DRAFT GREEN-E PROTOCOL FOR GHG EMISSION REDUCTIONS FROM RENEWABLE ENERGY
Summary of and Response to Stakeholder Comments: First Stakeholder Comment Period (Closed on August 21, 2007)

Stakeholder comments received by the Center for Resource Solutions (CRS) on the Draft Green-e Protocol for Renewable Energy can be found at http://www.green-e.org/getcert_ghg_re_protocol.shtml. This document summarizes the major comments received, and provides a summary of CRS responses to the comments.

1. Biomass

Stakeholder Comments:
Several stakeholder comments raised issues regarding the handling of biomass. The comments centered around three issues: a) whether to include landfill gas as an eligible renewable energy fuel, b) whether to include MSW and gasified solid waste such as agricultural waste, and c) whether to include combusted solid waste, with restrictions. Some stakeholders raised concerns about the perverse incentives that might be created if landfills can generate revenue from more refuse.

CRS Recommendation:
The Center for Resource Solutions (CRS) recommends keeping the Protocol as it was originally written, allowing the inclusion of gaseous biomass from waste biomass fuels including landfill gas, and excluding all electricity generated from non-waste biomass and that generated from combusted waste biomass. CRS will explore methods to include gasified and/or combusted biomass (waste *and* crop) in future versions, as appropriate.

While CRS fully agrees that gasified municipal solid waste and solid agricultural waste potentially could contribute to reducing GHG emissions under this Protocol, doing so would require protocols for evaluating life cycle emissions, verifying fuel types, etc. Since CRS does not currently have such protocols, these fuels cannot be justifiably included in this version of the protocol. However, we will continue to pursue ways to reliably include these fuels in future versions.

The same future consideration will be given to combusted biomass energy crops, with the recognition that combusted biomass also has additional life-cycle emissions and other negative environmental impacts that must be taken into account.

Regarding the perverse incentives potentially generated from landfill gas: The primary goal of this protocol is to ensure that offsets that represent true and unique greenhouse gas emission reductions are given their value. While CRS recognizes the concern over possible perverse incentives generated by landfill gas-based offsets, electricity from waste biomass-generated gas can represent a reduction in emissions beyond business as usual, and should be credited as such when all other provisions of this protocol are met.

2. Registries and Fuel Source Disclosure

Stakeholder Comments:
In the stakeholder comments, there was concern over the requirement that a renewable energy facility that participates in a registry must add emissions to their reported footprint. There was also a concern expressed that fuel source disclosure could lead to double-counting. Finally, several stakeholders urge CRS to reach out to GHG registries to involve them in the discussion about direct GHG emission reductions from renewable energy projects.

CRS Recommendation:
The requirement in the Green-e GHG Protocol for RE is intended to make sure that GHG registries accurately account for the emissions associated with 'null power' ('null power' is the electricity from a renewable facility that is sold without its environmental attributes, including GHGs reductions or RECs). This ensures that the 'null power' is treated as system power and not emissions free renewable generation. Assigning system power emissions attributes to null power is a best practice in U.S. electricity sector emissions accounting, and is implemented by several U.S. electric generation tracking systems and regulatory programs. This requirement is recommended simply as a way for registries to keep a more accurate accounting of GHG emissions and to avoid double counting of the GHG benefits of renewable energy generation.

Fuel Source Disclosure is not considered a claim under this protocol, and as such, does not present a concern over double counting.

CRS will continue its efforts to reach out to GHG registries to coordinate how best to account for renewable energy generation's environmental benefits. We view the first step in this effort to be the establishment of a robust standard that addresses the issues of verification, double counting and additionality, which is the goal of this process.

3. Timing test

Stakeholder Comments:
A number of Stakeholders commented on the timing test, with three major issues emerging: 1) The threshold online date (January 1, 2000) is either too recent or too old, 2) the requirement that a facility must have sold RECs, offsets, or some other tool within the first 5 years of operation is either too strict or too lenient and requires clarification, and 3) a provision should be added to exempt converted fossil-fuel facilities from the 15-year age limit.

