy record-keeping (or some red flag is raised by an individual producer), the aggregator will do due diligence to ensure they are up to speed and collecting necessary data needed for verification. Verification is required according to ISO and other relevant standards, including accounting standards, and now there is a Verification Compliance Guidance document that is intended to ensure a “reasonable level of assurance” is achieved via verification.
- Right now there are no aggregators in the CA system. In project level verification, there is some verification of the verifiers' data collection system and management, especially for big data protocols.
- In Alberta, the greatest proportion of aggregated agriculture projects are for no-till; verifiers can look at fuel records (e.g., to verify no-till) – which does not require a site visit – but a better indicator for verifiers is to do a site visit and look at the seeding equipment.



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- Additionally in Alberta, the aggregator is responsible for retaining all the data, evidence, etc. for every farm and field. If a farmer dies, for example, the aggregator can recreate and confirm/verify the project.
 - With rice (particularly in CA), verification can be trickier. Due to vegetative canopy during crop growth, remote sensing cannot be used to verify when boards are pulled, for instance. There is no easy measurement or verification method to confirm this. Farmer can write it in a logbook, but unalterable physical evidence is required to confirm the dates. Field visits can partially accomplish this – by asking field hands if they recall or can confirm dates that boards were pulled – but this too leaves room for error/falsification. Tamper-proof remote sensing data is desirable/optimal.
 - ARB: while there is a desire to be as specific as possible regarding verification requirements and tools, specificity can also prevent innovation or the use of new technologies not specifically identified in a protocol. Thus, ARB prefers to describe what is acceptable in guidance documents, and what is required in regulations. Additionally, ARB does not arbitrate between (and will not issue an opinion for) OPOs and verifiers who disagree on verification requirements necessary to achieve a reasonable level of assurance.
 - Regarding verification and sampling of aggregated farms/fields within a project: the key point is random selection of a percentage of farms to ensure that data is authentic and accurate. Treat it as a single project.
 - Verifier is required to do as much digging as necessary to determine whether project meets requirements to a reasonable level of assurance. Verifier has latitude as to how they verify depending on the data they are presented with.
 - ACR verification requires desk review/audits and additionally specifies 20% of randomly selected fields for a more in-depth review. Satellite imagery and geo-tagged data are accepted for in-depth audits, so site visits may or may not be required.
 - The use of LANDSAT data can be helpful (e.g. to verify flooding), but a mature crop canopy can preclude use of this imagery, and temporal resolution is fairly coarse, and may not match up with needed observational data and dates.
 - Suggestion that, to allow for new and innovative technologies within protocols, focus on functional specification, not specific technologies.
 - Verifiers want acceptable ‘guidance’, not necessarily a list of required technologies to use.
 - In Alberta, it took some years of learning to develop verification guidance documents. Initially, there was no explicit guidance on evidence needed or collection methods. Over time, industry identified the best available evidence and means to collect the evidence (methods). This is now all available within verification guidance documents.
 - A problem ARB has observed is that verifiers sometimes want to sample more plots to reach reasonable assurance, but project proponents/developers don’t always want to pay for the increased costs. The more prescriptive the protocol, the less these disagreements occur, but highly prescriptive protocols can preclude/exclude the use of new technologies or verification methodologies.
- WCI Design Document
 - The WCI Design Document (which is a living document) does not explicitly prohibit aggregation, it just does not specifically include it. The issue for ARB is that the document helps provide consistency of approaches with partners (e.g., Quebec), so it may be the case that adding aggregation to the design document will facilitate agreement with partners;

further discussion and feedback will be provided to inform whether C-AGG should work with WCI to add aggregation to the Design Document.

- Risk/Liability Discussion
 - Aggregation, if done right, will mitigate risks associated with small farmers, renters, leasers, etc., by spreading risk and reducing uncertainty.
 - Buyers will do due diligence to assess risk, limit their own risk, and even contractually give it back to the seller, regardless of ARB’s approach of “buyer liability.”
 - Buyers would rather buy from an insured aggregator than from a farmer operating on leased or rented land.
 - Sellers are required (by PG&E) to hold collateral – particularly since invalidation risks are uncertain – so they have an internal risk-based process of deciding how much collateral is needed. IETA has requirements for collateral, but the provisions are not standardized, because these are fairly new markets, so they allow for discretion on the amount of collateral required. The IETA contract is really a template that allows for customization, including valuation of reimbursement for invalidation, for instance, but it only specifies legal obligations between the two contracting parties (buyer and seller).
 - In the Alberta market, large emitters are picky about verifiers (based on historical performance and experience), and often, large emitters will do due diligence themselves on processes/procedures to ensure good verification, and they will not buy if they are not comfortable with the verification process.
 - ARB recently observed a buyer sitting in on the verification process.
 - If buyers resell credits, it is possible to track their verification, because tons are serialized, and can be traced to their source.
 - During a request for offers, if PG&E is a second buyer, they might go back to the OPO to get additional information as part of their evaluation process.
 - There was a question whether insurance products provide collateral, but Leslie responded that internationally, insurance products currently only apply to political risk, so are not really applicable in this case. There was an example cited of insurers in CA providing insurance against invalidation for ODS and livestock projects.

