



Comments to the CCAR Draft Livestock Project Reporting Protocol Version 2.0

To Whom It May Concern:

Thank you for the opportunity to submit comments to Version 2.0 of the CCAR Livestock Project Reporting Protocol. AgRefresh applauds your work in continuing to develop strong protocols that lead the industry in accounting for the GHG emissions reductions caused by anaerobic digestion of animal manure. AgRefresh is majority owned by dairy farmers, and our goal is to maximize revenue, from the sale of environmental attribute credits, for farm producers that initiate GHG emissions reductions projects. To that end, we seek to be as site specific as possible while maintaining appropriate conservativeness in calculating project based emissions reductions. Site specificity therefore serves as the basis for several of the comments below.

Thank you for your consideration of these comments. If you have any questions please feel free to let us know.

Patrick Wood
Chief Environmental Accountant

Comments:

- 1) Regarding section V.1, pg.13, Paragraph 3: This paragraph regarding calculation, estimation, reporting and verification is not as clearly written as it is in other parts of the protocol, leading to potential confusion on the part of the reader. For example, Section VII, pg 31 states, “carbon dioxide, must be reported within the project boundary, including all estimated de minimis carbon dioxide emissions.” Pg 13 attempts to distinguish between a calculation and an estimation but as the estimation would involve a calculation we suggest a revision of this language similar to that used on page 31.
- 2) Regarding section V.2, pg.15: Equation 2b includes the use of a “system calibration factor” of .8 that is designed to “account for management and design practices that result in the loss of volatile solids from the management system.” The use of such a factor is effective towards achieving a conservative calculation of baseline emissions however, for some projects this calibration factor is excessively conservative resulting in under estimation of baseline emissions. AgRefresh suggests revising the protocol to allow project developers to utilize site specific “system calibration factors” based on their “management and design practices.” Such site specific factors would need to be supported by verifiable documentation in order to assess the appropriateness of the factor used.
- 3) Regarding section V.2, pg.14: Equation 2b states that the GWP of methane is 21. While we recognize that CCAR is obligated to operate within a broader policy framework, we suggest the use of a more up to date GWP of methane of 25 based on the IPCCs Fourth Assessment Report.
- 4) Regarding section V.2, pg.14: Equation 2b utilizes the monthly volatile solids available for degradation in order to calculate baseline methane emissions. The Beta Calctool worksheet IV, allows for the “zeroing out” of the waste remaining from the previous month when solids are removed from the anaerobic system. AgRefresh suggests that based on site specific management and design practices of project operators zeroing out is not sufficient, and the current equations and instructions in the Beta Calctool result in overestimation of baseline emissions. Project operators often remove liquids containing volatile solids on a seasonal basis for field application, without completely removing all of the solids. The Calctool suggests that solids removal can only be accounted for when it is removed 100%. Therefore during months where any liquids containing volatile solids are removed from the anaerobic system, these would not be “zeroed out”, and they would still be included in the estimation of baseline emissions. In our experience, there could be several months out of the year where significant portions of volatile solids would be removed from the system in the baseline scenario, but the calculation of baseline emissions would still include these volatile solids leading to an overestimation of baseline emissions. Furthermore, the calculation of project emissions from the effluent pond should be addressed in a similar fashion as is discussed in comment 9c.

