

November 23, 2009

Mr. Gary Collord
Energy Section
CA Air Resources Board
1001 I Street
Sacramento, CA 95812

Dear Mr. Collord:

Thank you for the opportunity to comment on the development of a comprehensive Renewable Electricity Standard (“RES”) for California.

We would encourage the California Air Resources Board to broaden the definition of the “portfolio standards” to include technologies like Energy-from-Waste (“EfW”). EfW is an important technology that safely manages post-recycled municipal solid waste and generates clean renewable energy. Currently, the California Public Utilities Code Section 399.12 (B)(3) excludes the combustion of municipal solid waste as an eligible renewable resource. Covanta’s facility in California is included in the definition of a renewable resource because it is located in Stanislaus County and was operating before 1996.

1. Background on Covanta Energy Corporation in California

Covanta is an internationally recognized owner and operator of energy from waste (EfW) facilities, which convert municipal solid waste (MSW) into steam and/or electrical energy. Our company owns and/or operates 42 EfW facilities in the U.S. and owns and/or operates other renewable energy sources, including biomass to energy (BtE) and landfill gas to energy (“LFGTE”) operations.

In California, Covanta's operations include an EfW facility in Stanislaus County, six renewable Biomass to Energy plants located in Burney, Westwood, near Jamestown, Oroville, Mendota, and Delano, and four Landfill Gas to Energy facilities in Stockton, Salinas, Oxnard and Chula Vista. Across all of our California facilities, Covanta employs 210 people and produces approximately 1.3 million MWH of clean, renewable energy annually.

2. EfW facility in Stanislaus County: The Linchpin of an Integrated Solid Waste and Recycling Program

Covanta's EfW facility was permitted as a solid waste disposal facility in 1986 and has been in commercial operation since early 1989. The primary purpose of this facility is the disposal of post-recycled municipal solid waste. It processes more than 800 tons of solid waste per day. It also provides several other environmental and long-term benefits including the generation of electrical power and the recovery of ferrous metal.

Annually, the facility processes ~250,000 tons of solid waste into enough energy to generate approximately 130,000 megawatt hours that are sold to Pacific Gas and Electric Company ("PG&E"). In turn, PG&E uses that clean power to meet its renewable energy targets mandated by State law.

There is a positive relationship between our EfW facility and our contracting communities' ability to attain a 61% solid waste recycling/diversion rate pursuant to the CIWMB's AB 939 mandates. Covanta, Stanislaus County, and the City of Modesto share in the sales revenues from the facility's renewable electricity generation and recycling of metals which in turn provides the revenue necessary to fund a robust recycling program. Communities that employ integrated waste management systems usually have higher recycling rates and the use of EfW in that system plays a key role.

3. MSW as a Renewable Resource

Energy-from-Waste clearly meets the two basic criteria for renewable energy resources: its fuel source is both sustainable and indigenous.

Increasingly, waste is being viewed as a resource and an opportunity for reducing GHG emissions. The former US EPA Office of Solid Waste is now the Office of Resource Conservation and Recovery, reflecting a new emphasis on sustainability and recovering value from former waste materials. Both the European Union (“EU”) and the U.S. EPA have developed waste hierarchies which give preference to recycling and energy recovery over waste disposal in landfills (Figure 1).^{1, 2} A recent paper coauthored by U.S. EPA and North Carolina State researchers demonstrated the value of EfW over landfilling from both a GHG and energy perspective.³

4. Jurisdiction that recognize MSW as a Renewable Resource

There is significant precedent for the inclusion of MSW as a renewable resource. The Energy Policy Act of 2005 (Section 203) recognizes municipal solid waste as a renewable energy. 24 states, the District of Columbia, and the U.S. Department of Energy consider EfW to be a renewable source of Energy.^{4, 5} The World Economic Forum at their recent meeting in Davos, Switzerland, identifies EfW as one of eight renewable technologies likely to make a meaningful contribution to a future low-

¹ U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. *Opportunities to Reduce Greenhouse Gas Emissions through Materials and Land Management Practices*. Washington, DC. September 2009.

