

August 7, 2017

SENT VIA EMAIL

Michael Judge
Director, Renewables Division
Massachusetts Department of Energy Resources
100 Cambridge Street, Suite 1020
Boston, MA 02114
thermal.doer@state.ma.us

Re: Comments of Conservation Law Foundation on Revised Proposed Changes to Alternative Portfolio Standard Regulations (225 CMR 16.00)

Dear Director Judge:

Conservation Law Foundation (“CLF”) appreciates this opportunity to provide comments on the Revised Proposed Changes promulgated June 2, 2017 to the Alternative Portfolio Standard (“APS”) Regulations regarding renewable thermal technology pursuant to statutory changes to the APS under Chapter 251 of the Acts of 2014 and Chapter 188 of the Acts of 2016 (“Draft Regulations”). Conservation Law Foundation submitted comments in 2016 on an earlier draft of these regulatory changes, and virtually all of our original concerns remain regarding the biomass provisions.¹ Additionally, CLF has significant concerns regarding the expansion of the definition of APS facilities to include municipal solid waste incinerators in this revised draft of the regulatory changes.

CLF is a public interest advocacy organization that works to solve the environmental problems that threaten the people, natural resources and communities of New England. Founded in 1966, CLF is a nonprofit, member-supported organization. CLF promotes clean, renewable and efficient energy production in New England, and has been deeply involved in Massachusetts renewable energy policy related to biomass. CLF’s policy analysis and advocacy around solid waste combustion over the past several decades helped shaped the Massachusetts Department of Environmental Protection’s *Solid Waste Master Plan 2010-2020: A Pathway to Zero Waste*, and this year CLF launched the Zero Waste Project to promote sustainable, nonpolluting materials management systems in the Commonwealth.

¹ Joint Comments of Conservation Law Foundation Massachusetts, Woods Hole Research Center, Environmental League of Massachusetts, Toxics Action Center, Partnership for Policy Integrity, Massachusetts Sierra Club, RESTORE: The North Woods, and W.E.S.T. (June 30, 2016) (“2016 Comments”).

Biomass Provisions

Biomass is part of the energy mix in New England, and with proper pollution control, sustainable fuel sourcing, and other necessary controls for lifecycle greenhouse gas emissions, can be part of the solution in reducing fossil fuel dependency, especially in rural areas. Without adequate and enforceable oversight of parameters like pollution control and fuel sourcing, however, the statutory criteria for Massachusetts Alternative Portfolio Standard subsidies for alternative thermal energy sources like biomass cannot be met. As discussed below and in prior comments, CLF continues to have strong concerns about the Draft Regulations' failure to meet the requirements of the enabling statute for biomass in the renewable thermal APS, as well as other laws and policies of the Commonwealth.

Sustainability Standards

The enabling statute for these regulations explicitly conditions the inclusion of thermal biomass in the APS on sustainable sourcing practices for the feedstock. *See* G.L. Ch. 25A, § 11F½(a) (“[P]rovided, however, that facilities using biomass fuel shall . . . use . . . fuel that is produced by means of sustainable forestry practices”). Some form of enforceable standard for fuel sustainability is required by the plain meaning of the statute, yet the draft regulations fail to require any mechanism for tracking the source. Further, the definition of sustainable sourcing in the Guideline document is too vague to be enforceable or even to provide much guidance to prospective APS biomass facilities, and the standards for an approved feedstock suppliers list are similarly vague and unenforceable. *See* Guideline on Biomass, Biogas, and Biofuels for Eligible Renewable Thermal Generation Units at 2 (“Guideline on Biomass”). At a minimum, the Department should adopt the existing sustainability standards for biomass feedstock under the Renewable Portfolio Standard, 225 C.M.R. 14.00.

Greenhouse Gas Emissions

It is incontrovertible that smokestack emissions of greenhouse gases from wood combustion are equivalent to or higher than those from fossil fuel combustion.² Any claim to greenhouse gas (“GHG”) emission reductions from energy produced by burning biomass over those from a fossil fuel source depends entirely on a life cycle analysis that nets smokestack emissions and feedstock production emissions against forest regrowth and predicted decomposition.

² *See* Walker, T., et al., Manomet Center for Conservation Sciences, Biomass Sustainability and Carbon Policy Study, 95 (2010) (“per unit of useable energy biomass typically releases more CO₂ than natural gas, oil or coal.”); Smith, P., et al., Climate Change 2014: Mitigation of Climate Change, IPCC Working Group III Contribution to the IPCC Fifth Assessment Report, 11.13.4 at 877, (“The combustion of biomass generates gross GHG emissions roughly equivalent to the combustion of fossil fuels.”), *available at* https://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc_wg3_ar5_chapter11.pdf.

