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MODERN ENERGY-FROM-WASTE FACILITIES LEADING THE WAY TO A SUSTAINABLE RENEWABLE ENERGY FUTURE

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In recent years, Covanta Energy has successfully executed contracts with two Florida communities, Hillsborough and Lee County, to construct 50% processing capacity expansions to the existing 1200 TPD solid waste energy recovery facilities Covanta originally built and currently operates for each of these communities. Under new Service Agreements that commence following the completion of each expansion project, Covanta will continue to meet operating, maintenance and environmental performance standards established with Lee and Hillsborough Counties for these expanded facilities for another 10 and 20 years, respectively.

and annually prevent the generation of up to 1.1 million tons of greenhouse gases.

Modern Energy-from-Waste (EfW) facilities like the ones being expanded by Hillsborough and Lee County in Florida are excellent examples of a proven, large scale, modern technology that is environmentally sound, sustainable, and renewable. While it may take years for other technologies to emerge and be proven commercially viable, modern mass burn EfW technology can be applied immediately to help solve Florida's, our nation's and our world's fossil fuel dependency and mitigate climate change.



FIGURE 1
LEE COUNTY EFW FACILITY EXPANDED CAPACITY 1836
TPD EXPANSION COMPLETED OCTOBER 2007.
(PICTURE COURTESY OF LEE COUNTY GOVERNMENT)



FIGURE 2
HILLSBOROUGH COUNTY EFW FACILITY EXPANDED
CAPACITY 1800 TPD EXPANSION STATUS 1-9-09
COMPLETION SCHEDULED FOR 3RD QUARTER 2009.
(PICTURE COURTESY OF COVANTA ENERGY)

These expansions include new 600 TPD boiler/combustion units featuring Martin technology that increases each facility's annual processing capability by approximately 190,000 tons of solid waste per year and the installation of a second turbine generator set which increases each facility's current electrical generation capabilities by approximately 17 Megawatts. Once the expansions have been completed, together these facilities will be able to generate enough renewable energy every day to offset the equivalent use of approximately 3,600 barrels of oil

Currently, Florida's 11 EfW facilities generate enough clean continuous renewable electricity to power between 350,000 and 400,000 homes and businesses while safely and reliably managing approximately 14% of the State's non-recycled solid waste stream.¹ Building modern mass burn EfW facilities equipped with the most advanced combustion and emissions control systems available could increase the State's

¹ Reference FDEP Table 5A: Final Disposition of Municipal Solid Waste in Florida CY 2006

current renewable energy production by as much as 1700 megawatts.²

On a national perspective, the United States currently generates approximately 254,140 tons of MSW annually. Material Recovery/Recycling efforts handle 33.4% of these tons (84,970 tons/yr), EfW facilities manage 12.6% (31,970 tons/yr) and Landfilling and Other Disposal Methods account for the remaining 54% of the waste stream (137,200 ton/yr).³ If we assume a 2% annual growth rate in MSW generation of going forward, and also assume materials recovery/recycling growth outpaces this increase in generation, growing 4% annually, by 2030, recycling would be managing 52.3% of U.S. MSW generation as compared to 33.4% in 2007. Assuming the existing EfW facilities continue to operate the renewable energy potential from new EfW generation by 2030 could approach as much as 15,000 MW of capacity.

In 2008 the Florida Legislature passed into law HB 7135 which recognized the important role new EfW capacity will play in helping Florida achieve the goal set by executive order in July of 2007 by Governor Charlie Crist. Executive Order 07-127 called for Florida to have 20% of its base load electrical energy generating capacity come from renewable sources by 2020. Florida law now strongly supports the development of renewable energy, protection of the economic viability of Florida's existing renewable energy facilities and calls for: an increase in fuel diversity, a reduction in the dependency on traditional fossil fuel electric power generation, improvement in environmental conditions including the off setting and reduction of GHG generation, minimization of fuel cost volatility, calls for: an increase in fuel diversity, a reduction in the dependency on traditional fossil fuel electric power generation, improvement in environmental conditions including the off setting and reduction of GHG generation, minimization of fuel cost volatility, encouragement of investment within the State and minimization of the costs of power supply to electric utilities and their customers, all while revising the State's current recycling goal of 30% to include a requirement to reduce the amount of recyclable solid waste disposed of in waste management facilities, landfills or incineration facilities by a statewide average of at least 75%. Notably, under this new law, a ton of solid waste used in the production of renewable energy (like Florida's 11 EfW Facilities) counts toward fulfillment of this long term 75% recycling goal.

Most recently the Florida Public Service Commission re-enforced the vision set forth by the 2008 Florida Legislature and Executive Order # 07-127 by directing staff to proceed with the drafting of rules to support the 20% base load renewable energy generation by 2020 and by establishing

technology specific Standard Offer Contracts and a Renewable Energy Credit structure to promote a level playing field for independent energy/power developers and each Investor Owned Utility (FL PSC's defined "Energy Providers").

On a national basis, the new administration has made renewable energy a key focus of its plan to revitalize the economy. Efforts are underway to show how EfW can help the nation achieve energy independence and fuel diversity while providing immediate and long term economic stimulus.

This presentation by Joseph Treshler, Vice President Business Development of Covanta Energy will look into the forward-thinking policy and planning process undertaken by each County in the execution of their expansion and the strong partnership with Covanta that is common to both. It will also discuss the factors that are both driving and inhibiting the further development of new modern EfW capacity in both Florida and nationally.

² Total tons landfilled in Florida in 2006 22,687,200 TPY – (3,729,820 TPY Combusted X 0.25) = 21,754,745 TPY available (adjusted for ash residue from the State's 11 existing WTE facilities currently going to landfills). Using 21,754,745 TPY MSW available and 700 kwhr net/ton MSW for a new WTE facility yields 1738MW as the POTENTIAL NEW CAPACITY available from MSW currently being landfilled in Florida.

³ Reference USEPA "Municipal Solid Waste in the United States: 2007 Facts and Figures"