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Judith Judson
Commissioner
Massachusetts Department of Environmental Resources
1 Winter Street
Boston, Massachusetts 02108

Re: Proposed Guideline on Biomass Fuel Report and Guideline on Overall Efficiency and GHG Analysis

Dear Commissioner Judson:

The Biomass Power Association (BPA) appreciates the opportunity to share with the Department our views regarding the Commonwealth's proposed Guideline on Biomass Fuel Report and Guideline on Overall Efficiency and GHG Analysis ("Guidelines"). If implemented as written, the Guidelines will allow a number of New England biomass power facilities to once again participate in the Massachusetts RPS. Amending the efficiency standard for facilities demonstrating a 95% use of forest salvage or non-forest derived residues is a sensible way to incorporate biomass facilities using leftovers, byproducts, and residues as fuel, which represents the vast majority of biomass power facilities in New England.

BPA is a 501(c)(6) organization, based in Portland, Maine, with offices in Washington, DC. Our members use organic materials, primarily waste wood leftover from forestry harvests, to generate grid-connected electricity. Here in New England, there are 20 such facilities, representing nearly 600 MW of capacity. As the Commonwealth knows well, these facilities are an important source of rural jobs, contributing to the economic health of New England communities while promoting sustainable forest management.

Biomass power plants are a valuable source of renewable power, making use of waste wood that is continuously regenerated and is one of the only fuels indigenous to New England. Importantly, biomass plants are a "baseload" power source and have been a major contributor to meeting the state's requirements for renewable energy ever since they were established in 2003.[1]

Biomass plants create power by combusting residues from harvesting operations such as tops and limbs (that are otherwise left in the forest to decompose and emit carbon), or woody material from land clearing or wood product manufacturing (that is otherwise sent to landfills where it decomposes and releases methane, a highly potent greenhouse gas). Every year, new wood growth in New England's forests exceeds the wood removed. By purchasing wood waste material, biomass power plants provide a vital source of revenue for landowners. It keeps forestland economically valuable and lessens the pressure on owners to clear their land for shopping malls or housing subdivisions. Retention of forested land is critical to meeting the Commonwealth's carbon reduction goals because healthy, growing forests absorb huge amounts of carbon. Additionally, the production, collection and delivery of wood waste material create a significant number of jobs for persons with forestry and waste handling skills.

[1] See Massachusetts Department of Energy Resources, RPS and APS Annual Compliance Reports (http://www.mass.gov/eea/energy-utilities-clean-tech/renewable-energy/rps-aps/annual-compliance-reports.html)

The origins of the existing efficiency standard can be traced to the Manomet Study—commissioned in 2010. Importantly, while describing a carbon "debt," Manomet found that the greenhouse gas implications of using biomass to produce energy depend heavily on the characteristics of the technology used to burn biomass, the fossil fuel power generating technology that biomass displaces, and the biophysical and forest management characteristics of the areas where biomass is harvested. In particular, the Study confirmed there is a vast difference in the carbon emission profiles of whole trees versus wood residues. From an emissions perspective, the use of wood residues for power generation was found to be highly preferable compared to leaving these materials to decompose in the forest or in landfills.

BPA commissioned a study in 2017 by University of Illinois Professor Madhu Khanna and University of Georgia Professor Puneet Dwivedi, comparing the carbon emissions of a 43-megawatt biomass power facility in New Hampshire and those of a similar-sized combined cycle natural gas facility. Using a lifecycle analysis, the two professors found the biomass facility's emissions to be 115% less than the natural gas facility's emissions in one year; the carbon savings leveled out to 96% over a 100-year timeframe. Based on this study, and many others with similar results, biomass power facilities using byproducts and residuals will easily meet the Guidelines' 50% emissions reduction over natural gas requirement. Like Manomet, the Khanna Study found that the greenhouse gas implications of using biomass to produce energy depend heavily on the type of biomass used as a feedstock.

The Khanna study, detailing the carbon benefits of using waste wood for power generation, aligns well with the actual economics of biomass power production, which is largely accomplished by using wood waste products. Merchantable trees are far too valuable to be burned to produce power. They are used to create much-needed products such as furniture, construction material, and even paper products. Moreover, most of these alternate products sequester carbon for decades or longer. Woody waste material has few other uses. It is therefore used for fuel by the vast majority of the biomass power plants in the Northeast.

By amending the efficiency requirement, Massachusetts is recognizing the most significant findings of Manomet and Kahnna, namely, that carbon emissions are highly dependent on the type of biomass. By exempting facilities where 95% of the feedstock is forest salvage or non-forest derived residues, the Commonwealth is undertaking much needed reform to the RPS.

This proposal is a sensible fix to a previously implemented threshold that effectively barred certain New England biomass facilities from participating in the Massachusetts RPS. Since the fuel used by most, if not all, otherwise eligible biomass power plants will fall into these categories, the proposal should reinstate their eligibility.

Amending the efficiency standard also makes sense because the existing 50% efficiency standard has not reduced greenhouse gas emissions or otherwise provided any environmental benefit. Indeed, it is arguable that the existing efficiency standard has had the unintended effect of increasing GHG emissions, by shuttering renewable biomass generation facilities.

The existing fuel conversion efficiency standard, for practical reasons, has not resulted in more efficient use of biomass fuel at existing plants or caused the development of new plants. Power plant developers and operators have a pressing need to extract the maximum amount of electrical energy from every unit of fuel they consume. This is dictated by the relatively large influence that the cost of fuel has on a power plant's overall operating costs and the intense competitive nature of the wholesale generation market. Power plant operators must bid competitive prices in the wholesale generation market for every hour they wish to run. Any inefficiency in converting fuel to usable energy reduces their competitive position and puts their profitability at risk. Thus, they have every incentive to maximize the efficiency with which they convert fuel to energy.

In short, BPA applauds this commonsense change to the Commonwealth's approach to biomass power efficiency, and looks forward to its implementation.

Sincerely,

Robert Cleaves
President, Biomass Power Association