Green-e Energy Call for Comments: Biomass and Repowering

1. Introduction and Background

Center for Resource Solutions (CRS), which administers the Green-e Energy certification program, seeks feedback on several provisions of the *Green-e Energy National Standard* (the "Standard"), specifically:

- repowering criteria
- biomass resource eligibility pertaining to:
  - "woody waste"
  - "all agricultural crops or waste"
  - "municipal solid waste"
  - "biodiesel"
  - "all energy crops"
  - "all animal and other organic waste"

Feedback will be accepted until **November 22, 2011**. Depending on the nature of comments received, CRS may conduct a second comment period, incorporating comments from this comment period. The current Standard and a PDF summary of the survey are available for you to view before completing the survey (each link will open a PDF in a new window):

- Green-e Energy National Standard
- Survey Questions

Green-e Energy is the nation's leading certification program for sales of renewable electricity and renewable energy certificates (RECs) made in the voluntary market for renewable energy. Created in 1997, Green-e Energy has provided oversight to an increasing proportion of voluntary renewable energy sales, certifying 62% of retail voluntary renewable energy sales in the U.S. in 2009.

The *Green-e Energy National Standard*, which defines high-quality renewable energy sources eligible for certified sales, was developed through an open stakeholder process in 2004 and 2005 and grew out of regional program policies in place between 1997 and 2004. Periodically, the Standard is assessed to determine if any changes should be made to adapt to the changing voluntary renewable energy market.

This survey should take approximately 20 minutes or less to complete.

If you need to pause while taking the survey (for example, to look up information), you may resume at any time prior to **November 22, 2011**, by using the link that directed you to this page, provided you do so from the same computer. You may also go back and change your answers at any time prior to clicking "Submit Survey Responses" at the end of the survey.

Contact information is collected for follow-up and clarification of your responses, and will not be used for company or individual attribution of responses beyond CRS staff and governance bodies.

Thank you for your time and consideration as you complete this survey. We appreciate your help with this process.

Green-e Energy Call for Comments: Biomass and Repowering

2. Respondent Background

1. Which of the following best describe your organization? Select all that apply.

- [ ] Investor-owned utility
- [ ] Co-op utility
- [ ] Municipal utility
- [ ] Electricity provider in a deregulated electricity market
- [ ] Energy project developer
- [ ] Energy investor / financier
- [ ] REC seller / marketer / aggregator
- [ ] Forestry
- [ ] Renewable electricity generator
- [ ] Non-profit
- [ ] Government
- [ ] Other (please specify)

2. Do you do any of the following? (Please select all that apply.)

- [ ] Grow, create or otherwise generate biomass fuel
- [ ] Sell biomass fuel
- [ ] Generate biomass-derived renewable electricity or energy
- [ ] Sell biomass-derived renewable electricity or energy
- [ ] Own a hydroelectric facility
- [ ] Not applicable

Green-e Energy Call for Comments: Biomass and Repowering

3. Contact Information

1. Although the contact information requested below is not necessary to complete the survey, we would appreciate your contact information. This will help us if we have follow up questions for you. We will not distribute your contact information; it will only be used for follow-up related to the Standard.

Name:

Company:

State:

Email Address:

2. May we contact you for more information or if we have follow-up questions on your feedback?

- Yes
- No

4. Woody Waste

Section II.A.5.a of Standard currently reads:

5) Solid, liquid, and gaseous forms of Biomass from the following fuels:

a) All woody waste;[FN 1]

[FN 1] Includes "black liquor" from pulp and paper processing, mill residues, industrial waste wood, and waste wood from woodworking or wood processing, so long as the wood is not chemically treated or coated.

EXCLUSIONS

Biomass resources excluded from eligibility include:
a) Wood that has been coated with paints, plastics, or formica;
b) Wood that has been treated for preservation with materials containing halogens, chlorine or halide compounds like CCA-treated materials, or arsenic. (CCA = chromated copper arsenate); and
c) Railroad ties

Qualified wood fuels may contain de minimis quantities (less than 1% of total wood fuel) of the above excluded contaminates in a) and b).

1. How should "waste" be defined in this context? (One example might be to limit waste to byproducts of industrial processes and require all other wood waste to originate at Forest Stewardship Council (FSC)-certified forests. Forestry "waste" could apply to wood waste obtained in order to prevent fire, storm damage, insect damaged wood, residual wood waste like tops and branches from forest management activities conducted in accordance with FSC practices. One alternative to FSC certification would be to require compliance with State and Regional Best Practices.)

2. What regional impacts might your suggested changes have on utilities? (For example, the changes may have a different impact in the Southeast compared to the Northeast)

3. Should sourcing from public lands be eligible, even though resources from public lands might not be eligible under certain third-party certifications like FSC?

5. Agricultural Crops and Waste

Section II.A.5.b of Standard currently reads:

5) Solid, liquid, and gaseous forms of Biomass from the following fuels:
…
b) All agricultural crops and waste;

1. Should the conversion of agricultural crops (non-waste) into renewable energy be specifically approved? Or should the eligible resource be limited to wastes only?