CRS Recommendation:
CRS would like to solicit feedback from the Board and Stakeholders specifically regarding the following suggested changes to the timing test.

> ***CRS suggests moving up the threshold date to January 1, 2005, and adding provisional language which offers case-by-case exemptions to the timing test. In addition, CRS would then recommend removing the 5-year requirement stipulated in section 3-B(2).***

The Timing Test functions, in essence, as a coarse additionality filter. It is designed to make ineligible renewable electricity facilities that were built before the existence of a robust market for offsets, and facilities that obviously did not demonstrate awareness of the additional revenue stream from offsets, RECs, or other environmental services by utilizing these potential revenue streams within the first five years of operation. Since the late 1990s, there has been a significant green power market in the US, which has produced an income stream for renewable projects for their GHG emission benefits. The existence of a robust green power market and the establishment of international markets for carbon offsets in 2000 establishes the validity of using a 2000 date for section 3-B(1) of the Timing Test. However, from the perspective of customers, there may be a strong desire to know that their offsets are being generated from newer facilities. Advancing the online date to 2005 could potentially improve consumer acceptance of the protocol, but will result in a number of 'false negatives', where a facility is determined to be ineligible when is was actually additional. If stakeholders provide support for the 2005 date, CRS thinks it is necessary to attempt to limit the false negatives inherent in moving this date up by adding a provision whereby facilities with an online date prior to 2005 can be considered by the Green-e Board GHG subcommittee on a case-by-case basis. Although this does increase the administrative burden on a subset of applying facilities as well as on CRS and the Board sub-committee, CRS feels it is an approach that may address customers' expectations while also not unnecessarily excluding additional facilities.

Section 3-B(2) is another part of this same additionality filter, designed to exclude facilities that do not demonstrate the need to participate actively in the REC or other environmental commodity markets in the first five years of operation. The underlying assumption is that it is unlikely that a facility in the early days of the green power market would have been banking credits for more than 5 years. Therefore, any facility that did not take advantage of these revenue streams within the first five years or plan for that revenue is therefore non-additional. Shortening the time after the online date in which a facility would need to sell offsets, RECs, or similar goods, outlined in section 3-B(2), would sharpen this test but also run the risk of ruling additional projects non-additional (false negatives). However, if the online date in section 3-B(1) is changed to 2005 as suggested above, than section 3-B(2) is rendered moot.

Finally, CRS recognizes that there are situations in which an older facility which was converted from a fossil fuel facility to a clean fuel facility should be newly eligible for offsets, despite the facility being nominally more than 15 years old. For this reason, CRS recommends changing section 3-B of the Protocol to allow eligibility of clean-fuel-conversion facilities by adding the following text.

> The facility has been operational for less than 15 years since its online date, or date of conversion to a clean-fuel facility.
>
> A facility qualifies as a "clean-fuel conversion" if it meets part (d) of the repowering criteria outlined in section 3-B.

4. Vintage

Stakeholder Comments:
Two stakeholders commented on the "vintage" requirements, recommending either clarifying or removing them. Currently the Green-e GHG Protocol for RE recommends that only GHG reductions resulting from the generation of renewable energy that occurred on January 1, 2007 or later are eligible. In addition, a Green-e certified product may include only GHG reductions from renewable energy generation that occurred in the calendar year in which the product is sold, the first three months of the following calendar year, or the last six months of the prior calendar year.

CRS Recommendation:
CRS recognizes that there are many legitimate reasons why a facility would hold on to the emissions reductions it generates for a period of more than 21 months, including the benefit of appreciating value (offsets as an investment). However, the requirement that offsets must be generated within a 21-month window of when they were generated (see description above) is in response to a customer demand of matching purchases with generation of emission reductions. "Freshness" is an important mark of quality to offset purchasers and in response to this demand, CRS recommends that the provision remain as is.

