

**State of Maine  
Public Utilities Commission**

Amendment to Information Disclosure Rule            )  
to Permit Biomass Facilities to Net their CO<sub>2</sub>        )  
Emissions to Zero and to Permit All Landfill        )  
Gas Facilities to Net CO<sub>2</sub> Emissions to Zero         )

Docket No. 2002-745

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**JOINT COMMENTS OF  
THE UNION OF CONCERNED SCIENTISTS,  
THE MASSACHUSETTS ENERGY CONSUMERS ALLIANCE  
AND GREEN MOUNTAIN ENERGY COMPANY**

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The Union of Concerned Scientists, the Massachusetts Energy Consumers Alliance, and Green Mountain Energy Company (UCS, Mass Energy, and GME) file these comments on the critical issues raised in the above-mentioned docket.

In opening this proceeding and requesting comments, the Commission has the opportunity to recognize the critical role that renewable energy generators play in improving the resource diversity and environmental sustainability of our regional electric grid. We submit these comments in an effort to help bring about a regional consensus regarding the representation of emissions characteristics of landfill gas and wood- and wood waste-fueled biomass facilities on disclosure labels. In our specific comments below, we address the treatment of carbon dioxide (CO<sub>2</sub>) emissions from landfill gas and wood- and wood-waste biomass separately.

Throughout these comments, we use the term “wood and wood waste biomass.” For the purposes of these comments, this term is intended to apply exclusively to the following forest-related resources:

- (I) harvesting and mill residue;
- (II) precommercial forest thinnings;
- (III) slash;
- (IV) brush;
- (V) stumps;
- (VI) clean urban wood waste such as uncontaminated construction and demolition debris;
- and
- (VII) landscape or right-of-way- tree trimmings.

We further urge the commission to explicitly exclude facilities directly combusting the following materials to generate electricity from reporting anything other than gross stack CO<sub>2</sub> emissions on consumer disclosure labels:

- (I) standing commercial timber;
- (II) incineration of municipal solid waste;
- (III) recyclable postconsumer waste paper;
- (IV) painted, treated, or pressurized wood;
- (V) wood contaminated with plastic or metals; and
- (VI) tires.

Other biomass resources that the Commission might consider eligible for net CO<sub>2</sub> reporting for disclosure label purposes include digester gas, dedicated energy crops, agricultural crops, crop byproducts, biofuels, or livestock residues. The specific comments presented here focus on facilities fueled by landfill gas and forest-related resources as defined above.

National and New England-based surveys reveal that consumers overwhelmingly support renewable energy and want a greater percentage of their electricity to be generated from such sources.<sup>1</sup> Climate change action groups are some of the most vocal and eager purchasers of green electricity.<sup>2</sup> However, under current rules, consumers relying upon an official information disclosure label to guide decisions among energy sources with the goal of minimizing climate change impacts would possess incomplete information on which to base such a decision.

As the “green” electricity market develops throughout New England, it must be the goal of each state to foster the communication of full and accurate information about electricity generating resources and their impacts so that consumers can understand the impacts of their energy sources and can make informed energy choices. In keeping with this goal, we believe it essential that operators of wood- and wood waste-fueled biomass and landfill gas generating facilities be permitted to report net (or incremental) CO<sub>2</sub> emissions information on disclosure labels, rather than gross emissions measured at the stack. We believe that under the specific guidelines described below, disclosure labels should present the overall GHG performance of landfill gas and forest-related resources because of the inherent differences between these facilities and other types of electricity generation.

### **Electricity Generation from Landfill Methane**

Landfill gas typically consists of 55% methane, a greenhouse gas that if released to the atmosphere has twenty-one times greater global warming potential than CO<sub>2</sub>. Landfill gas (LFG)

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<sup>1</sup> In an Opinion Dynamics survey conducted for the Massachusetts Technology Collaborative in February, 2002, ninety percent of respondents said they favor the increased use of renewable energy, and sixty-two percent of those respondents said they strongly favored such actions. Presentations by representatives from E-Source and the annual Roper Starch “Green Gauge” surveys indicate that consumers nation-wide favor the increased use of renewable energy.

