

**RPS Data Form 1: Renewable Generating Technologies**

**Company Name:** City of Tampa, Florida  
 (Existing McKay Bay Waste to Energy Facility)

**Applicable Utility Service Area:** Tampa Electric Company

**Renewable Technologies**

<b>Solar</b>	Photovoltaic (PV)
	Photoelectrochemical (H2)
	Thermal Electric Plant
<b>Wind</b>	Inland
	Coastal
	Offshore
<b>Hydroelectric</b>	Dam (Incremental)
	Diversion (Run of the River)
	Pumped Storage
<b>Geothermal</b>	Dry Steam
	Flash
	Binary
<b>Ocean Energy</b>	Wave Action
	Tidal Change
	Thermal Gradients (OTEC)
	Ocean Currents
<b>Biomass - Direct Combustion</b>	Plant Matter
	Animal Waste
	Vegetable Oil
<b>Biomass - Conversion to Liquid</b>	Biodiesel / Renewable Diesel
	Ethanol - Cellulosic
	Ethanol - Non-Cellulosic
	Pyrolysis
<b>Biomass - Conversion to Gas</b>	Anaerobic Digester
	Gasification
	Renewable Natural Gas
<b>Landfill Gas</b>	Methane Combustion
<b>Municipal Solid Waste                  Existing Mass Burn Facility</b>	Biogenic Non-Biogenic <b>Combination of both biogenic and non-biogenic</b>
<b>Hydrogen, renewable</b>	Fuel Cells
	Combustion
<b>Waste Heat</b>	Sulfuric Acid Manufacturing

**RPS Data Form 2: Conventional Generating Technologies**

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**Company Name:** Not Applicable

**Applicable Utility Service Area:** Not Applicable

<b>Conventional Technologies</b>
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<b>Natural Gas</b>	Combustion Turbine
	Combined Cycle
<b>Coal</b>	Integrated Gasified Combined Cycle
	Supercritical Pulverized Coal
<b>Nuclear</b>	Steam Generation
<b>Other</b>	Other

**RPS Data Form 3: Commercial Availability Data**

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**Company Name:** City of Tampa, Florida  
**Energy Resource:** Municipal Solid Waste  
Biogenic and Non-Biogenic –**Existing Facility**

Typical Unit Annual Capacity Rating (MW)	22.50 megawatts
Earliest Commercial In-Service Date (Year)	Existing Facility In operation since 1985. Major retrofit and refurbishment in 2000-2001. <b>Facility is currently under contract for firm capacity and energy expiring in 2011. Facility will then be available for sale of renewable energy.</b>
Typical Construction & Permitting Time (Years)	5 years
Useful Life of Unit (Years)	20 to 30 years
Fuel Type	Municipal solid waste

**RPS Data Form 4: Performance Characteristics Data**

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**Company Name:** City of Tampa, Florida  
**Energy Resource:** Municipal Solid Waste  
Biogenic and Non-Biogenic –**Existing Facility**

Contribution to Summer Peak Demand (MW)	19.0 megawatts
Contribution to Winter Peak Demand (MW)	19.0 megawatts
Average Annual Heat Rate (BTU/kWh)	Approximately 18,000 BTU/kWh
Equivalent Availability Factor (%)	95%
Average Annual Generation (MWH)	165,000 mWh Net
Resulting Capacity Factor (%)	90%+

**RPS Data Form 5: Environmental Characteristics Data**

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**Company Name:** City of Tampa, Florida  
**Energy Resource:** Municipal Solid Waste  
 Biogenic and Non-Biogenic –**Existing Facility**

Emission Rates	Carbon Dioxide (CO <sub>2</sub> ) (lb/kWh)	See Footnote Below*
	Sulfur Dioxide (SO <sub>2</sub> ) (lb/kWh)	0.00053 lb/kWh
	Nitrogen Oxide (NO <sub>x</sub> ) (lb/kWh)	0.006 lb/kWh
	Mercury (Hg) (lb/kWh)	2.9 x 10 <sup>(-7)</sup> lb/kWh
	Water Usage (gal/kwh)	1.2 gal/kWh (0.1 gal/kWh is potable water)

\* On a "life cycle" basis, analyses indicate a net **negative carbon dioxide impact on the order or -4.0 lb/kWh**. A more limited non-life cycle "stack" analysis yields 3.6 lb/kWh.

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**RPS Data Form 6: Estimated Cost Data**

**Company Name:** City of Tampa, Florida  
**Energy Resource:** Municipal Solid Waste  
 Biogenic and Non-Biogenic –**Existing Facility**

	First Year of Commercial Operation (Year)	Existing Facility In operation since 1985. Major retrofit and refurbishment in 2000-2001. <b>Facility is currently under contract for firm capacity and energy expiring in 2011. Facility will then be available for sale of renewable energy.</b>
Installed Capital	Cost <sup>(1)</sup> (\$/kw)	In the range of \$4,000/kW <sup>(3)</sup>
	Escalation Rate (%)	Existing Facility -- Not Applicable
Fixed O & M	Cost <sup>(1)</sup> (\$/kw-year)	In the range of \$630/kW-year <sup>(3)</sup>
	Escalation Rate (%)	CPI
Variable O & M	Cost <sup>(1)</sup> (\$/kwh)	In the range of \$0.03/kWh <sup>(3)</sup>
	Escalation Rate (%)	CPI
Energy	Cost <sup>(1)</sup> (\$/kwh)	Not Applicable/Not Available <sup>(3)</sup>
	Escalation Rate (%)	Not Applicable/Not Available <sup>(3)</sup>
	Levelized Cost <sup>(2)</sup> - Life of Unit (cents/kwh)	Not Applicable/Not Available <sup>(3)</sup>

(1) Expressed in year dollars associated with the first year of commercial operations

(2) Cumulative Present Value Total Revenue Requirements levelized over the life of the unit expressed in year dollars associated with the first year of commercial operation

3) The electric generation component of the facility is only one part of an integrated solid waste management system. As such it is difficult to determine which components and component costs should be included. The City of Tampa would be pleased to discuss with Staff in an effort to provide necessary information.

(4) As noted elsewhere, this is an existing facility under contract for firm capacity and energy pursuant to an agreement expiring in 2011. Upon expiration facility will be available to sell renewable energy.