COVANTA
Powering Today. Protecting Tomorrow.

Scott Henderson
Senior Director, Government Relations
Covanta
Tel 862-485-8649
Email Shenderson@covanta.com
Website www.covanta.com

June 7, 2019

John Wassam
Department of Energy Resources
100 Cambridge Street, Suite 1020
Boston, MA 02114

Re: Draft Regulations Amending 225 CMR 15--Renewable Energy Portfolio Standard – Class II

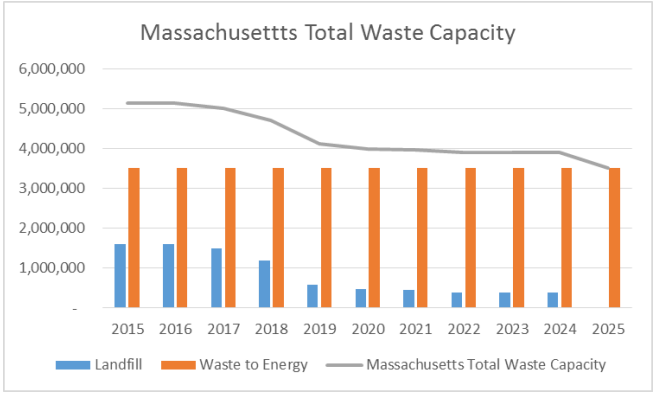
Dear Mr. Wassam:

Thank you for the opportunity to provide comments on the proposed changes to 225 CMR 15--Renewable Energy Portfolio Standard – Class II. We really appreciate the Department listening to stakeholders on this important regulatory change.

As you know, the solid waste system in the Commonwealth is under considerable pressure from recycling markets disappearing, due in large part to actions in recycling markets overseas, to ever shrinking disposal capacity in the Commonwealth and the broader northeast region.

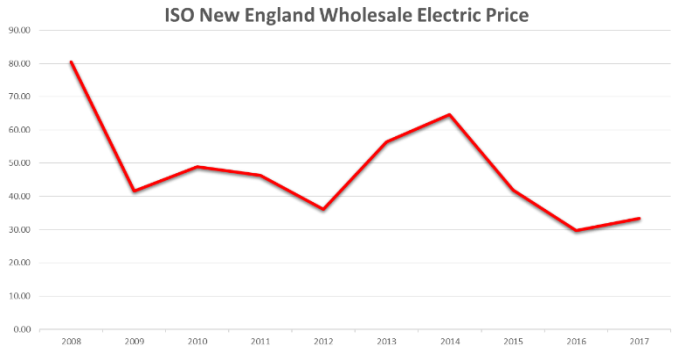
While Massachusetts has one of the highest recycling rates in the country, China's decision to limit the material that they are accepting is having a significant impact on cities and towns across the Commonwealth. The enforcement of these limitations by China bans a large number of recyclables, including various plastics and unsorted mixed papers, and sets a much tougher standard for contamination levels on separated recycled materials. This has resulted in recycled materials piling up because there is nowhere to economically send this material in-state, or in the northeast region.

In addition, at the end of last year with the closing of six landfills, Massachusetts has lost 1,377,000 tons of in-state disposal capacity. This loss has occurred in just the past three years. Looking ahead, more landfills closures are expected and by 2024 there will be almost no landfill capacity for municipal solid waste left in Massachusetts. The chart below shows the ever reducing in-state disposal capacity.



Waste-to-energy (WTE) facilities in Massachusetts are the backbone of the disposal options handling approximately 70% of the in-state disposal capacity. With the landfill capacity diminishing, WTE facilities are become even more crucial. Unlike landfills, WTE facilities do not fill up and close, however waste-to energy facilities have also faced the challenge of the collapse of the wholesale electricity market. Cheap natural gas has impacted all renewables, including waste-to-energy. Some of these facilities are likely to close because of this economic challenge that has been mounting in recent years. The loss of an existing WTE facility will have a number of negative effects, including dramatically increasing waste disposal costs to local governments and businesses, an increase in emissions from the waste sector, and a reduction of in-state renewable energy generation.

