



Via electronic mail
doer.biomass@state.ma.us

June 18, 2012

Rick Sullivan, Secretary
Executive Office of Energy & Environmental Affairs
100 Cambridge Street
Boston, MA 02108

Mark Sylvania, Commissioner
Department of Energy Resources
100 Cambridge Street
Boston, MA 02108

Re: Proposed Final Regulations Governing Eligibility of Biomass under the MA RPS 225 CMR 14.00 et seq. (released April 27, 2012)

Dear Secretary Sullivan and Commissioner Sylvania:

I am writing on behalf of the Natural Resources Defense Council and our 39,000 members and activists in Massachusetts to thank you for the opportunity to comment on the Proposed Final Regulations Governing Eligibility of Biomass under the Commonwealth's RPS. We commend you for ensuring that the proposed final regulations are based on the latest science, notably as reflected in the June 2010 Biomass Sustainability and Carbon Policy Study prepared by the Manomet Center for Conservation Sciences ("Manomet Study").

We particularly welcome the most recent revisions to the carbon accounting and forest harvest residue retention requirements. These new standards will limit carbon-intensive uses of woody biomass that would undermine Massachusetts's compliance with the Global Warming Solutions Act (GWSA). In doing so, the revised rules establish nation-leading standards for biomass policy in terms of robust carbon accounting, greenhouse gas (GHG) emission limits, minimum efficiency thresholds and biomass harvest residue retention standards.

• The revised GHG accounting guidelines represent an essential science-based improvement over the draft guidelines released in May 2011.

We support your decision to establish GHG profiles of eligible woody biomass consistent with current science. The carbon accounting distinction between harvest byproducts – i.e., "residues" – on the one hand, and thinned whole trees, on the other, is

an *essential* correction to the draft rules. In particular, the Manomet Study and several other recent studies show that burning whole trees to produce electricity produces carbon deficit reduction times measured in decades. On the other hand, electricity generation fueled by short-rotation crops and timber harvest residues (tops and branches) have much shorter carbon deficit reduction times and represent appropriate alternative fuel sources. Failure to draw this distinction would have resulted in a truly ineffective set of regulations.

While the revised guidance cannot be expected to perfectly capture the exact carbon profile of every material used as biomass fuel, the revisions strike a practical balance that can be expected to promote reliance on residues rather than whole trees, consistent with the basic instructions of the Manomet Study and the emerging worldwide body of related carbon accounting science. Importantly, these changes to the carbon accounting guidelines will, in turn, help secure the benefits of the rules' requirement for a 50% reduction in GHGs as compared to natural gas over a 20-year time frame.

• The revised biomass eligibility guidelines also make important progress toward protecting forests by limiting the removal of forest harvest residues.

The May 2011 draft guidelines would have rewarded substantial overharvesting of tree tops and limbs as biomass fuel, in that up to 100% removal of harvested tree tops and limbs would have been allowed without RPS eligibility repercussions. By requiring that at least 25% of all such harvest residues be retained in the forest after a harvest, and that 100% of residues be retained in locations where soil quality is poor, the revised guidelines appropriately protect soil nutrient content and other ecological services in the forests where harvests occur. This, in turn, will help protect forests that serve so many critical ecological functions – including their essential role as carbon sinks.

We support the additional prohibition on biomass harvesting of old growth forests, forests on steep slopes, all naturally-occurring downed woody materials and snags, and critical wildlife habitats. These protections are essential to ensure that biomass demand does not imperil critical forest ecosystems.

• The guidelines for GHG accounting and forest residue retention strike the right balance between specificity and streamlining.

The guidance and reporting requirements for GHG accounting, forest residue retention, and eligible fuel certification are appropriately streamlined and do not represent overly cumbersome documentation for parties seeking financial incentives under the Commonwealth's RPS. We commend the DOER for putting significant advance thought and effort into the structure and requirements associated with these guidance documents and spreadsheets. The information needed for completing the guidance documentation is typically readily available to forest managers as part of traditional timber harvest planning, and similarly available to plant managers and power sector operations. The proposed cross-referenced spreadsheets and readily-available source information should make documentation straightforward. Absent these guidelines and

reporting documents, the Commonwealth would simply be unable to verify progress under the proposed regulations.