The updated draft regulations attempt to calculate greenhouse gas emissions to implement the “low emissions” requirement of the statute, but still fail to accurately account for the emissions of qualifying facilities in even a rough manner. In what appears to be an attempt to simplify the calculations, the draft regulations and calculation workbook treat all eligible biomass fuels the same, providing a single calculation of GHG intensity based on a calculation lifecycle emissions of green wood chips. *See* Draft 225 C.M.R. 16.05(4)(i); Guideline on Reduction of Greenhouse Gases for Eligible Renewable Thermal Generation Units Using Eligible Woody Biomass (“GHG Workbook”). However, other eligible fuels like dried wood chips and pellets require more energy-intensive processing than green wood chips. Further, the guideline document exempts generators purchasing fuel from DOER-approved fuel suppliers from making even this inaccurate calculation (while the Department’s standard for approving fuel suppliers makes the same basic error as the calculation workbook in its uniform treatment of feedstocks, and does not require verification of the sources of the fuel). *See* Guideline on Biomass at 2. Finally, the time period for assessing the net emissions of biomass compared to a fossil fuel generator is proposed in the updated draft regulations to be thirty years, in contrast to the twenty year timeframe used in the Renewable Portfolio Standard. *See* GHG Workbook; 225 C.M.R. 14.05(8)(d)(2).

If the biomass regulations are to sufficiently implement the enabling statutory requirements, they must account for the different lifecycle emissions profiles of different biomass feedstocks and include a more credible net lifecycle timeframe, like that used for biomass in the Renewable Portfolio Standard. It would be counterproductive for the Department to incentivize high greenhouse gas emissions from bioenergy without corresponding lifecycle carbon offsets while the Department of Environmental Protection is endeavoring to implement the declining GHG requirements of the Global Warming Solutions Act.

Unit Efficiency

The enabling statute specifically requires eligible units to “use efficient energy conversion technologies,” but guidelines accompanying the draft regulations require only forty percent net efficiency from an eligible facility. *See* Guideline on Metering and Calculations – Part 2 (Metering for Intermediate and Large Generation Units) at 13. Combined heat and power bioenergy systems should typically achieve between sixty and eighty percent efficiency.³ This requirement should be increased at a minimum to the fifty to sixty percent efficiency phase-in for full RPS credits for bioenergy facilities. 225 C.M.R. 14.05(8)(c)(3).

³ U.S. EPA Combined Heat and Power Partnership, Biomass Combined Heat and Power Catalog of Technologies, at 1 (Sept. 2007).

Air Pollution

The enabling statute requires that standards for APS-eligible generators be “protective of public health”. G.L. Ch. 25A, § 11F½(b). Unlike greenhouse gas emissions from bioenergy combustion, which have predominantly non-localized and cumulative impacts that may be offset with stringent sourcing standards, conventional and toxic air pollutant emissions from bioenergy combustion can have large and harmful localized impacts, which may raise environmental justice concerns. The draft regulations specify a maximum moisture content for wood feedstocks, but do not provide any means of enforcement for this requirement. *See* Draft 225 C.M.R.

16.05(4)(g)(1)(ii). The amount of harmful air pollution that can be emitted increases with moisture content of wood, as the Guideline accompanying the Draft Regulations acknowledges. *See* Guideline on Biomass at 10-11. As proposed in our June 30, 2016 comments on the prior draft of these regulatory changes, the Department should adopt the SAPHIRE standard already in use in Massachusetts for pollutant emissions under these regulations.⁴

Waste-to-Energy Provisions

CLF has strong concerns about the draft regulations’ inclusion of the incineration of municipal solid waste in the renewable thermal APS, as it is in direct contradiction to other laws and policies of the Commonwealth, generates significant GHGs, is unsustainable, and is inefficient and dangerous to public health. Incineration of municipal solid waste (MSW) (often referred as “Waste-to-Energy” by the incinerator industry), is the most expensive and polluting way to manage waste or to make energy.⁵

Municipal Solid Waste

MSW typically contains a wide variety of discarded materials, including food scraps, yard waste, paper and paperboard products like cardboard, plastics, metal, rubber, leather, textiles, wood, glass, construction and demolition debris (C&D) and other miscellaneous materials. Hazardous chemicals are found throughout MSW, resulting in dangerous toxic emissions from incinerators as well as landfills.⁶ Not only does incineration of MSW emit contaminants, it also releases GHGs, destroys all of the materials in MSW so they cannot be reused or recycled, and produces a toxic ash weighing about one fifth of the burned MSW that must then be landfilled.⁷

⁴ 2016 Comments at 7-8.

⁵ *Assessment of Materials Management Options for the Massachusetts Solid Waste Master Plan Review*, submitted to MassDEP by Tellus Institute, 2-4 (2008) (“Tellus Institute”).

⁶ MassDEP, *Solid Waste Master Plan 2010-2020: A Pathway to Zero Waste*, 5 & 14 (2013) (“SWMP 2010-2020”).

⁷ *Id.*

Green House Gas Emissions

MSW incinerators release 3.2 times more nitrogen oxides than coal power plants, 3.2 times more nitrogen oxides than coal, 2.5 times as much carbon dioxide than coal, twice as much carbon monoxide and 20% more sulfur dioxide than coal.⁸ In fact, the Covanta Pittsfield MSW incinerator (which is anticipated to receive subsidies if the proposed changes to these regulations are adopted) releases more nitrogen oxide than any other stationary source in Berkshire County, an area almost as large as the State of Rhode Island.⁹ Allowing any MSW incinerator to be APS eligible should not even be considered given EEA's commitment to enforce the GWSA.

