Union of Concerned Scientists
Citizens and Scientists for Environmental Solutions

November 9, 2012

RE: Comments on the CAR Nitrogen Management Project Protocol Version 1.1 for public comment

Dear Climate Action Reserve,

Thank you for your answers to the concerns we raised on additionality and verification of fertilizer use reduction from our comments on version 1.0 of this protocol. We would like to raise some follow-up questions on the answers you provided. We have copied below our previous comments for reference.

On additionality, you write in your *Summary of Comments and Responses* on version 1.0 of the protocol: "Very broadly speaking, the potential value of carbon offset credits (at current prices) is small relative to avoided fertilizer costs and the expected value of crop yields. However, there is ample evidence to suggest that farmers are over-applying fertilizer in many specific situations (see response to comment #3). For a variety of reasons, it is also unlikely that these farmers will respond individually to offset price signals in their management decisions. The "theory of change" behind this protocol – i.e., the logic behind how the carbon market could drive changes in practice – is premised on the role of aggregators to not only reduce average monitoring and verification costs, but also to provide farmers with technical assistance and support they need to implement best management practices where they are not already doing so. It is in facilitating this kind of action at an aggregate level (providing assistance to farmers who may not otherwise respond efficiently to price signals) where there are likely to be cost-effective opportunities for the carbon market to make a real difference." (Response to comment #54).

You also note: "As noted in the protocol and in response to comment #34, the national trend for the last several decades has been towards increasing nitrogen use efficiency. We therefore expect to see some "business as usual" improvements that should in principle be excluded from eligibility under the protocol." "…setting a performance threshold is always a balancing act. The need to exclude "business as usual" activities must be balanced against the risk of excluding truly additional activities." (Response to comment #44).

Given this, it could be possible that the improved removed to applied ratios (RTAs) initiated by aggregators may be many times greater than any business as usual (BAU) improvements that are credited under the protocol. Conversely, especially considering the general trend towards improved nitrogen management in the country, it could also be possible that a substantial portion of the projects listed under the protocol will be due to BAU improvements, even those included in bundled reporting by aggregators.

What analyses will you perform and what indicators will you monitor to assure this protocol is registering a large majority of truly additional projects? And what actions will you take to modify the protocol if your analysis suggests a reasonable risk that a substantial portion of projects participating (perhaps over a fifth) may be due to BAU improvements in order to preserve the benefits of the protocol on fertilizer use, while also assuring credit buyers that the large majority of credits generated represent additional reductions?

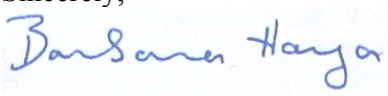
On verifying the amount of fertilizer used. We understand that verification will include a number of sources of data about fertilizer use, including corn stalk nitrate tests (CSNT), fertilizer purchase records, farm management records, interviews with farm managers during site visits by an agronomist for some sites, and attestations made by farm managers of the veracity of the data. We also understand that fertilizer application rates in baseline and project years may not be recorded in verifiable records, and that while the CSNT test can

point to wide disparities in actual and claimed rates, it does not accurately measure fertilizer application rates. Changes in documented purchases of fertilizer are a proxy for changes in application rates, but a farmer may purchase fertilizer for all of their land, but only enlist a few fields in the offsets program. In these cases, changes in fertilizer purchases for the entire farm could not necessarily be attributed to the specific fields in the program. Also, the timing of fertilizer purchased may not match fertilizer applications, for example, if reserve fertilizer is purchased when prices are low.

With the increased verification requirements added to version 1.1 of the protocol, how accurately can fertilizer application rates be verified, for baseline and project years, to ensure that excess reductions are not being claimed? Under what conditions is the verification considered sufficiently accurate?

Thank you again for the opportunity to comment and raise questions, and in advance for your responses.

Sincerely,



Barbara Haya
Consultant to the Union of Concerned Scientists
Berkeley, CA
bhaya@berkeley.edu

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

**Previous comments are copied here:**

May 30, 2012

RE: Comments on the CAR Nitrogen Management Project Protocol Version 1.0 for public comment

Dear Climate Action Reserve,

Thank you for the opportunity to provide comments on the proposed Nitrogen Management Project Protocol. These comments address two concerns: additionality and verification.

