June 3, 2011

Senator Benjamin Downing
Senate Chair, Joint Committee on Telecommunications Utilities and Energy
The State House, Room 413-F
Boston, MA 02133

Representative John Keenan
House Chair, Joint Committee on Telecommunications Utilities and Energy
The State House, Room 473-B
Boston, MA 02133

Re: Massachusetts Renewable Portfolio Standard (RPS) Draft Regulation on Woody Biomass Eligibility, 225 CMR 14.00

Dear Chairmen Downing and Keenan,

The Clean Air Task Force ("CATF"), a Boston-based nonprofit organization dedicated to reducing atmospheric pollution through research, advocacy, and private sector collaboration, applauds the efforts of Massachusetts to determine, using the most up-to-date science, the role that bioenergy may play in reducing greenhouse gas ("GHG") emissions. Through this process, Massachusetts is establishing itself as the leader in proper GHG accounting of biomass energy. However, some major revisions to these draft final regulations are needed so as to avoid exactly the type of GHG increases from bioenergy that the Manomet Center predicted and that these regulations are meant to prevent.

We urge the Joint Committee to close a loophole in the new draft regulations that is created by the interaction of several of its key provisions, two of which were added to the proposed regulations after they were circulated for review in 2010. The combined effect of the new provisions is to encourage harvesting scenarios that, based on the analysis conducted by the Manomet Center in its 2010 study, are likely to increase GHG emissions as compared to fossil fuels.

Background

The expectation that policies promoting biomass-derived electricity would play a significant role in climate change mitigation has been undermined by recent studies that herald a much needed, serious reexamination of the climate impacts of biomass.

The term "biomass" encompasses a wide range of potential energy feedstocks (e.g., whole healthy trees, bark beetle infested trees, dedicated energy crops, construction debris, etc.), each with a different carbon emissions profile over its lifecycle. Nevertheless, it is often claimed that biomass-based power generation is inherently "carbon neutral" or "climate neutral" – regardless of the type of biomass – because the CO_2 emitted during combustion is re-sequestered through subsequent regrowth of plant material. Emerging research – including, notably, the 2010 *Biomass Sustainability and Carbon Policy Study* by the Manomet Center– has broadly discredited this notion.

Specifically, the research shows that the time period in which the "resequestration" of CO_2 occurs is of the utmost importance. Under most biomass harvest scenarios, "carbon neutrality" will not be achieved in the policy-relevant future (depending, to some extent, on the type of fossil fuel replaced).

Assessing the net climatic impacts of a given type of biomass requires a carefully targeted lifecycle assessment ("LCA") of the GHG emissions, including direct and indirect emissions (i.e., emissions from land use change because more land must be brought in to compensate for bioenergy and other demands). The science and methodology of LCAs has evolved rapidly in recent years and continues to be improved. Again, the Manomet study commissioned by the Commonwealth is on the leading edge of this effort.

Moreover, while some "sustainable biomass" is available (typically in the form of forestry residues and other materials that have a significantly better net GHG emissions profile than whole tree harvesting), utility-scale power plants have demonstrated a clear preference for feedstocks derived from whole trees, to the detriment of climate and the environment. A key point to be taken from the Manomet study is that if biomass-based electricity is to play any role in climate change mitigation, policies are needed to steer the industry away from whole tree harvesting and toward the use of forestry residues and other waste.

The Loophole in the Draft Regulations

Two provisions in the draft regulations before the Joint Committee collectively create a gaping loophole that threatens to undermine the Commonwealth's GHG reduction goals. First, the definition of eligible biomass residues was revised to include the harvest of whole trees for thinning. Second, the new guidelines for removing biomass, including residues, allow up to 40% of the total biomass removed from a forest to be used for energy. Third, using the poorly-targeted LCA established under the regulations, the harvest of whole trees is treated as causing zero carbon emissions within twenty years. (This is because whole trees are treated in the same fashion as truly residual tops and branches, and it is assumed – without basis or explanation – that the whole trees would almost entirely decompose within that period if not used for bioenergy.) In short, the draft regulations treat the harvest of whole trees for bioenergy as carbon-neutral, even though that practice would be fundamentally the same as the harvest scenarios that Manomet found would increase emissions as compared to fossil fuels.