- 5) Regarding section V.2, pg.17, footnote 22: It may be helpful to project developers if an explicit list of places in the calculation where site specific variables can be substituted, and supported with verifiable documentation were provided.
- 6) Regarding section V.2, pg.15: There appear to be typos in paragraph 5 that make it confusing. We suggest this change, “Multiplying ‘VSdeg’ by ‘Bo’ is a site specific representation of the uncontrolled methane emissions that would have occurred in the absence of a digester...”
- 7) Regarding section V.3, pg.19: In the discussion of project methane emissions it might be helpful to readers and users of the protocol if examples of “methane from sources in the waste treatment and storage category other than the biogas control system, and associated effluent pond” were provided.
- 8) Regarding section V.4, pg.21: Equation 4a provides default BDE values for different combustion devices. It seems that there may be a typo in the final factor listed, Ftotal. We assume that the words, “landfill gas” should be replaced with the word “biogas.” In addition it seems that footnote 27 should refer to Equations 4 and 4a not equations 2 and 2a.
- 9) Regarding section V.4, pg.22: Equation 4b deals with the methane emissions from the BCS effluent pond. AgRefresh has several comments on this equation concerning a) the VSep factor, b) the use of a methane conversion factor, and c) the removal of solids from the effluent pond (this comment is a follow-up to comment #4).
 - a. AgRefresh suggests that an equation be provided in order to calculate the VSep factor. This factor has major significance for the project methane emissions, and it is not calculated in the Beta Calctool, rather it is left up to the project developer to calculate without any guidance on how it should be calculated besides stating that it should be 20% of the average daily VS entering the digester. The average daily VS entering the digester are not calculated in the protocol or in the Beta Calctool. In addition manufacturer specifications may show that anaerobic digesters functioning properly are significantly more efficient at degrading VS and Volatile Fatty Acids than the 20% factor allows. AgRefresh suggests that use of site specific values would allow project developers to claim accurate emissions reductions without being excessively conservative, and allow them to benefit financially from their investment in anaerobic digesters that are the most effective at mining biogas from volatile solids. We recognize that this may require performance evaluations of digester functionality, a time consuming endeavor.
 - b. The state specific methane conversion factors used in Equation 4b could be replaced with the use of the VHA equation used in the calculation of baseline emissions as it adjusts for site specific temperature variation. As this data is already built into the protocol and collected in the calculation tool it could be extended for use in calculating project emissions.
 - c. Using the VHA equation as suggested in b above would require calculation of the VSavail and VSdeg in the project emissions calculation. As mentioned in comment 4 above, this would subsequently require inclusion of site specific solids removal from the effluent pond. AgRefresh sees this as a valuable revision to the protocol. However the consequences of including site specific solids removal from the effluent pond would be different than in the baseline scenario. In the project scenario excluding the removal of liquids that contain volatile solids for field application purposes from the emissions calculation requires project developers to unnecessarily and excessively overestimate their project emissions.
- 10) Regarding section VI, pg.24: AgRefresh suggests that the protocol include guidance for the Quality Assurance and Quality Control procedures that should be used for calibration of project monitoring equipment for biogas flow and combustion, and methane concentration of biogas.
- 11) Regarding section VI, pg.25: Paragraph three states that, “In the event that the combustion device monitoring equipment is inoperable, then all metered biogas shall be assumed to be released to the atmosphere during the period of inoperability.” While we recognize the goal of this statement towards being conservative in estimating project emissions, it seems that in some cases this may be excessive. For a project that was combusting biogas and producing electricity that is being monitored by an electric utility on at least 15 minute intervals during the period that the monitoring equipment was inoperable, the electrical generation records could be substituted to show that the combustion equipment itself was operable.
- 12) Regarding section VII.4, pg.32: Discussion of the project crediting period states that, “Project developers are eligible to register GHG reductions with the California Registry according to this protocol for a period of ten years. The first reduction year commences after the biogas control system becomes operational.” AgRefresh suggests that the crediting period begin the first year that the project registers credits with the climate registry.

Comments Specific to the Beta Calctool:

- 13) Worksheet IIIa, Section IIIa.B: Input for Project methane emissions from the BCS effluent pond says that VSep should be 20% of the VS that enter the digester. In contrast the formula for this calculation in worksheet XIII says 30%. We assume that 20% is the value that should be used, but maintain the comments in 9a above.
- 14) Worksheet VII, column E for V(scf/day) links to Worksheet IIIa, column E for F(scf/month). It seems that the either the label should be changed for consistency or the calculation needs to change to adjust for the number of days in the month.
- 15) We understand the need to keep the Beta Calctool locked. A consequence of this is that the user cannot conduct formula auditing in excel with is helpful in learning how the tool works. If it is possible to accomplish both of these at the same time it may be beneficial to users of the Calctool.