<sup>2</sup> Mass Energy is developing a green electricity product in the state of Massachusetts and climate change organizations such as the Massachusetts Climate Action Network (MCAN) have been very active partners in the product development phase. MCAN plans to promote the purchase of green electricity as an example of a simple way for consumers to help reduce their climate change impacts.

projects result, at a *maximum*, in net CO<sub>2</sub> emissions of zero pounds per MWh due to the fact that landfill gas would otherwise be either (a) combusted through flaring or (b) released directly into the atmosphere.<sup>3</sup> When landfill methane is collected and flared, as is required of all landfills over a certain size under federal New Source Performance Standards (NSPS), methane emissions are avoided but CO<sub>2</sub> emissions occur.<sup>4</sup> The act of combusting the methane in a generating facility added at the site, rather than flaring, produces no additional CO<sub>2</sub> emissions: the CO<sub>2</sub> emissions from a NSPS landfill with or without the generator are the same. Furthermore, using LFG for electricity generation can be a substitute for electricity generation from fossil fuels, which emit CO<sub>2</sub> and many other harmful air pollutants.<sup>5</sup> In such a case, there is no justification whatsoever in showing such a source as a CO<sub>2</sub> emitter on disclosure labels.

For non-NSPS landfills (those not required to collect and flare their methane emissions) the benefits of collecting the methane, combusting it, and thus breaking the methane down into CO<sub>2</sub>, are substantial. Since methane has a global warming potential twenty-one times greater than CO<sub>2</sub>, climate change impacts are dramatically reduced when landfill gas is used to generate electricity instead of being released directly into the atmosphere. In the instance of previously unflared or uncollected LFG, there is a solid case for disclosing LFG generation as a negative CO<sub>2</sub> emitter on disclosure labels.

### **Electricity Generation from Wood- and Wood Waste-Fueled Biomass Facilities**

Biomass facilities in Maine, and throughout the region, are typically fueled by wood and wood waste products including brush and unusable remains from pre-commercial cuttings in managed forests, and sawmill residue.<sup>6</sup> It is our understanding that, typically, by the time forest-related resources arrive at a biomass plant, a majority of waste and residues that could have been put to a higher or better use have already been reused or recycled. As noted by the National Renewable Energy Laboratory (NREL), the remaining waste would otherwise decompose on the forest floor or be landfilled, both resulting in methane emissions.<sup>7</sup> Under sustainable forest management practices, vegetation grows back to replace that which was removed, and the new vegetation absorbs CO<sub>2</sub>. This re-vegetation, together with the avoidance of methane emissions from decomposition or landfilling, could result in at least net zero CO<sub>2</sub> emissions.

However, we believe that it is important and appropriate to ensure the soundness of CO<sub>2</sub> emissions claims being made by biomass generators who seek to participate in voluntary green

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<sup>3</sup> EPA Landfill Methane Outreach Program. "Landfill Methane as Green Power." (<http://www.epa.gov/lmop/gp/gp.htm> 1/27/03).

<sup>4</sup>EPA's New Source Performance Standards (NSPS) and Emission Guidelines for Municipal Solid Waste (MSW) landfills require LFG to be collected at landfills that: (1) have a potential capacity greater than 2.5 million metric tons (MMT), and (2) have the potential to emit more than 50 MT (metric tons)/year of non-methane organic compounds (NMOCs). This regulation affects between 600-700 landfills, which is approximately 18% of landfills in the country. World Resources Institute, Green Power Market Development Group. "Landfill Gas Resources." (<http://www.thegreenpowergroup.org/landfillgas.html> 1/27/03)

<sup>5</sup>EPA Landfill Methane Outreach Program. "Landfill Methane as Green Power." (<http://www.epa.gov/lmop/gp/gp.htm> 1/27/03).

<sup>6</sup> This information is based on signatories' communications with biomass generators in Maine and Vermont.