The definition of eligible woody biomass in the draft final regulations includes: "Trees removed during thinning operations, the purpose of which is to reduce stand density and enhance diameter growth and volume of the residual stand." Carefully designed and executed thinning operations may provide climate benefits, but the regulations do not sufficiently distinguish between those kinds of operations and thinning operations that are not calibrated to increase net carbon sequestration. The language of the definition is broad enough to encompass several climate-detrimental harvest scenarios analyzed by the Manomet Center.

In contrast, the initial proposed draft regulations were much more restrictive. Thinning timber harvests were not categorically excluded from eligible biomass, but they were heavily restricted. First, the thinning material could not exceed 15% of harvested material. Second, the regulations called for the development of LCAs, presumably along the lines of the analytic methods used in the Manomet study. Together, these two provisions greatly restricted whole tree removals, including removal from thinning. The proposed final regulations, however, create a significant loophole by raising the 15% harvest threshold to 40% for a large percentage of forest soil types, and by treating the thinning of whole trees in the same way that true residues are treated in the lifecycle analysis. Unlike the collection and utilization of tops and branches for energy production, the removal of these additional living trees reduces carbon stocks and could also reduce ongoing sequestration rates going forward. Accordingly, determining lifecycle emissions associated with he use of biomass

from thinning operations requires a separate, specific analysis – something the draft regulations fail to provide.

Under the loophole in the draft regulations, a landowner could choose to remove the full amount of permissible biomass (that is, up to 40% of harvested material) by using whole tree thinning only, while leaving behind true residues like tops and limbs. Because whole trees work better than true residual material for producing wood pellets (which are an increasingly valuable global commodity), there is a market incentive for landowner to do just that. Pellet manufacturers are likely to find ways to comply with the draft final regulations while harvesting primarily whole trees, thereby frustrating the GHG reduction goals of the Commonwealth and the recommendations set forth in the Manomet study.

Another consequence of the loophole is that the regulations authorize several harvest scenarios that could result in greater net greenhouse gas emissions than the scenarios analyzed in the Manomet study. In the basic scenarios considered by the Manomet Center, biomass material was harvested solely from mature forests and material from thinning operations was combined with a large quantity of true residues (which would otherwise decompose almost completely within a ten-year period). The draft final regulations would permit harvesting practices that are outside of the scope of these scenarios – *e.g.*, by allowing the harvest of mid-age forests and the removal of just standing trees for bioenergy (as described above). The GHG emission profiles associated with both of these scenarios are almost certainly worse than the scenarios analyzed in the Manomet study.

There are various ways in which the draft regulations' loophole could be fixed, so as to ensure that the regulations only incentivize biomass-based power options that actually reduce net GHG emissions. Most importantly, the Joint Committee should insist that the finalized regulations:

- Treat biomass from thinning differently from residue biomass. Given the fundamental differences in their carbon profiles, the regulations must require that the lifecycle GHG emissions of biomass from thinning be analyzed separately from residual biomass (*e.g.*, tree tops and limbs).
- Appropriately restrict the eligibility of biomass derived from thinning operations, and ensure that residues constitute the bulk of the biomass harvested for energy production.

Again, we applaud the Commonwealth's efforts to determine the proper role that bioenergy will play in reducing GHG emissions based on the most up-to-date scientific evidence. However, as drafted, the proposed final regulations contain a major loophole that would allow for types of biomass harvesting that the Manomet study found would result in significant increases in GHG emissions over fossil fuels. This loophole has the potential to undermine the purpose of these regulations in reducing GHG emissions and may actually lead to increased GHG emissions over fossil fuels. We therefore urge the Joint Committee to correct this oversight.

Sincerely,

/S/

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