- APD vs. OPO as Aggregator, or New Category of Aggregator (akin to APD or OPO)
 - Regulatory definition of OPO requires registration of a Compliance Instrument Tracking System (CITSS); legal right to implement the project cannot be transferred from the owner to another entity. So even though the regulatory definition of OPO allows for potentially plural entities, e.g. multiple rice farmers acting as a single OPO, the right to implementation cannot be transferred. (It was noted that, in this case, it is hard to imagine that aggregators can assume legal authorities for project implementation, either.) Additionally, this model is more akin to the cooperative model, in which one bad actor sinks the entire project. It was noted that it may be a stretch to say that aggregators will have legal authorities for project implementation.
 - APD must be designated under OPO’s account. Allows assurances that APD can sign for OPO. ARB doesn’t want to give confidential information out unless signed by APD.
 - CITSS Accounts:
 - CITSS account requirements were developed as a “know your customer” approach, to avoid fraudulent transactions that occurred within EU ETS.

- Requirements of CITSS accounts:
 - Individual or company accounts are possible
 - Company CITSS accounts require a primary and a secondary (alternate) account representative
 - Personal information required (for individual account):
 - Name
 - Address
 - Proof of bank account (account number or balance not required, but statement showing proof of account)
 - Photo identification (e.g. driver's license or passport)
 - Proof of residence (e.g. utility bill)
 - Proof of employment/who your employer is
 - Aggregation for farmers: could be addressed by adapting cooperative model to allow fields or farms with a material misstatement or failed verification to be dropped from project.
 - ARB: baselines for ag projects are determined annually, and at the field level. So this approach for an aggregate is not a huge jump from the cooperative model.
 - Issue of aggregate/aggregator holding or owning or managing credits. ARB: if you want to hold credits, you need two representatives to sign off on releasing credits; and one to sign off on accepting credits (ARB jargon: 'Push-push-pull'.)
 - Aggregation won't work if every farmer must sign up as an OPO with a separate CITSS account. This should be the focus of the aggregation question.
 - ARB: mine owners, farmers, have no interest in protocol (and all that it entails); the APD serves as this proxy. Aggregator would be the next step.

Leslie Durchinger, TerraGlobal Capital LLC: Aggregation and Sampling Impact on Low Emission Rice Economics

- Issues of scale – how does adding more farms create economies of scale
- Pilot Projects – working with early adopters
 - California – 5 farmers, 37 fields, 4909 acres, 133 acre average field size, 7.4 fields/farmer – first growing season 2013
 - Mid-south – 20 farmers, 35 fields, 2000 acres, 57acre average field size, 1.8 fields/farmer – first growing season 2014
- Costs of developing rice offsets: three categories of costs
 - Variables on fields
 - Variability of farmers
 - Fixed/semi-fixed costs
- TerraGlobal is building a web-based data input system with AGS and EDF for ease of farmer use – prepares/feeds data directly into DNDC model embedded within the protocol
- Typical California Rice Scenario – larger fields, more fields per farmer
 - 20% sampling vs. 100% sampling. Carbon price of \$9/ton
 - What does it cost per ton to develop offset?
 - 20 % sampling Pilot - \$6, 100% sampling - \$9.12
 - 20 % sampling 45 farmers - \$3.70, 100% sampling - \$6.52
 - 20 % sampling 300 farmers - \$3.32, 100% sampling - \$6.33



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- Question from audience whether there is a possibility to brand and market low GHG emission rice; but because most rice is comingled, and CA produces less than 1% of rice globally, there is no opportunity to move the market in this fashion.
- Typical mid-south Rice Scenario
 - Less attractive. 20% wide roll out – \$5.81 cost to develop a ton
- Discussion
 - We have to think of the applicability of this modeling more than just for rice.... It's a model for agriculture protocols.
 - Variability in baseline – mostly due to changes in management – e.g., in CA, which of the three qualified activities are you implementing, and how many – 1, 2, or all 3?
 - Suggestion to utilize a common practice baseline to reduce project costs? Multiple responses, including:
 - Significant within-region variability and inter-annual variation with respect to soils and climate/weather makes this difficult.
 - There is support for discounts on tons generated, in exchange for reduced requirements, including significantly reduced verification (and verification costs). Also, there is significant potential to use common baselines in California, where geographic variability is low enough and isolated enough to allow large polygons to be drawn around areas with similar soils and moisture. Would like to look at common baseline opportunities.