5. Performance Standard

Stakeholder Comments:
Stakeholders made a wide variety of comments and recommendations, which can be summarized as follows:
1) Consider alternative additionality tests
2) Evaluate the result of the performance additionality to assess the risk of "false positives"
3) Offer further clarification on the definition of the phrase "top bracket"
4) Add language that would explicitly allow new technologies to receive fair consideration for eligibility
5) Provide guidance on who should take the on the "regulatory risk" in a long-term contract if a facility suddenly was determined ineligible under the protocol due to the implementation of a regulatory framework such as a cap-and-trade system

CRS Recommendation:
CRS recommends keeping the existing performance test for additionality, and supplementing it with further analysis on the financial incentives of renewable energy at the sectoral level and the impact of the demand for green power on renewable energy construction.

1) One of the stakeholder comments was to consider a financial additionality test as a replacement for/supplement to the performance standard. CRS has analyzed this issue and feels that a financial additionality test would be less rigorous and transparent than the current performance standard, while also being of greater administrative burden. The financial additionality test rests on the idea of conducting a financial investigation for each project under

consideration to determine whether or not the project had planned on the revenue stream from offsets, RECs, or other such instruments, and whether that revenue stream was a determining factor in the financial viability of the project.

This test has several major drawbacks in the renewable energy sector:

a. It is not a robust test within the electricity sector. Assessing project financial additionality is technically difficult, and any assessment made of a project would rely on subjective interpretation of financial data. The test leaves the protocol open to gaming.

b. Given the difficulty in determining a project's financial additionality, the administrative costs associated with the burden of proof would be quite high.

c. The financial additionality test makes eligible only those projects on the margin financially and therefore promotes the construction of marginal projects. This can have the perverse effect of pushing a project developer to build a smaller facility (in order to qualify as financially additional) instead of a larger facility that would take advantage of economies of scale. The test would also exclude from eligibility demonstration projects, or any other project that was not directly financially viable even with the sale of offsets (for example, most solar PV installations). This artifact of the test removes the ability for the offset market to foster new and innovative low-carbon energy technologies.

CRS has opted, in this protocol, to assess additionality primarily using the performance standard approach. Conceptually, the performance standard functions differently from other, project-by-project additionality tests. The concept is to step back from the individual project and a few select financial indicators, to look at the sector as a whole, and the full set of market forces, including technical, resource, and institutional barriers in addition to financial ones. The question asked during a performance test is this: Is building renewable energy facilities to serve electricity demand a business-as-usual activity, or is it additional? In this way, the performance standard determines if, given today's market conditions and all direct and indirect drivers, companies are choosing to build renewable energy.

The analysis conducted by CRS for this protocol shows that, excluding renewable energy facilities built to meet various state RPSs, only 1.6% of the new plants built in the US between 2000 and 2005 were renewable facilities. In the context of the performance standard, this shows that even with federal incentives and functioning green power and offset markets in place, there are substantial barriers that slow or prohibit the development of renewable energy projects. If this were not the case, then the percent of new build plants that use renewable resources would be much higher.

2) CRS has added a more in-depth discussion and analysis of the drivers for the capacity additions of renewable energy that were not in direct response to the compliance market. This analysis includes data on the historical size of the voluntary market and the capacity additions that have been in response to the green power demands.

3) Some stakeholders asked for a further definition of the term "top bracket". CRS will rely on

comments from stakeholders as to whether the 1.6% shown in the analysis is within the range of a reasonable top bracket. For comparison purposes other offset protocols that have used a performance analysis have settled on top brackets ranging from top 1% to top 20% depending on the characteristics of the particular sector.[1]

4) On the issue of including new technologies, CRS agrees that the protocol should be explicitly open to consideration of new technologies under the performance standard. To this end, the following language will be added to section 3-A.

> New and emerging technologies not included in the above list will be considered on a case-by-case basis, and will be vetted by the Board in accordance with the governance laws of this Protocol.

5) CRS recognizes the significance of market clarity surrounding the value of specific renewable-energy-generated offsets should a regulatory system go into place during the lifetime of the contracts for those offsets. However, one of the purposes of this protocol and the Green-e GHG Emission Reduction Certification Program is to provide consumer protection, and CRS feels strongly that, to the extent possible, consumers should not bear regulatory risk. CRS is not well positioned to assign the burden of regulatory risk to any specific party within the chain of custody of a GHG reduction, and instead leaves that decision up to the individual facilities and marketers.