**Additionality**

The aim of the performance standard test is described in the protocol as such: performance standard tests "are specified such that the large majority of projects that meet the Performance Standard Tests are unlikely to have been implemented because of these other drivers" such as lower fertilizer costs and erosion control. While having confidence that the large majority of projects allowed to generate credits under a protocol will be additional is an appropriate requirement of a compliance offsets protocol, not enough analysis has been provided in the protocol and the background documents to support this assertion for this proposed protocol. While I have not done the analysis myself, I describe below why there is reason to be concerned that this might not be the case with the current protocol, and the type of analysis that could be done to examine whether the protocol is expected to generate a majority of credits from real and additional emissions reductions.

For the large majority of credits generated under a protocol to be additional, the following must be true:

- The protocol should effectively filter out business-as-usual activities;
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

- The protocol should provide incentives that are strong enough to enable substantially more new activity than the business-as-usual reductions that would inadvertently be credited under the protocol; and,
- The credits that would be generated by non-additional activities that could be inadvertently credited under the protocol should be counterbalanced by conservative methods for calculating the emissions reduced by truly additional projects.

By setting the performance standard at approximately the 75$^{th}$ percentile of RTAs for a given region and crop, around 25 percent of fields would already have RTAs above the performance standard. Table A.6 and Figure A.5 of the draft protocol (page 84) show that on average RTAs are already increasing in some states that are covered under the protocol. Figure A.5 also shows that RTAs vary quite a bit year-to-year in many states.

At the May 9, 2012 workshop held by CAR on the proposed protocol, the high costs of monitoring, reporting and verifying fertilizer use related to this protocol was discussed. Concerns were raised that these costs were too high, and the revenues from carbon credit sales too low, to overcome the yield risks that farmers take when shifting to new fertilizer regimes.

It is certainly possible that when projects are bundled together to lower these costs, that many farmers would choose to change their fertilizer use practices to reduce fertilizer costs and receive revenues from carbon credit sales that would not have done so otherwise. It seems equally possible that the incentives provided by the program are too weak to incentivize much change in practice, and that farmers who are already changing their practices without carbon credits could list their fields under the program and generate a non-negligible amount of non-additional credits.

To the extent that field-level level data are available in some regions, the amount of business-as-usual activity that could have been credited under the protocol if the protocol were implemented in the recent past could be assessed. For example, fields could be identified that, perhaps five years ago, increased their RTAs from past levels to levels above the 75th percentile performance standard named in the protocol for that region. Such fields would have been able to generate credits under the protocol for activities that were performed regardless of those credits if the protocol had been put in place five years earlier. Such an analysis could provide some insight into the quantity of non-additional credits that could be generated if the protocol were implemented today.

Another analysis could be done to assess the costs associated with monitoring and verification and the revenues that would be received by projects of different sizes. Interviews and surveys could be conducted with farmers to understand how much revenue they would need to receive to change their practices. An assessment of the results of existing programs, meant to reduce fertilizer use on corn and other fields (see section 2.1.2 of the CAR background paper: *Nitrogen Management Project Protocol: A Background Paper on Quantification of N2O Emission Reductions* for a list of existing programs), could also provide some understanding of the effects incentives have had in the past. Such an assessment should take into account the uncertainty associated with future offset credit prices, and any uncertainty in the benefits associated with these other programs.

Has an analysis been performed assessing the credits that could be generated by business-as-usual activity compared to the expected effect of the protocol on farmer practice? If not, such an analysis should be performed before the protocol is used, and if necessary, the protocol should be changed so that there is a high level of confidence that the large majority of credits generated by the protocol will represent real, additional reductions.

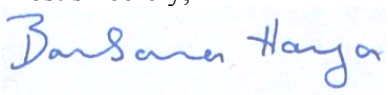
In addition, a process should be laid out for evaluating the results of the protocol over time. If there is not clear evidence over time of an increase in RTAs due to the protocol, further changes should be made to the protocol, or the protocol should be suspended, to prevent the generation of non-additional credits.

**Verification**

The protocol lacks a rigorous method to verify the quantity of fertilizer applied. It relies heavily on record keeping, but there is no assurance that the records are accurate.

For synthetic fertilizer purchasing records can be used. But there are two problems with this. First, a farmer may purchase fertilizer for all of their crops, but only list a few fields in the offsets program. How can changes in fertilizer purchase for the entire farm be attributed to the specific fields in the program? Also, the timing of fertilizer purchase may not match fertilizer applications, for example, if excess fertilizer is purchased when prices are low. Non-synthetic fertilizer is even more difficult, as there may not always be purchasing records. A compliance offsets protocol must be reasonably verifiable, especially if it is to be used under a compliance regime.

Most sincerely,



Barbara Haya
Consultant to the Union of Concerned Scientists
Berkeley, CA
bhaya@berkeley.edu

bhaya@berkeley.edu