



To: Karen Webb, Florida public Service Commission

July 21, 2008

From: Jeff Curry, Lakeland Electric

Subject: RPS Data Collection Submittal for Solar Water Heating

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At Lakeland Electric we feel strongly that Solar Water Heating (SWH) should be listed as an eligible measure in the Florida Renewable Portfolio Standard. Since 1999 this utility has been successfully metering and selling the thermal energy produced by SWH to our residential customer class. Our metering equipment quantifies and registers this form of energy in its kilowatt-hour equivalent. As a result of this market-proven success, we clearly recognize SWH as a supply-side generation device.

It is our current plan to greatly expand this program. We are targeting thousands of customers for this expansion. By doing so, SWH will play a major role in Lakeland Electric's renewable generation future.

Attached are the required Data Collection submittal forms for SWH.

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

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Company Name: Lakeland Electric

Applicable Utility Service Area: Lakeland Electric

<b>Renewable Technologies</b>	
<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</b>	Biogenic
	Non-Biogenic
<b>Hydrogen, renewable</b>	Fuel Cells
	Combustion
<b>Waste Heat</b>	Sulfuric Acid Manufacturing
<b>Other</b>	<b>Solar Water Heating</b>

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

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**Company Name:** \_\_\_\_\_

**Applicable Utility Service Area:** \_\_\_\_\_

<b>Conventional Technologies</b>	
<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:** Lakeland Electric

**Energy Resource:** Solar Water Heating

Typical Unit Annual Capacity Rating (MW)	.002 MW / 40 Sq. Ft.
Earliest Commercial In-Service Date (Year)	2009
Typical Construction & Permitting Time (Years)	0.1 year
Useful Life of Unit (Years)	25 years
Fuel Type	Solar Energy

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

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**Company Name:**

**Lakeland Electric**

**Energy Resource:**

**Solar Water  
Heating**

Contribution to Summer Peak Demand (MW)	<b>.0004 MW / 40 Sq. Ft. Collector Area</b>
Contribution to Winter Peak Demand (MW)	<b>.0007 MW / 40 Sq. Ft. Collector Area</b>
Average Annual Heat Rate (BTU/kWh)	<b>N / A</b>
Equivalent Availability Factor (%)	<b>N / A</b>
Average Annual Generation (MWH)	<b>2.8 MWH / 40 Sq. Ft.</b>
Resulting Capacity Factor (%)	<b>17% - 20 %</b>

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

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**Company Name:**

**Lakeland Electric**

**Energy Resource:**

**Solar Water  
Heating**

Emission Rates	Carbon Dioxide (CO <sub>2</sub> ) (lb/kWh)	<b>Zero</b>
	Sulfur Dioxide (SO <sub>2</sub> ) (lb/kWh)	<b>Zero</b>
	Nitrogen Oxide (NO <sub>x</sub> ) (lb/kWh)	<b>Zero</b>
	Mercury (Hg) (lb/kWh)	<b>Zero</b>
	Water Usage (gal/kwh)	<b>Zero</b>

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

**Company Name:** Lakeland Electric  
**Energy Resource:** Solar Water Heating

	First Year of Commercial Operation (Year)	2009
Installed Capital	Cost <sup>(1)</sup> (\$/kw)	\$1,650 / KW
	Escalation Rate (%)	Zero
Fixed O & M	Cost <sup>(1)</sup> (\$/kw-year)	Zero
	Escalation Rate (%)	Zero
Variable O & M	Cost <sup>(1)</sup> (\$/kwh)	\$0.014 / KWH
	Escalation Rate (%)	4.00%
Energy	Cost <sup>(1)</sup> (\$/kwh)	Zaro
	Escalation Rate (%)	Zero
	Levelized Cost <sup>(2)</sup> - Life of Unit (cents/kwh)	\$0.061 / KWH

(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