

RPS Data Form 1: Renewable Generating Technologies

Company Name: Florida Crystals
 Applicable Utility Service Area: N/A

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

RPS Data Form 2: Conventional Generating Technologies

Company Name: Florida Crystals

Applicable Utility Service Area: N/A

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

RPS Data Form 3: Commercial Availability Data

Company Name: Florida Crystals

Energy Resource: New Biomass Direct Combustion - Plant Matter

Typical Unit Annual Capacity Rating (MW)	80 MW
Earliest Commercial In-Service Date (Year)	2012
Typical Construction & Permitting Time (Years)	4 yrs.
Useful Life of Unit (Years)	30 yrs.
Fuel Type	Biomass

RPS Data Form 4: Performance Characteristics Data

Company Name: Florida Crystals
Energy Resource: New Biomass Direct Combustion - Plant Matter

Contribution to Summer Peak Demand (MW)	80 MW
Contribution to Winter Peak Demand (MW)	80 MW
Average Annual Heat Rate (BTU/kWh)	13,500 BTU/kWh.
Equivalent Availability Factor (%)	90%
Average Annual Generation (MWH)	630,000 MWH
Resulting Capacity Factor (%)	90%

RPS Data Form 5: Environmental Characteristics Data

Company Name: Florida Crystals
 Energy Resource: New Biomass Direct Combustion - Plant Matter

Emission Rates	Carbon Dioxide (CO ₂) (lb/kWh)	0
	Sulfur Dioxide (SO ₂) (lb/kWh)	0.0008 lbs/kwh
	Nitrogen Oxide (NO _x) (lb/kWh)	0.002 lbs/kwh
	Mercury (Hg) (lb/kWh)	7.3×10^{-8} lbs/kwh.
	Water Usage (gal/kwh)	design dependent 0.5 gals/kwh

Note: The combustion of biomass fuels is generally regarded as carbon neutral, i.e. the carbon dioxide emitted during combustion is numerically equivalent to the carbon dioxide absorbed by the plant through photo-synthesis during the growth cycle.

If the combustion of biomass results in the delivery of net electrical energy to the grid, then such combustion of biomass reduces carbon dioxide emissions because the electricity displaced would have been generated by fossil fuels.

A recent US-DOE Energy Information Administration report (Form EIA-1605 (2007)) calculated an average carbon dioxide intensity for the Florida electric sector for the most recent reporting period (1999-2002) at 0.678 metric tons of CO₂/MWH.

Therefore, each 100,000 MWH of biomass produced electricity delivered to the Florida grid reduces carbon dioxide emissions by 67,800 metric tons (or 74,580 short tons).

RPS Data Form 6: Estimated Cost Data

Company Name: Florida Crystals
 Energy Resource: New Biomass Direct Combustion - Plant Matter

	First Year of Commercial Operation (Year)	2012
Installed Capital	Cost ⁽¹⁾ (\$/kw)	\$2,700
	Escalation Rate (%)	3%
Fixed O & M	Cost ⁽¹⁾ (\$/kw-year)	\$135
	Escalation Rate (%)	3%
Variable O & M	Cost ⁽¹⁾ (\$/kwh)	0.5
	Escalation Rate (%)	3%
Energy	Cost ⁽¹⁾ (\$/kwh)	4.4
	Escalation Rate (%)	3%
	Levelized Cost ⁽²⁾ - Life of Unit (cents/kwh)	12.0

(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