2. How should "agricultural waste" be defined in the context of the Standard, and in light of your response above?

6. Animal and Other Organic Waste

Section II.A.5.c of Standard currently reads:

5) Solid, liquid, and gaseous forms of Biomass from the following fuels:
…
c) All animal and other organic waste[FN 2];

[FN 2] In the case that a biogenic methane capture and destruction project (such as a dairy burning biogas produced by an animal waste digester) is receiving carbon offsets for the destruction of methane, renewable electricity and RECs generated using the heat of combustion of such methane are eligible under this Standard so long as the calculation of carbon offsets does not include the environmental benefits arising from generation of renewable electricity or of backing down generation elsewhere on the grid. Green-e Energy staff reserve the right to request offset calculation methodologies of such projects.

1. Does this language risk subsidizing slaughterhouses, animal fat rendering or other such processes?

2. Should Green-e Energy limit this provision to animal excrement, and perhaps other animal derived materials that are not only available after the animal has died (feathers, for example)?

7. Energy Crops

Section II.A.5.d of Standard currently reads:

5) Solid, liquid, and gaseous forms of Biomass from the following fuels:
…
d) Energy crops

1. Should the carbon cycle of these crops be considered? If so, how?

2. Should non-waste biomass grown as energy crops (for example, wood grown and harvested specifically as an energy fuel) be required to originate at certified forests or plantations? If so, which certification programs should be considered and why?

3. Should non-waste biomass energy crops be required to have originated from forests or plantations complying with state or regional best management practices?

4. If eligibility of energy crops was removed entirely, what impact would that have on the market for biomass fuel and the voluntary renewable energy market, in your opinion?

8. Municiple Solid Waste

Section II.A.5.f of Standard currently reads:

5) Solid, liquid, and gaseous forms of Biomass from the following fuels:
…
f) Municipal Solid Waste is eligible if it is first converted to a clean burning fuel that is then used to generate electricity. The solid waste conversion facility for converting the municipal solid waste to a clean burning fuel must meet the following criteria [FN3]:

i. The facility uses a non-combustion thermal process to convert the municipal solid waste to a clean burning fuel.
ii. The technology is designed to produce no discharges of air contaminants or emissions, including greenhouse gases.
iii. The technology produces no discharges to surface or groundwaters.
iv. The technology produces no hazardous wastes.
v. To the maximum extent feasible, the technology removes all recyclable materials, including plastics, and marketable green waste compostable materials from the solid waste stream prior to the conversion process and the owner or operator of the facility certifies that those materials will be recycled or composted.
vi. The facility complies with all applicable laws, regulations, and ordinances.

Third-party verification that an MSW facility has met these criteria is required in order for the electricity or RECs from a facility to be used in a Green-e Certified product. The California Energy Commission can provide this verification in California and TerraChoice, an environmental consulting firm, which provides facility verification services (www.terrachoice.com), may be able to provide this service in other regions. Facilities may also petition Green-e Energy to allow an alternative third-party to perform this verification if that party meets appropriate standards.

[FN 3] Criteria adapted from the California's "Renewables Portfolio Standard Eligibility Guidebook," August 2004. This guidebook can be downloaded at: http://www.energy.ca.gov/portfolio/documents/guidebooks/2004-08-20_500-04-002F1.PDF.

1. Under current language, determination requires an evaluation of sorting methods to achieve maximum recycling. The requirement of zero emissions is extremely difficult to achieve. This is also a regulated area, where adequate oversight may already exist.

• Do you feel that current MSW regulations in the US and Canada at the National or State/Province level adequately address the concerns/criteria above?
• Are there other standards against which to evaluate the environmental preferability of MSW as an electricity fuel?

2. The requirement around gasification in subsection *f* part *i* puts MSW fuel in a form that can be burnt more cleanly and pollutants to be removed more easily, but this may not be the only way to achieve clean burning fuel.

• Should this requirement remain in the Standard?

• Are there other technologies that utilize MSW as an electricity fuel source, and limit or eliminate pollution that should be specifically addressed in the Standard?

9. Biodiesel

Section II.A.6 of Standard currently reads:

6) Biodiesel (B100) that is used to generate electricity is eligible for Green-e Energy. Biodiesel blended with petroleum diesel is permitted if all of the following conditions are met:

The biodiesel is separately measured (and verified) from the petroleum diesel; and

Contracts are in place to allow CRS to verify that the biodiesel was converted to electricity.

Only the amount of electricity generated from the biodiesel may be counted as part of a Green-e Energy Certified product.

1. Should Green-e Energy consider the lifecycle of biodiesel creation, and the lifecycle impacts of the resources used to create biodiesel?

2. Should the Standard be extended to include other types of biofuels? If so, what types and why?

10. Waste-to-Energy

The Standard does not currently address Waste-to-Energy

The current Standard doesn't specifically address Waste-to-Energy technologies as a resource class. Waste-to-Energy is the process of creating energy from the incineration of a waste source. Most processes produce electricity directly through combustion, or produce a combustible fuel commodity, such as methane, methanol, ethanol or synthetic fuels. Currently, Waste-to-Energy technologies may qualify as a fuel if the waste can be sorted sufficiently to meet the Municipal Solid Waste criteria, however these criteria are specific to MSW only and do not consider the general class of Waste-to-Energy processes.