<sup>7</sup> Mann, Margaret K. and Pamela L. Spath, "A Summary of Life Cycle Assessment Studies Conducted on Biomass, Coal and Natural Gas Systems." National Renewable Energy Laboratory, September, 2000.

power markets. Therefore, we suggest that biomass generators be required to apply for permission from the Department to make a net CO<sub>2</sub> claim for disclosure label purposes.

For the purposes of this application process, we think it would be appropriate to make a distinction between the portion of a biomass generator's fuel that is derived from clean urban wood waste, and that which comes from mill residue or forestry-related residue. For the portion coming from clean urban wood waste, we believe that a net zero claim is justified under all circumstances.

For the portion of biomass fuel coming from mill waste and forestry-related residues, we suggest the Commission adopt the following guidelines for establishing a net CO<sub>2</sub> emissions claim.

- The net CO<sub>2</sub> emissions claim should be based on a conservative estimate of overall GHG performance associated with forestry-related residues and mill wastes, using the smaller end of the range of results from the best available scientific research most applicable to New England.
- Mill and forestry residues are used for purposes other than as fuel for biomass electricity generators or brought to landfills.<sup>8</sup> Therefore, the carbon content of these reused and recycled residues do not re-enter the atmosphere as CO<sub>2</sub> or methane in a comparable time frame. We suggest that the Commission account for this fact in the following way:
  - 1) determine the portion of residue from each source industry (mill and forestry residues) that is typically re-used or recycled (i.e. not used biomass combustion or landfilled);
  - 2) use this percentage to develop a multiplier (an appropriate fraction); and
  - 3) apply that multiplier to adjust the portion of the generator's electrical output that is fueled by mill or forestry residue; and
  - 4) allow a net CO<sub>2</sub> emissions claim only for the remaining portion of electrical output.
- To ensure that the source of the biomass fuel is from a sustainably managed forest, the original source of the wood or wood product should be harvested from forests certified by Forest Stewardship Council (FSC)<sup>9</sup> Alternatively, the biomass facility must show that the original source of biomass fuel should come only from land which is harvested and managed so that it sequesters at least the same amount of carbon than the land in its preharvested condition.

We request that the Commission issue a draft rulemaking for public comment that includes the mechanisms by which it would apply these guidelines.

We believe that by following the guidelines in the three above bullets, the Commission will ensure:

- the net CO<sub>2</sub> emissions represented on consumers' disclosure labels is based on sound, conservative scientific data,
- current forest residue and mill waste uses and disposal practices are fairly represented, and

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<sup>8</sup> Some examples of markets for mill and forestry residues include recycled building materials, particleboard, animal bedding, bark mulch, etc.

<sup>9</sup> See <http://www.fscoax.org/principal.htm> for more information.

- the forests that are the source of biomass fuel are managed in a way that provides for the regrowth of vegetation needed to absorb the CO<sub>2</sub> emitted from biomass generating facilities.

We strongly support the sustainable management of forests and encourage forest practices that enable a forest to maintain its delicate ecological balance. We believe that the Maine Forest Practices Act would be too limited for use as the criteria for forest sustainability because the biomass energy serving Maine consumers could come from forests not covered by the Act. For instance, generators throughout the regional power pool, as well as adjoining areas such as Eastern Canada and New York could provide biomass power to Maine. Therefore, we propose that biomass generators who can reasonably demonstrate that their forest-related resources originate from forests managed in accordance with the guidelines outlined above should be able to claim the net CO<sub>2</sub> emissions characteristics of their projects.

We do not believe that it is necessary to account for the CO<sub>2</sub> emissions associated with the harvesting, production, or transportation of biomass fuels to electric generating facilities on the disclosure label unless a similar requirement were applied to all electricity sources reported on the disclosure label.

Finally, for generators using biomass fuels other than forest related resources, including digester gas, dedicated energy crops, agricultural crops, crop byproducts, biofuels, or livestock residues the Commission should develop similar standards for accepting a net CO<sub>2</sub> claim.

### **Recommendations**

The following statements are intended to respond specifically to the questions posed by the Commission in its Notice of Inquiry.

