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New Jersey Board of Public Utilities
44 South Clinton Avenue,
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To Whom It May Concern:

Thank you for the opportunity to comment on the 2019 Energy Master Plan. As New Jersey transitions to 100% clean energy by 2050 and lower its greenhouse gas impact, waste-to-energy (WTE), as part of an overall sustainable waste management strategy, should play a critical role to accomplish both goals.

Covanta, headquartered in Morristown, NJ, is a national leader in developing, owning and operating facilities that convert municipal solid waste ("MSW") into renewable energy in specially designed waste-to-energy ("WTE") facilities. We operate four facilities in New Jersey, in Union, Camden, Warren and Essex counties. Statewide, the five WTE facilities generate 170 MW of renewable electricity, recognized as Tier II in the state's RPS, are close to load centers and act as critical community infrastructure processing approximately 2 million tons of MSW annually.

On average, the U.S. EPA has determined that WTE facilities reduce GHG emissions by one ton of CO_2 equivalents (CO_2e) for every ton of MSW diverted from landfill and processed.[1] WTE facilities reduce GHG emissions, even after consideration of stack emissions from combustion, by:

1. Generating steam and/or electricity that would otherwise would likely be generated by fossil-fueled facilities;
2. Diverting solid waste from landfills where it would have emitted the potent greenhouse gas methane, even with consideration of landfill gas collection systems in place; and
3. Recovering metals for recycling, thereby saving the GHGs and energy associated with the production of products and materials from virgin inputs.

By reducing emissions that would have otherwise occurred at landfills, WTE is the only major source of electricity that actually reduces GHG emissions.

The GHG benefits of WTE relative to landfilling are well recognized by scientists and policymakers alike, including by CalRecycle, [2] CARB,[3] the Center for American Progress,[4] Third Way, [5] a 2016 report from the Berkeley Law Center for Law, Energy & the Environment,[6] U.S. EPA,[7] U.S. EPA scientists,[8] the Intergovernmental Panel on Climate Change ("IPCC"),[9] the World Economic Forum,[10] the European Union,[11,12] and other researchers. [13] WTE facilities were not covered under the EPA's new Clean Power Plan.[14] In fact, WTE facilities were considered zero

carbon power under the CPP's accounting structure and new WTE facilities were eligible to generate Emission Rate Credits (ERCs).[15]

Despite the benefits they confer, WTE facilities face long term financial risks. The wholesale electricity price in New Jersey has collapsed in the past ten years because of the low price of natural gas. While the steep decline in the wholesale electricity price is hurting all existing generation facilities, we believe the State should be increasingly concerned about the facilities that have a positive impact on the climate. Whereas the State's RPS could act as a hedge against falling wholesale prices, the program has been flooded with RECs from across the PJM Market. These excess RECs have collapsed the Class I and Class II REC prices in the state. This lost revenue falls particularly hard on WTE facilities which face significant ongoing operation and maintenance costs relative to other renewables.

The power provided by WTE facilities offers additional benefits as well. In contrast to many other renewable energy technologies, WTE facilities generate baseload renewable energy typically located next to load centers. As our electrical grid becomes increasingly dependent on intermittent renewable power sources, baseload sources like WTE will help aid in grid stability and resiliency, fuel diversity and reliability, and will reduce long distance transmission burden and associated costs. WTE facilities typically operate with availabilities above 90%.

The five WTE facilities in NJ provide critical local sustainable waste management infrastructure. In addition to providing day to day service, these facilities can help make the communities more resilient as well. In fact, when weather and other natural events disrupt the grid, WTE facilities often remain operational, managing both routine waste and the resulting debris from those events, regardless of whether the grid is able to receive the power it can generate. In addition, there is a further potential to integrate WTE into community microgrids, currently under study in Camden. Reliable power generated by local WTE facilities could help communities ensure an energy supply to wastewater treatment plants, emergency services, prisons, and other critical community services.

Waste-to-energy is already part of New Jersey's clean energy economy and it should play a larger role to ensure reliability and affordability for all customers, reduce the state's carbon footprint, and advance new technologies for all residents. However, energy and solid waste policy is need to ensure these facilities remain a vital part of New Jersey's clean energy future.

Sincerely,

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[1] See U.S. EPA Office of Solid Waste, *Air Emissions from MSW Combustion Facilities*, https://archive.epa.gov/epawaste/nonhaz/municipal/web/html/airem.html and Center for American Progress (2013) *Energy from Waste Can Help Curb Greenhouse Gas Emissions* https://cdn.americanprogress.org/wp-content/uploads/2013/04/EnergyFromWaste-PDF1.pdf

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

[3] See Table 5 of California Air Resources Board (2014) *Proposed First Update to the Climate Change Scoping Plan: Building on the Framework, Appendix C – Focus Group Working Papers, Municipal Solid Waste Thermal Technologies*

[4] Center for American Progress (2013) Energy from Waste Can Help Curb Greenhouse Gas Emissions http://www.americanprogress.org/wp-content/uploads/2013/04/EnergyFromWaste-PDF1.pdf

[5] Third Way (2014) *Power Book*: *Energy from Waste*, http://powerbook.thirdway.org/filter-web-app/energy-from-waste, accessed November 26, 2014.

[6] Berkeley Law Center for Law, Energy & the Environment (2016) *Wasting Opportunities: How to Secure Environmental & Clean Energy Benefits from Municipal Solid Waste Energy Recovery*. https://www.law.berkeley.edu/research/clee/research/climate/waste-to-energy/

[7] U.S. EPA Office of Solid Waste, Energy Recovery from the Combustion of Municipal Solid Waste (MSW), https://www.epa.gov/smm/energy-recovery-combustion-municipal-solid-waste-msw#EnergyRecovery, accessed January 20, 2017.

[8] 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. http://pubs.acs.org/doi/abs/10.1021/es802395e

[9] EfW 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. http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_synthesis_report.htm

[10] EfW identified as a key technology for a future low carbon energy system in World Economic Forum. *Green Investing: Towards a Clean Energy Infrastructure.* January 2009. Available at: http://www.weforum.org/pdf/climate/Green.pdf

[11] EU policies promoting EfW as part of an integrated waste management strategy have been an overwhelming success, reducing GHG emissions over 72 million metric tonnes per year, see European Environment Agency, *Greenhouse gas emission trends and projections in Europe 2009: Tracking progress towards Kyoto targets http://www.eea.europa.eu/publications/eea_report_2009_9*

[12] European Environmental Agency (2008) Better management of municipal waste will reduce greenhouse gas emissions. Available at: http://www.eea.europa.eu/publications/briefing_2008_1/EN_Briefing_01-2008.pdf

[13] The Joint Institute for Strategic Energy Analysis (JISEA) is operated on behalf of the U.S. Department of Energy's National Renewable Energy Laboratory (NREL), the University of Colorado-Boulder, the Colorado School of Mines, the Colorado State University, the Massachusetts Institute of Technology, and Stanford University.

[14] 40 CFR 60.5845

[15] 40 CFR 60.5800