Sustainability Standards

In a report commissioned by MassDEP, the Tellus Institute found that waste-to-energy incinerators are not a renewable energy source.¹⁰ Incineration depends on a steady stream of natural resources whose value is not captured unless they are recycled, reused, and reduced. About 25% of MSW is paper or cardboard.¹¹ Burning paper and cardboard, derived from forests that are being rapidly depleted, is not sustainable. Likewise, burning construction and demolition waste (about fourteen percent of MSW) is not sustainable, and in fact is specifically prohibited from inclusion as an APS-eligible materials under G.L. c.25A, Section 11F ½. Plastic (about fourteen percent of MSW) should also be excluded from APS-eligible sources because it is derived from oil, another exclusion under G.L. c.25A Section 11F ½. Because it releases bound carbon in materials like plastics, thermal conversion of certain materials is also problematic from a climate change perspective regardless of the energy recovery levels.¹²

Unit Efficiency

Incinerators are a very inefficient method of generating energy. Studies done for the U.S. Energy Information Administration in 2010 and 2013 show that trash incinerators are, by far, the most expensive way to make energy, despite the fact that they get paid to accept their fuel.¹³ They are nine times more expensive to build than a conventional natural gas power plant and 30

⁸ Ewall, Mike, Energy Justice Network, *Trash Incineration* ("Waste-to-Energy"), <http://www.energyjustice.net/files/incineration/trashincineration.pdf>.

⁹ Calculations derived from National Emissions Inventory, NEI 2014 data, <https://www.epa.gov/air-emissions-inventories/national-emissions-inventory-nei>. Calculations performed by Mike Ewall, Esq. Executive Director of Environmental Justice Network, August 2017.

¹⁰ Tellus Institute, 33.

¹¹ See SWMP 2010-2020 at 5.

¹² See Tellus Institute at 9.

¹³ Ewall, Mike, Energy Justice Network, *Trash Incineration* ("Waste-to-Energy"), <http://www.energyjustice.net/files/incineration/trashincineration.pdf>.

times more expensive to operate.¹⁴ They even cost about twice as much to build as solar and nearly four times as much as wind.¹⁵

Not only is burning MSW an inefficient source of energy when compared to renewable sources of energy, it is also incredibly inefficient when compared to the energy saved by other waste management systems:

From a life-cycle net energy perspective, waste diversion through recycling, provides the most benefit, saving an estimated 2,250 kWh per ton. Of the other waste management technologies, gasification and pyrolysis facilities have the most potential for energy production at about 660 kWh per ton, followed by modern waste to energy incinerators at 585 kWh per ton, and then anaerobic digestion, and landfilling.¹⁶

In other words, almost four times more energy is saved by recycling than is generated by MSW incineration.

Pollution and Public Health

Contaminants burned in incinerators do not disappear – they are either released into the air or into the ash incinerators produce. Contaminants include metals like arsenic, lead and mercury, halogens like chlorine that produce acid gases and ultratoxic dioxins and furans when burned, carbon, sulfur and nitrogen compounds. Any pollutants captured in air pollution controls are added to the ash, so the cleaner the air, the more polluted the ash. Studies have found that in communities around incinerators there are increases in pre-term babies and babies born with spina bifida or heart defects, there are increased cancers, especially larynx, lung, colorectal, liver and stomach cancers, leukemia, childhood cancers, soft-tissue sarcoma and non-Hodgkin's lymphoma.¹⁷

Conclusion

The enabling statutory language for inclusion of thermal biomass in the APS was a carefully crafted compromise that requires low emissions and sustainable sourcing of feedstocks in order to qualify a generator for subsidies under the program. Relevant-sounding but vague and unenforceable language on sustainability, non-specific and inaccurate greenhouse gas calculations, low unit efficiency requirements, and overbroad pollutant emissions limits do not

¹⁴ *Id.*

¹⁵ *Id.*

¹⁶ Tellus Institute at 3 (emphasis added).

¹⁷ Ewall, Mike, Energy Justice Network, *Trash Incineration* ("Waste-to-Energy"), <http://www.energyjustice.net/files/incineration/trashincineration.pdf>.



satisfy the plain language of the statute. If the Department is to legally implement the statute and award subsidies funded by the energy customers of the Commonwealth to generators burning biomass, it must strengthen these provisions.

MSW incineration should not be included in an APS that is meant to support energy sources that encourage GHG reduction, sustainability, energy efficiency and protect public health with subsidies. CLF respectfully requests that all language regarding "Thermal Waste-to-Energy Generation Units" be stricken from the regulations.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "Caitlin Peale Sloan", is shown on a light blue background.

Caitlin Peale Sloan
Staff Attorney
cpeale@clf.org

A handwritten signature in black ink, appearing to read "Kirstie L. Pecci", is shown on a light blue background.

Kirstie L. Pecci
Senior Fellow
kpecci@clf.org