² European Union, EU (2008) Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives. *Official Journal of the European Union*. L312, 51, 3-30

³ 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

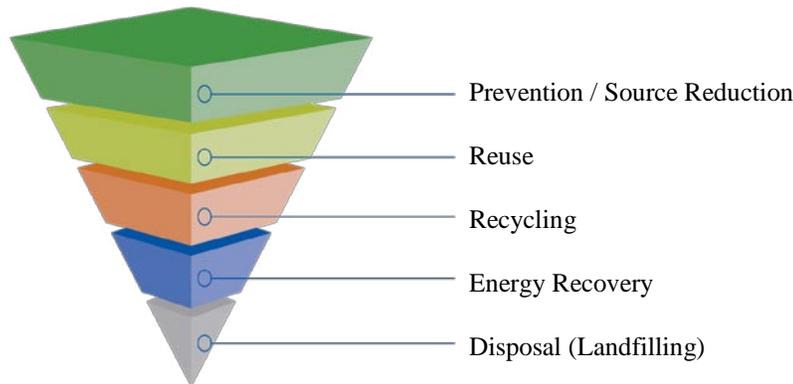
⁴ Integrated Waste Services Association. Fact Sheet: Waste-to-Energy and State Renewable Statutes. <http://www.wte.org/docs/FactSheetState.pdf>;

⁵ Letter from David K. Garman, Assistant Secretary Energy Efficiency and Renewable Energy, U.S. Department of Energy to Maria Zanes, President, Integrated Waste Services Association. April 23, 2003. <http://www.wte.org/docs/EEREletter.pdf>.

carbon energy system.⁶ The benefits of EfW as a net GHG reducing source of renewable energy are widely recognized by the Nobel prize winning Intergovernmental Panel on Climate Change (“IPCC”), the United Nations Framework Convention on Climate Change (“UNFCCC”), the European Union and the European Environmental Agency, the Global Roundtable on Climate Change (GROCC) convened by Columbia University’s Earth Institute, and the U.S. Conference of Mayors.

Most recently, Senator Bingaman’s and Congressman’s Waxman recently introduced legislation recognizes the renewable attributes of MSW in the Renewable Energy Standard being proposed in Congress.

Figure 1. US EPA and European Union Waste Hierarchy



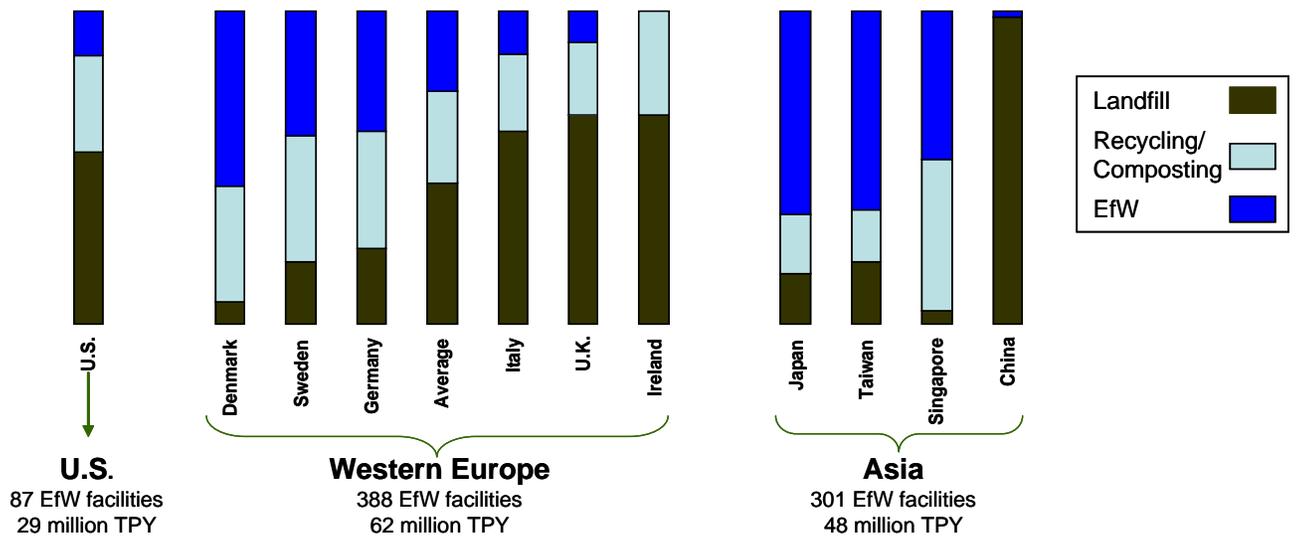
Unfortunately, MSW management in the United States is currently heavily weighted to the bottom of this hierarchy. Currently, over 260 million tons of MSW are landfilled annually, over 64% of the waste we generate. Nationally, we recycle and compost only 29% and recover energy from only about 7% of our waste.⁷ Even with a 53 percent statewide diversion rate, California still landfills over 43 million tons of MSW each year.

