RPS Response Sheet

SOURCE	Company Name:		**Integrated Waste Services Association (1)**	**Integrated Waste Services Association (1)**
	Applicable Utility Service Area	(if any)	**State Wide (2)**	**State Wide (2)**
	Energy Resource:	(Individual Type)	**Municipal Solid Waste (3)**	**Municipal Solid Waste (3)**
	Energy Resource Type:	(Category)	**Biomass**	**Biomass**
	Resource Scale	(Unit or Aggregate)	**1500 TPD / 3000 TPD (4)**	**21,750,000 TPY AGGREGATE (5)**
	Unit Status	(Existing or Planning)	**POTENTIAL NEW CAPACITY (6)**	**POTENTIAL NEW CAPACITY (6)**
COMMERCIAL AVAILABILITY	Typical Unit Annual Capacity Rating	(MW)	**40 NET / 85 NET (4)**	**1614 NET AGGREGATE (7)**
	Earliest Commercial In-Service Date	(Year)	**2013 TO 2015**	**2013 TO 2015**
	Typical Construction & Permitting Time	(Years)	**5 TO 7 YEARS**	**5 TO 7 YEARS**
	Useful Life of Unit	(Years)	**50**	**50**
	Fuel Type		**MUNICIPAL SOLID WASTE**	**MUNICIPAL SOLID WASTE**
PERFORMANCE CHARACTERISTICS	Contribution to Summer Peak Demand	(MW)	**40 NET / 85 NET (4) (8)**	**1614 NET AGGREGATE (8)**
	Contribution to Winter Peak Demand	(MW)	**40 NET / 85 NET (4) (8)**	**1614 NET AGGREGATE(8)**
	Average Annual Heat Rate	(BTU/kWh)	**SEE NOTE (13)**	**SEE NOTE (13)**
	Equivalent Availability Factor	(%)	**SEE NOTE (13)**	**SEE NOTE (13)**
	Average Annual Generation	(MWH)	**316,000 NET / 670,000 NET (4)**	**12,725,000 NET AGGREGATE (6)**
	Resulting Capacity Factor	(%)	**SEE NOTE (13)**	**SEE NOTE (13)**

ENVIRONMENTAL CHARACTERISTICS	Emission Rates	Carbon Dioxide (CO_2)	(lb/kWh)	**(-4.0 lbs CO2/Kwh) (9)**	**(-50.9 billion lbs CO2) AGGREGATE (6) (9)**
		Sulfur Dioxide (SO_2)	(lb/kWh)	**(10) (11)**	**(10) (11)**
		Nitrogen Oxide (NO_X)	(lb/kWh)	**(10) (11)**	**(10) (11)**
		Mercury (Hg)	(lb/kWh)	**(10) (11)**	**(10) (11)**
		Water Usage	(gal/kwh)	**0.5 to 1.5 (12)**	**0.5 to 1.5 (12)**
ESTIMATED COST DATA		First Year of Commercial Operation	(Year)	**2013 TO 2015**	**2013 TO 2015**
	Installed Capital	Cost[(1)]	($/kw)	**SEE NOTE (13)**	**SEE NOTE (13)**
		Escalation Rate	(%)	**SEE NOTE (13)**	**SEE NOTE (13)**
	O & M - Fixed	Cost[(1)]	($/kw-year)	**SEE NOTE (13)**	**SEE NOTE (13)**
		Escalation Rate	(%)	**SEE NOTE (13)**	**SEE NOTE (13)**
	O & M - Variable	Cost[(1)]	($/kwh)	**SEE NOTE (13)**	**SEE NOTE (13)**
		Escalation Rate	(%)	**SEE NOTE (13)**	**SEE NOTE (13)**
	Fuel	Cost[(1)]	($/kwh)	**SEE NOTE (13)**	**SEE NOTE (13)**
		Escalation Rate	(%)	**SEE NOTE (13)**	**SEE NOTE (13)**
		Discount Rate	(%)	**SEE NOTE (13)**	**SEE NOTE (13)**
		Levelized Cost[(2)] - Life of Unit	(cents/kwh)	**SEE NOTE (13)**	**SEE NOTE (13)**
	FOOTNOTES / ADDITIONAL NOTES				