This chart shows the collapse of the wholesale price of electricity, because of low natural gas prices, which has negatively affected all renewables, including Waste-to-Energy facilities in Massachusetts and around New England.



Given the state of the waste and energy sectors, we support DOER amending the current Waste Energy tier in the Renewable Portfolio Standard to increase the percentage requirement and to increase the Alternative Compliance Payment (ACP). We believe the DOER should remove the sunset provision and instead occasionally review the program to ensure it is meeting the Commonwealth's needs.

Currently, the seven Waste-to-Energy (WTE) facilities in Massachusetts process 3,250,000 million tons of waste per year, producing enough renewable energy to power 212,000 homes. WTE facilities employ 489 people directly and support 1,441 jobs in the Commonwealth for a total economic output of $591,600,000 a year, while reducing greenhouse gas emissions by more than 2.2 million tons of CO_2 equivalent.

Like all combustion processes (e.g. cars, trucks, fossil-fuel power plants, landfill gas to energy) and nearly all waste management processes (e.g. landfilling, composting, anaerobic digestion, recycling), WTE facilities have air emissions. To minimize emissions, WTE facilities employ sophisticated air pollution control equipment. Emissions are monitored both continuously and with periodic testing, in compliance with MassDEP requirements.

A few individuals have claimed that WTE facility emissions are "worse than coal." However, the reality is that WTE facilities are not only cleaner than coal but represent an important tool in reducing greenhouse gas (GHG) and other emissions from landfills, serving as an important source of carbon mitigation in the process.

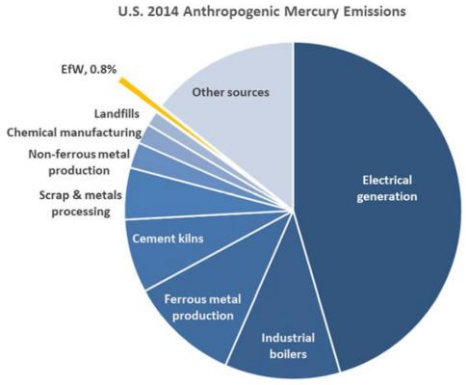
Recognition of WTE as a source of GHG mitigation and inclusion of WTE as an eligible source of carbon offsets, follows the long-established recognition of the Intergovernmental Panel on Climate Change (IPCC)[1], the Clean Development Mechanism (CDM) of the Kyoto Protocol, the California Department of Resources Recycling and Recovery[2] and the European Union[3]. The World Economic Forum has

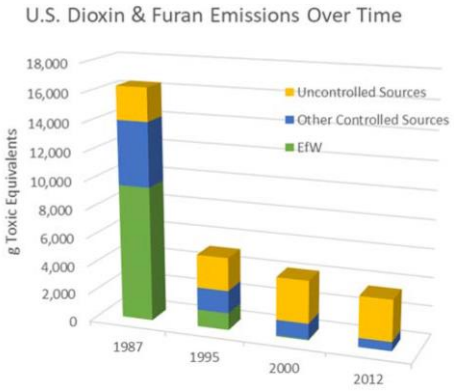
identified WTE as one of 8 technologies likely to make a significant contribution for a future low carbon global energy future.[4] In stark contrast to WTE, coal generation alone accounted for 23.4 percent of our nation's total CO2 emissions in 2016.[5]

In fact, a prominent peer reviewed study written by U.S. EPA scientists, entitled "Is It Better to Burn or Bury?", found GHG emissions from WTE to be significantly less than landfills, concluding "if the goal is greenhouse gas reduction, then WTE should be considered as an option under U.S. renewable energy policies."[6]

WTE outperforms coal on other emissions as well based on published data in peer-reviewed journals and regulatory agency documents. In the paper "Is It Better to Burn or Bury?", the EPA scientists found WTE facilities to be lower on average than those for coal-fired facilities for SO2, NOx, and PM, even before the benefits of avoided landfill emissions were considered. [7]