⁶ World Economic Forum. *Green Investing: Towards a Clean Energy Infrastructure*. January 2009. <http://www.weforum.org/pdf/climate/Green.pdf>

⁷ Arsova, L., R. van Haaren, N. Goldstein, S. Kaufman, N. Themelis. “The State of Garbage in America: 16th Nationwide Survey of MSW Management in the U.S.” *BioCycle*. December 2008. **47** (4), 26-43

This contrasts sharply to the experience with EfW in other industrialized nations with more aggressive recycling and waste management policies. In Europe, recycling and EfW are viewed as complimentary as can be seen from the following figure. The countries with the highest national recycling rates also exhibit the greatest use of EfW.

Figure 2. International Use of Energy from Waste



5. Energy-from-Waste Generates Much Needed Baseload Power and is Land Dense

As California develops an RES program, consideration must be given that many renewables like wind and solar provide intermittent power. EfW is baseload and EfW plants supply power 7-days-a-week, 24-hours a day and can operate under severe conditions. EfW facilities average greater than 90% availability of installed capacity. The facilities generally operate in or near an urban area, with easy transmission to the utility customer. Energy-from-Waste power is sold as “baseload” electricity to utilities that can rely upon its supply of electricity. There is a constant need for trash disposal, as well as a need for an equally constant, steady, and reliable energy generation.

Additionally, EfW facilities are generally located near population centers, so they do not need new transmissions investments. Some groups like the Nature Conservancy has positively recognized that EfW because it is a land dense renewable.

6. Energy-from-Waste is Clean and Reduces Greenhouse Gases

In addition to using a renewable fuel, the environmental attributes of EfW should be supported and encouraged by inclusion in a Renewable Energy Standard portfolio standard. EfW facilities meet some of the most stringent environmental standards in the world and employ the most advanced emissions control equipment available. Energy-from-Waste has long been recognized by the US Environmental Protection Agency as an important form of clean energy. Energy-from-Waste facilities achieved compliance in 2000 with new Clean Air Act pollution control standards for municipal waste combustors.

In addition, EfW achieves the reduction of greenhouse gas emission through three separate mechanisms: 1) by generating electrical power or steam, EfW avoids carbon dioxide (CO₂) emissions from fossil fuel based electrical generation; 2) the EfW combustion process effectively avoids all potential methane emissions from landfills thereby avoiding any potential release of methane in the future; and, 3) the recovery of ferrous and nonferrous metals from MSW by EfW is more energy efficient than the production from raw materials – thereby avoiding CO₂ from mining, processing and fossil fuel combustion.

7. Conclusions

For all of the reasons stated above, we believe that any Renewable Electricity Standard being considered must recognize EfW as an eligible generation source. Energy-from-Waste facilities recover valuable energy from trash after efforts to “reduce, reuse, and recycle” have been implemented by households and local government.

California has already made the policy decision that MSW is renewable because landfill gas is renewable. When any community sends its waste to a landfill, MSW is converted to methane, an anthropogenic or man-made greenhouse gas that is used to power an engine for generation of renewable electricity. Recent publications estimate the electrical production rate from a landfill to be about 50 kilowatt hours per ton of MSW while fugitive methane continues to be emitted. If that same community were to send its MSW to an EfW facility approximately 550 kilowatt hour per ton or 10 times the amount of electrical energy is generated and there is no methane emitted. There is some amount of CO₂ from combustion of plastics and other waste.

In a state with a strong emphasis on renewable energy and environmental awareness, CARB should be interested in maximizing renewable energy generation while minimizing emissions of greenhouse gases. Those two goals would be realized by granting EfW renewable status and treating it as equal to landfilling. The GHG emissions from EfW are far less than landfills and the amount of energy is far greater. EfW is also equipped with controlled combustion and air pollution control systems to assure continuous performance and compliance with stringent state performance standards. Landfills do not have the same type of air pollution controls.

From a policy perspective, it does not make sense to include landfill gas as a renewable standard and not include Energy-from-Waste. Even with all of CARB's regulations to improve methane capture at landfill, there is still methane that will not be captured. A Renewable Electricity Standard will only be successful if all renewable technologies are included. Including EfW with wind, solar, geothermal and other renewable resources respects regional differences, provides flexibility for utilities to comply with the RPS intent, and will help stabilize renewable energy prices. Exclusion of EfW will put those facilities, and the communities that own or rely upon those facilities for waste disposal, at a disadvantage if EfW is not treated the same as other renewable resources.

Again, we appreciate the opportunity to provide our comments. Covanta Energy is committed to providing clean, renewable energy and to continuing to be a contributor to California's economic vitality for years to come. Please contact me or our government relations advisors Jackson R. Gualco or Lisa Rodriguez at 916/441-1392.

Cordially,

A handwritten signature in black ink that reads "Ellie Booth". The signature is written in a cursive, flowing style.

ELLIE BOOTH

Director, State Government Affairs

cc: Honorable Mary Nichols
Mr. James Goldstene
Mr. David Mehl