6. Baseline Emission Rate

Stakeholder Comments:
Stakeholders requested further justification for how the Baseline Emission Rate (BER) was calculated, and one commenter recommended that the average between the build margin and operating margin be used for all BER, regardless of whether the renewable energy technology being compared is firm or intermittent.

CRS Recommendation:
CRS recommends that the Protocol be kept as is, with the BER for baseload renewables calculated as the build margin, and the BER for non-baseload renewables calculated by averaging the build and operating margins.

CRS recognizes that, using this methodology, there exists the potential that the market will favor building non-baseload renewables over baseload renewables. However, the organization believes that having BERs differ between baseload and non-baseload renewables most accurately reflects the true circumstances of the energy sector. While baseload renewable energy is likely to displace the building of a fossil fuel electricity generating facility, a non-baseload renewable technology is more likely to also reduce how much is being generated at an existing fossil fuel facility. Thus a combination build margin/operating margin BER is more appropriate. Additionally, this method of BER calculation follows the recommendations of the WRI RE

[1] For examples of these see the US EPA Climate Leaders program (http://www.epa.gov/stateply/resources/optional.html) and the California Climate Action Registry (http://www.climateregistry.org/PROTOCOLS/).

Protocol.

7. Carbon Calculator

Stakeholder Comments:
One Stakeholder recommended that offset providers be required, at a minimum, to make publicly available the methodology behind their carbon calculators.

CRS Recommendation
While CRS fully agrees with the need for a standardized carbon calculator, or a set of standards for governing calculators, that is outside of the scope of this protocol. CRS hopes to address this need within the larger Green-e GHG Certification initiative.

8. Tracking Systems

Stakeholder Comments:
Stakeholders commented on several issues related to REC tracking systems. These include the issue of customer-sided or behind-the-meter generation resources, the lack of tracking systems in certain regions of the United States, and the relationship between GHG emission reductions and REC tracking.

CRS Recommendation:
As currently written, the Protocol does accept behind-the-meter generation if it is tracked in a tracking system. Unfortunately, not all existing systems in the US can accommodate such systems, making behind-the-meter generation ineligible in some regions of the country. CRS will monitor this situation.

CRS is aware of plans to develop a default tracking system that would allow a generator located outside of the tracking systems currently in place to opt-in to a voluntary tracking system. This tracking system would then supplement the currently operating tracking systems, and it is our understanding that it may be operating by early 2008.

CRS agrees with the comment that tracking the RECs transferred in a tracking system is not necessarily enough to ensure that GHG reductions are being delivered to end-use customers and not being double-counted. This is why the Green-e RE Protocol is not relying exclusively on REC tracking but also on additional attestations signed by generators and marketers and, if needed, contract path auditing to assure the chain of custody.

9. Legal Test/IRP

Stakeholder Comments:
One stakeholder comment suggested removing the exclusion within the Legal Test regarding facilities built as a least-cost facility within the scope of an Integrated Resource Planning process (Section 3-C, 2), since it represents a type of financial additionality test. Another recommended greater clarification as to the intent of this provision, to ensure adaptability to future iterations of

IRPs (i.e., IRPs that include cost adjustments for carbon emissions).

CRS Recommendation:
CRS recommends functionally keeping this portion of the test as it was written in the protocol.

This portion of the Legal test is an additionality test designed to exclude facilities that are required by regulatory processes. To the extent that these facilities can be identified, they should be excluded from the Protocol.

In regards to the clarity of the provision, CRS feels that the description of this test in the Protocol appendix provides a thorough assessment as to the functional intent of the test.

10. Wave Power

Stakeholder Comments:
One stakeholder commented that, for the purposes of calculating baseline emission rates, wave power should be reclassified as intermittent.

CRS Recommendation:
CRS agrees that wave power is not inherently a baseload resource, and agrees with the recommendation to reclassify it as intermittent. Furthermore, CRS solicits further stakeholder input on the classification of wave, tidal, and other new and emerging zero-emission technologies.