With regard to hazardous air pollutants, mercury emissions from U.S. WTE facilities are a fraction of those from coal plants. Over the period from 1990 to 2005, municipal waste combustors, as WTE facilities are called by the U.S. EPA, reduced their mercury emissions by 99 percent.[8] The most recent published data reveals that WTE facilities represented only 0.8 percent of the total 2014 U.S. mercury emissions.[9]





Historically, municipal waste combustors were a leading source of dioxin emissions. However, advancements in boiler design, operations, and air pollution control equipment have drastically reduced the footprint of the industry. In fact, according to recent peer-reviewed research by Columbia University scientists, the total dioxin emissions of all U.S. WTE plants in 2012 represented just 0.54 percent of total controlled combustion sources and less than one-tenth of one percent (0.09%) of total controlled and open burning sources of dioxin.[10]

In closing, Covanta supports DOER's proposed changes to 225 CMR 15--Renewable Energy Portfolio Standard – Class II, and strongly recommends eliminating the sunset provision in a) 15.07(2) that requires the percentage requirement to revert to 3.5% in 2026; and b) 15.08(4)(a)(2) that reverts the ACP to $11.50 per MWh beginning in 2026. Instead, DOER in consultation with MassDEP should conduct periodic reviews of the percentage and ACP requirements and make changes based on market conditions and policy objectives, if needed, at that point in time. Thank you again for allowing stakeholders to participate fully and provide comments on the proposed rule changes.

Sincerely,

Scott Henderson
Senior Director, Government Relations

[1] WTE identified as a "key mitigation measure" in IPCC, "Climate Change 2007: Synthesis Report. Contribution of Work Groups I, II, and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change" [Core Writing Team, Pachauri, R.K and Reisinger, A. (eds.)]. IPCC, Geneva, Switzerland, 104 pp. Available at: http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_synthesis_report.htm

[2] CalRecycle. 2012. *CalRecycle Review of Waste-to-Energy and Avoided Landfill Methane Emissions*. Available at: http://www.calrecycle.ca.gov/Actions/PublicNoticeDetail.aspx?id=735&aiid=689

[3] Clean Development Mechanism Executive Board: "Approved baseline and monitoring methodology AM0025: Avoided emissions from organic waste through alternative waste treatment processes." Available at: http://www.cdm.unfcc.int/methodologies/DB/3STKBX3UY84WXOQWIO9W7J1B40FMD

[4] World Economic Forum. *Green Investing: Towards a Clean Energy Infrastructure.* January 2009. Available at: http://www.weforum.org/pdf/climate/Green.pdf

[5] U.S. EPA (2018) *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990 – 2016*, EPA 430-R-18-003. Available at: https://www.epa.gov/sites/production/files/2018-01/documents/2018_complete_report.pdf

[6] Kaplan, P.O, J. DeCarolis, and S. Thorneloe, 2009, Is it better to burn or bury waste for clean electricity generation? *Environ. Sci. Technology* 43 (6) pp1711-1717.
Available at: http://pubs.acs.org/doi/abs/10.1021/es802395e

[7] Kaplan, P.O, J. DeCarolis, and S. Thorneloe, 2009, Is it better to burn or bury waste for clean electricity generation? *Environ. Sci. Technology* 43 (6) pp1711-1717.
Available at: http://pubs.acs.org/doi/abs/10.1021/es802395e

[8] U.S. EPA (2007) Letter from Walt Stevenson, OAQPS to Large MWC Docket, "Emissions from Large and Small MWC Units at MACT Compliance. http://energyrecoverycouncil.org/wp-content/uploads/2016/03/ERC-070810_Stevenson_MWC_memo.pdf

[9] Bourtsalas, A.C., N.J. Themelis (2019) Major sources of mercury emissions to the atmosphere: The U.S. case, *Waste Management*, **85**, 90-94. https://doi.org/10.1016/j.wasman.2018.12.008

[10] Dwyer, H., Themelis, N.J. (2015) Inventory of U.S. 2012 dioxin emissions to atmosphere. *Waste Management*, **46**, 242-246. http://dx.doi.org/10.1016/j.wasman.2015.08.009