(1) The Renewable Resource information provided in this response for the Potential New Capacity available from Municipal Solid Waste currently being landfilled in Florida has been assembled by IWSA, the Integrated Waste Services Association, the public and private sector industry trade group that represents the Waste to Energy Industry in the United States. IWSA private sector member companies include Covanta Energy Corporation, Veolia ES Waste-to-Energy, Inc. and Wheelabrator Technologies, Inc. IWSA public sector members include the following local Florida governments: Broward County, FL - Office of Integrated Waste Management, City of Tampa, Dade-Miami County, FL - Dept of Solid Waste Management, Pinellas County Utilities - Dept of Solid Waste Operations and the Solid Waste Authority of Palm Beach County, FL.
(2) The information presented is based on the Municipal Solid Waste currently being landfilled in all Counties of the State. No attempt has been made to assign a Utility Service Area for the Potential New Capacity that is available.
(3) FDEP 2006 data - Table 5A Final Dispostion of Municipal Solid Waste in Florida – has been used as the basis of this analysis and data submittal.
(4) Data for two typical new Waste to Energy facilities is provided. The number to the left of the slash (/) is for a new 1500 ton per day facility. The number to the right of the slash (/) is for a NEW 3000 ton per day facility.
(5) Total tons landfilled 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).
(6) Data presented is for POTENTIAL NEW CAPACITY from new WTE facilities. It does not include the 517 MW of existing installed generating capacity IWSA reported to FLPSC on 7/22/08 or the additional 17 MW of new generating capacity scheduled to come on line in 2009 reported to FLPSC by Covanta Energy on 7/22/08 for the Hillsborough Facility Expansion Project.
(7) Using 21,754,745 TPY MSW available from Note (5) and 650 kwhr net/ton MSW for a new WTE facility yields 1614MW as the POTENTIAL NEW CAPACITY available from MSW currently being landfilled in Florida.
(8) WTE Facilities are operated as BASE LOAD generation facilities producing electricity at a constant generation rate 24/7/365 subject only to individual combustion unit maintenance outages.

(9) WTE Facilities are a net reducer of Green House Gases (GHG's). Generation of renewable electricity from MSW offset GHG's that would have been released by the combustion of other fossil fuels to generate this same electricity and the Methane that would be released as of the result of the MSW being disposed of in a landfill. Recovery and recycling of ferrous and non-ferrous metals by WTE Facilities also offset GHG's directly related to the mining and refining of virgin ores into usable metals.
(10) Florida's 11 WTE facilities are included in the group of large combustor facilities EPA has recognized nationally " to produce 2800 megawatts of electricity with less environmental impact than almost any other source of electricity." USEPA letter - Feb 14, 2003
(11) Environmental Performance for new WTE facilities will be, at minimum, comparable to the excellent performance currently being demonstrated nationally and reported annually to FDEP by Florida's 11 existing WTE facilities. This demonstrated performance has allowed EPA to "continue to rely on municipal solid waste as a clean, reliable renewable source of energy." USEPA letter - Feb 14, 2003
(12) A significant number of Florida's existing WTE facilities utilized Treated Effluent from their community's Water Water Treatment facilities for power/steam generation, process/cooling water needs. This significantly reduces the impact these facilites have on the community's potable water supply.
(13) WTE facilities are just one component of a community's Integrated Solid Waste Management System and hence the facility's scope, capital cost, operating & maintenance costs and the community revenue stream requirements, which include system tipping/disposal fees and the electrical revenues requirements for the renewable energy being generated, are unique to each community's system. IWSA members would be pleased to meet directly with PSC staff to discuss a logical approach to RPS related evaluation factors for new and existing WTE facilities in Florida.