1. As a general matter, we believe that the Maine electricity consumer disclosure label should account for net CO<sub>2</sub> emissions of LFG and wood- and wood waste-fueled biomass projects. The major exception to this is when a biomass or landfill gas generator trades the emissions reductions in offsets in CO<sub>2</sub> markets. If such CO<sub>2</sub> emission offsets were sold to a CO<sub>2</sub> source such as a fossil fuel generating facility, then the disclosure reporting of gross CO<sub>2</sub> would be more appropriate to avoid double counting of CO<sub>2</sub> benefits. For our purposes, we use the term offset here to mean a project or activity that is designed to achieve net emissions reductions at a location other than a CO<sub>2</sub> source such as a fossil fuel generating facility.

In the case of LFG facilities, the net claim could mean either zero or negative CO<sub>2</sub> emissions, depending on the circumstances. In the case of wood- and wood waste-fueled biomass projects, the Commission should seek to develop standard “net” or “incremental” emission rates for wood- and wood waste-fueled biomass facilities according to the guidelines we describe above.

2. We believe that a standard, such as the one proposed here, should be used for determining when a net emissions claim is appropriate for a wood-burning biomass generator. We strongly prefer the standards described above over a standard defined as

anything other than conversion of a property to an impervious surface. We do not believe that such a standard is appropriate for determining a net CO<sub>2</sub> emissions claim. Further, we support the development of net emission rates that are appropriate for a given fuel source.

3. EPA and other scientific data indicate that there are no circumstances under which electricity generation from landfill gas result in a net increase in CO<sub>2</sub> emissions compared to an alternative scenario. We believe that disclosure labels should report zero CO<sub>2</sub> emissions from NSPS landfill gas facilities that are required to collect methane gases. In the case of non-NSPS facilities fueled by LFG from landfills that are not required to collect methane, we suggest the Commission consider allowing the disclosure labels to include the net GHG benefits associated with these facilities.
4. We believe that reporting of net CO<sub>2</sub> emissions from all biomass plants that are providing electricity to Maine's consumers and are fueled by forest-related products should be based on the guidelines identified above. While some facilities may be fueled by wood or wood-wastes that are harvested in a way that justifies reporting the facility's net CO<sub>2</sub> emissions as zero, we do not believe that this will always be the case. We have suggested guidelines for accounting for such variations. In particular, we believe that the application of the FSC standard is a preferable and superior measure of whether biomass fuels come from sustainably managed forests.

Lastly, we point out to the Commission the role of the New England Generator Information System (GIS). The purpose of the GIS is to support all of the attribute laws in New England, including disclosure rules. However, until attribute laws in other New England states change, it is not appropriate to record net CO<sub>2</sub> emissions rather than gross stack emissions in the GIS as it is currently designed. Doing so could lead to significant confusion because the GIS certificates from biomass generators located in Maine may be used in any New England state, including states that do not have the same approach for CO<sub>2</sub> reporting for disclosure. The converse could also be true: GIS certificates from biomass facilities outside of Maine could be associated with electricity delivered to Maine consumers.

It is our hope that the recommended change in Maine's disclosure rules will require NEPOOL members to consider how to accommodate such a change. It is possible, for example, that NEPOOL will modify the GIS to allow biomass generators to record both gross and net emissions in separate fields. As a result, we recommend that the Commission issue disclosure rules for net CO<sub>2</sub> emissions from biomass facilities that do not rely on the GIS only, but encourage use of the GIS if it accommodates such treatment. In the event that the GIS does not accommodate such treatment, the Commission should allow for adjustments to GIS data for the purposes of disclosure label reporting.

In summary, we believe it appropriate to use a net CO<sub>2</sub> emissions representation for disclosure purposes for landfill gas and forest-related biomass plants according to the above described guidelines, and we encourage the Commission to take the necessary steps to facilitate such claims. We believe that reporting net CO<sub>2</sub> for such generators is entirely consistent with the purpose of the information disclosure label: to provide essential information to consumers so that

they can more accurately understand the impacts of their energy sources and make informed energy decisions. Therefore, we urge the Commission to issue rules that would allow for the accommodation of such reporting practices in its disclosure rules.