1. Should Green-e Energy directly address the eligibility of Waste-to-Energy technologies?

2. The current Standard is intended to designate not only renewable energy, but environmentally preferable energy. In instances where a renewable fuel source is known to have substantial negative impacts on particular areas of the environment that are not otherwise effectively regulated, Green-e Energy stakeholders have requested additional criteria to account for these risks, for example, in the case of new impoundments for hydropower and certain types of biomass. By contrast, wind power does not require additional review of avian impacts as the permitting and other regulatory processes take this into account.

Many types of biomass are renewable because they replenish themselves on a timescale compatible with use. Are there biomass resource types that are discussed in the Standard or this survey that should be subject to additional scrutiny based on their environmental impacts? If so, please provide examples of such resource types and criteria by which they should be evaluated.

11. Additional Biomass Comments

1. Please provide any additional comments you wish to share with Green-e Energy regarding biomass eligibility under the Standard.

12. Repowering Criteria

On the next page you will be asked two questions about the Green-e Energy Repowering Criteria. Below, background and points to consider are presented.

Based on comments received during previous stakeholder review periods and comments received over the past year, Green-e Energy is seeking feedback on the repowering criteria in the Standard, and whether and how they should be changed to meet the intent of the Standard. These repowering criteria allow a facility first built before 1997 (the current "New Date"; see Section II.E.1) to apply to be considered "new" for the purposes of Green-e Energy eligibility, if the facility owner can demonstrate that over a two-year period the facility's "prime generation equipment" (for example, the boiler in a biomass facility) was replaced with brand new equipment, and the cost of that equipment was greater than 80% of the value of the total facility after that replacement. See Section II.E.2 for current repowering criteria.

These criteria are adapted from the California Energy Commission's (CEC) criteria for repowered facilities to be eligible for the California Renewables Portfolio Standard. The intent of the repowering criteria is to recognize facilities that have undertaken investment in new generation equipment to make a facility "as-good-as-new". CEC's criteria are available on page 59 of the California RPS Eligibility Guidebook; this document also presents RPS eligibility of large hydro.

Concerns received by Green-e Energy staff center around the treatment of large hydroelectric facilities (over 30MW in capacity, according to the CEC) under the Standard's repowering criteria, mainly on two points. The first is that the method of repowering for large hydro facilities is fundamentally different from that of other facilities, because of the extremely long lifespan of large hydro facilities and use of long-lasting, facility-specific generation equipment that requires periodic refurbishment without being fully replaced (though refurbishment does require that some amount of new equipment be used).

Second, hydroelectric facilities differ in terms of the scale of their infrastructure and land use compared to other technology types. Where the majority of the cost and value of a biomass generator is embodied in structures directly used to generate electricity, many large hydro facilities require installation and maintenance of concrete structures to block or direct water. Such structures are expensive but are not "generation equipment" themselves. Likewise, large hydro facilities typically affect a large land area through diverting or holding water beyond a river's normal boundaries. Combined, these two factors create a risk that routine maintenance of generation equipment at a very old facility could be used to meet the Green-e Energy repowering criteria, since the money spent on generation equipment would be far less than 80% of the cost to replace the facility outright. This would not meet a major intent of the Standard, which is to have voluntary renewable energy purchases support and encourage the development and build-out of renewable generation facilities through increasing demand for their output. The CEC does not currently allow hydro facilities over 30MW to be repowered.

Changes to the repowering criteria would be effective as of the date of release of this survey, September 21, 2011; comments received to date indicate that such an effective date would be necessary to prevent a rush of applications submitted only to seek grandfathering treatment.

Please continue to the next page to complete two brief questions regarding Green-e Energy's Repowering Criteria.

13. Repowering Questions

1. Green-e Energy staff is seeking feedback on whether and how repowering criteria as applied to hydroelectric facilities in the Standard currently meet the goal of having purchases of Green-e Energy Certified renewable electricity and RECs support new or "as-good-as-new" facilities, and whether and how the repowering criteria could be revised to effectively screen facilities in order to meet this goal and maintain the intent of the Standard.

- ○ Leave the repowering criteria intact without any changes;
- ○ Do not allow repowering of hydro facilities above 30MW in capacity;
- ○ For hydro facilities above 30MW in capacity, only allow incremental increases in capacity arising from repowering / refurbishment-type activities to be eligible, and do not allow all capacity from such a facility to be eligible. This option of recognizing capacity increases only is consistent with CEC treatment of large hydro facilities;
- ○ Other (specify below)

Additional Comments

2. Although the first question deals specifically with hydro facilities, staff seeks feedback on whether there are other considerations for repowering, whether related to technology type, facility size, or otherwise, or whether repowering should continue to be allowed at all. Please provide any specific further feedback you have on repowering below.