Given the untested nature of these compliance guidelines however, implementation of the regulations warrants close monitoring. The eligible woody biomass fuel compliance tracking and monitoring mechanisms, in particular, may call for refinement over time to ensure that they demonstrate actual compliance with a reasonable degree of confidence. Likewise, some of the policies and protocols that currently in *guidelines* ultimately may prove (partly or wholly) to be better suited for inclusion in *regulations* in light of the typically more enduring and predictable nature of regulations, as well as the procedural safeguards that govern rule modifications.

- **The forest salvage provisions for “fire-adapted forest ecosystems” should be removed.**

DOER has added forest salvage for the purpose of reducing fire hazard on forest lands in “Fire-adapted Forest Ecosystems” as a permissible source of eligible biomass fuel. This addition is a significant flaw in the proposed regulations and should be removed in its entirety.

First and foremost, salvage logging for the purposes of fire reduction - and its effect on carbon emissions - is a highly complex issue with many unknowns and significant potential to increase greenhouse gas emissions.

Several studies^{1,2} have shown that thinning in fire-adapted forests is a net carbon emitter for 50-100 years, even if used to displace fossil fuels and even if the thinning successfully changes fire regimes. Moreover, in the case of Massachusetts, emissions associated with the significant transportation requirements associated with fire-adapted salvage would potentially outweigh any purported benefits.

Notably, this issue was *not* addressed in the Manomet Study, presumably because fire-adapted systems are relatively rare in New England. Absent an analysis of this issue specific to Massachusetts in a comparably rigorous study, we see little justification for including salvage in fire-adapted systems. The provision in the proposed rules represents an arbitrary addition with no scientific basis, and could offset real gains made under the regulations.

- **Efficiency thresholds to qualify for incentives are essential for a robust RPS.**

By increasing the minimum efficiency threshold for eligible biomass power conversion units to 50%, in most instances, in order to secure partial Renewable Energy

¹ Clark et al. “Impacts of Thinning on Carbon Stores in the PNW: A Plot Level Analysis” Oregon State University College of Forestry. Web. 25 May 2011.

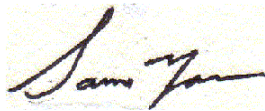
² Hudiberg et al. “Regional carbon dioxide implications of forest bioenergy production” Nature Climate Change 1, 419–423 (2011).

Certificates (“RECs”), the revised rules represent a material improvement over the May 2011 draft. This important revision will help ensure consistency not only with the Massachusetts GWSA’s requirements but also with the RPS requirement that biomass eligibility be limited to “low emission advanced biomass conversion technology.”

Although the elevated minimum efficiency threshold unquestionably represents an improvement over the 40% minimum efficiency threshold proposed in the May 2011 draft regulations and guidance, it does not go far enough. This standard still allows or encourages undue waste of a finite energy resource. In a recent survey of biomass combined heat and power technologies, the United States EPA recognized the commercial availability of technologies that achieve 60 to 80% efficiency. We therefore look to DOER to continue to revisit the minimum biomass efficiency threshold consistent with the July 7, 2010 directive of former EEA Secretary Ian Bowles, the goals laid out in Section 116 of the Massachusetts Green Communities Act, and the availability of existing technology that achieves greater efficiency – all of which support a minimum threshold of 60%.

In closing, we thank you for correcting demonstrable flaws in the May 3, 2011 version of the draft rules governing woody biomass eligibility pursuant to the Massachusetts RPS, and for offering this opportunity to comment on the proposed final rules. We commend your leadership and commitment to groundbreaking science-based biomass policy. And we urge you to move forward expeditiously to finalize and implement the proposed final regulations and guidance.

Sincerely,

A handwritten signature in black ink that reads "Sami Yassa". The signature is written in a cursive style and is positioned above the printed name and title.

Sami Yassa
Senior Scientist