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Energy Policy Review Commission Comments

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Covanta Energy Corporation ("Covanta") is pleased to offer comments on the Energy Review Policy Commission report on renewable energy in Massachusetts. Covanta is a national leader in developing, owning and operating facilities that convert municipal solid waste ("MSW") into renewable energy (energy-from-waste or "EfW" facilities). EfW facilities provide important waste management services to municipalities seeking to avoid or minimize use of landfills, while using MSW as a fuel source for generating renewable energy.

Internationally, EfW has been recognized as a technology that provides baseload, renewable power while also reducing greenhouse gases. It was disappointing that the Commission missed an opportunity to review this technology, especially in light of the recently released report from the Intergovernmental Panel on Climate Change. As that report notes, there have been some considerable changes to the scientific understanding of methane that have a fairly sizable impact on the GHG benefits of EfW, as well as other technologies that avoid landfilling (recycling, anaerobic digestion, composting). Overall, the climate impact of methane is much larger than previously reported. The latest data on methane's contribution to radioactive forcing, a measure of the uptake of energy, and hence global warming of the earth's climate system, is over *75% higher* than previously reported. Methane now represents over 40% of the total net drivers of climate change.

There are six EfW plants in the Commonwealth, four of which are owned by Covanta Energy. The Covanta plants alone produce enough electricity to power all the homes in Worcester. The US EPA recognizes the value of EfW in its waste hierarchy, clearly placing EfW above landfilling. Unfortunately, the state's energy policy has not fully recognized the benefits of EfW, and relegates EfW to a special Class 2 in the RPS, whereby half the REC revenue earned is sent back to the state to fund recycling programs. Landfill gas capture systems are in Class 1 in the RPS, with no requirement to share revenues, meaning the state is incentivizing landfilling over energy recovery. Further exacerbating this backwards policy, the commonwealth has a moratorium on new EfW, but no such moratorium on new or expanded landfills.

In terms of capacity, EfW has higher capacity factors than other renewables, and even a higher capacity factor than coal. EfW is *baseload* renewable power, running 24 hours a day, 365 days a year.

U.S. EIA / EPA Capacity Factors	
WTE*	64.6%
Coal	63.8%
Natural Gas combined cycle	42.2%
Hydroelectric	39.8%
Other Renewables	33.9%

* Combined Heat & Power (CHP) Plants excluded
Sources:
U.S. EIA 2009 Electric Power Annual
U.S. EPA eGRID 2012 v1.0

EfW also offers tremendous GHG mitigation benefits. It is the only source of electricity that actually reduces GHG emissions. EfW has been acknowledged by scientist worldwide as a key GHG mitigation technology. This would include, in addition to the IPCC mentioned above, the US EPA, the UN Conference on Sustainable Development and the World Economic Forum. For every ton of waste processed in an EfW facility, on a national average, a ton of greenhouse gas is mitigated, primarily because EfW prevents the generation of methane that would otherwise have been generated when that trash is instead landfilled. Methane is a GHG 25 times as potent as carbon dioxide over 100 year time frame, and 72 times as potent over 20 years. Landfills (again, in Class 1) are one of the largest sources of manmade methane emissions.

Regarding costs, while the EIA does not specify a levelized cost of electricity (LCOE) specifically for EfW, a research article by Chandel, Kwok, Jackson & Pratson estimates the LCOE for EfW at $94/MWh. The report can be found here: http://www.future-science.com/doi/abs/10.4155/cmt.12.11 EfW's LCOE is cost competitive with onshore wind and a significant saving compared to biomass, offshore wind and solar. Wind and solar should always be a part of the energy future, but their inherent intermittency create reliability challenges. Diversification of renewable sources is key to reliable power in the commonwealth, and given its competitive cost, EfW can play a larger role in Massachusetts' energy future.

EfW can also create highly skilled, permanent jobs. While the construction phase of any power source will create jobs (and EfW is no exception), the real measure involves how many permanent jobs can be created. A new 50 MW EfW facility would create at least 50 direct permanent jobs, and an estimated 60 indirect jobs as well. Further, because of the inner workings of an EfW facility, these are highly skilled, high paying permanent jobs, with an average salary of above $60,000 plus benefits. In Massachusetts alone, the total payroll at the four Covanta plants exceeds $33 million a year. This represents a true benefit to the commonwealth, as these are permanent jobs filled by local people.

As the Commission finalizes its report, it should recognize that the increased use of EfW can play a valuable role, providing cost effective, reliable baseload electricity, while diversifying its renewable sources and creating high paying permanent jobs. It can also help the commonwealth achieve its GHG reduction goals and provide sustainable waste management. As such, the Commission should work to correct the current energy policy in the commonwealth that encourages and subsidizes GHG emitting technologies (landfills) over GHG mitigating technologies (EfW). It can do so by recommending that one of the largest sources of manmade methane emissions (landfills) should not be a Class 1 energy source. Further, there should be a minimum floor price for EfW Class 2 RECs to encourage this internationally recognized GHG mitigating technology.

The Commission should also endeavor to eliminate the arbitrary “moratorium” on EfW and help the state move toward a more progressive waste management policy, specifically one which discourages GHG emitting technologies and encourages GHG mitigating technologies (EfW). At the very least, landfills should be required to share half of REC revenues received (like EfW) to help the state advance its recycling goals. With these changes, Massachusetts would stand to reap additional benefits from an expanded use of EfW and move closer toward meeting its GHG reduction goals.