GT GreenbergTraurig

FLORIDA'S RENEWABLE ENERGY PROJECTS:

UPDATE ON FINANCING, ENVIRONMENTAL LICENSING, AND CONSTRUCTION

Florida Chamber of Commerce
28th Annual Environmental Permitting Summer School

July 24, 2014

Contact:

Michael G. Cooke | cookem@gtlaw.com | (813) 318-5728

Public Utilities

- **Public Utilities as Regulated Monopolies**
  - Provide everyday necessities to the public at large (electricity, gas, water, telephone, transportation);
  - *Build expensive infrastructure; duplication of infrastructure is not economically efficient.*
  - *Have clearly defined territories and are required to serve all users in their territories*; reliability of service very important;
  - *Allowed to charge reasonable, just, non-discriminatory rates (with oversight by regulators)*;

Chapter 366, Florida Statutes--Electric Generators in Florida

- **Section 366.02(1), F.S. says: "'*Public utility*'" means *every* person, corporation, partnership, association, or other *legal entity* . . . *supplying electricity* . . . *to or for the public* within this state . . . ; [but excludes municipal or rural cooperatives]."**

PW Ventures

- *PW Ventures, Inc., v. Nichols*, 533 So. 2d 281 (Fla. 1988) (Co-generator could not sell its electricity to another business; had to sell to a regulated public utility.)
- Co-gen proposed to construct, own, and operate a facility that would provide power to a manufacturing facility. Co-gen asked PSC for declaratory statement that it would not be considered a regulated utility and was free to sell its power to the customer.
- PSC ruled it was a regulated utility subject to PSC jurisdiction.
- On appeal, the Florida Supreme Court looked to Section 366.02(1), Florida Statutes to determine if the co-generator was a regulated utility.
- Per Court--"to the public" means "to any member of the public," even a single entity.

PW Ventures

- "What PW Ventures proposes is to go into an area served by a utility and take one of its major customers."
- "Under PW Ventures' interpretation, other ventures could enter into similar contracts with other high use industrial complexes on a one-to-one basis and drastically change the regulatory scheme in this state."
- "The effect of this practice would be that revenue that otherwise would have gone to the regulated utilities which serve the affected areas would be diverted to unregulated producers."
- "This revenue would have to be made up by the remaining customers of the regulated utilities since the fixed costs of the regulated systems would not have been reduced."

PURPA &
Implementation of PURPA
In Florida

Public Utility Regulatory Policies Act of 1978 (PURPA), an overview

- In 1978, Congress passed the Public Utility Regulatory Policies Act (PURPA) with the purpose of encouraging the development of more efficient energy generation from industrial waste heat and renewables.

Public Utility Regulatory Policies Act of 1978 (PURPA), an overview

- PURPA *requires* electric utilities to purchase power from established non-utility Qualified Facilities (QFs).
- QFs are small power producers and cogenerators who sell power to utilities.

Public Utilities Regulatory Policies Act of 1978 (PURPA), an overview

- at “avoided cost”
- “Avoided cost” means the cost the utility would have incurred by producing the power itself or purchasing from another supplier.
- Designed to protect ratepayers by limiting recovery of utility costs to those that otherwise would be included
- Federal Energy Regulatory Commission (FERC) directed states to implement PURPA.

Implementation of PURPA in Florida, Section 366.051, F.S.

- **Section 366.051, F.S., *requires* utilities to purchase power from QFs and renewable energy generators within their service territories at the "full avoided cost."**

Implementation of PURPA in Florida, Section 366.051, F.S.

- **The "avoided cost payment" is divided into two categories: Capacity and Energy.**
  - "Capacity – The size of the customer base that has been calculated, as well as how much money it would cost to build a power plant to meet that demand. Once this is determined, the payment is fixed. In order to get the full payment, however, the generator must be operating when needed, especially during peak times. If not, penalties are enforced."
  - "Energy – The amount of fuel and maintenance that would be required to operate a plant. Based on kilowatt hours produced by the renewable energy generator and sold to the utility, this payment fluctuates because of changes in fuel prices."

Levelized Cost of Energy

U.S. average levelized costs (2012 $/MWh) for plants entering service in 2019								
Table 1. Estimated Levelized Cost of Electricity (LCOE) for New Generation Resources, 2019								
Plant type	Capacity factor (%)	Levelized capital cost	Fixed O&M	Variable O&M (including fuel)	Transmission investment	Total system LCOE	Subsidy[1]	Total LCOE including Subsidy
Dispatchable Technologies								
Conventional Coal	85	60.0	4.2	30.3	1.2	95.6		
Integrated Coal-Gasification Combined Cycle (IGCC)	85	76.1	6.9	31.7	1.2	115.9		
IGCC with CCS	85	97.8	9.8	38.6	1.2	147.4		
Natural Gas-fired								
Conventional Combined Cycle	87	14.3	1.7	49.1	1.2	66.3		
Advanced Combined Cycle	87	15.7	2.0	45.5	1.2	64.4		
Advanced CC with CCS	87	30.3	4.2	55.6	1.2	91.3		
Conventional Combustion Turbine	30	40.2	2.8	82.0	3.4	128.4		
Advanced Combustion Turbine	30	27.3	2.7	70.3	3.4	103.8		

Levelized Cost of Energy

U.S. average levelized costs (2012 $/MWh) for plants entering service in 2019

Table 1. Estimated Levelized Cost of Electricity (LCOE) for New Generation Resources, 2019

Plant type	Capacity factor (%)	Levelized capital cost	Fixed O&M	Variable O&M (including fuel)	Transmission investment	Total system LCOE	Subsidy[1]	Total LCOE including Subsid
Advanced Nuclear	90	71.4	11.8	11.8	1.1	96.1	-10.0	86.1
Geothermal	92	34.2	12.2	0.0	1.4	47.9	-3.4	44.5
Biomass	83	47.4	14.5	39.5	1.2	102.6		
Non-Dispatchable Technologies								
Wind	35	64.1	13.0	0.0	3.2	80.3		
Wind-Offshore	37	175.4	22.8	0.0	5.8	204.1		
Solar PV[2]	25	114.5	11.4	0.0	4.1	130.0	-11.5	118.6
Solar Thermal	20	195.0	42.1	0.0	6.0	243.1	-19.5	223.6
Hydro[3]	53	72.0	4.1	6.4	2.0	84.5		

Source: U.S. Energy Information Administration, *Annual Energy Outlook 2014*, April 30, 2014, DOE/EIA-0383(2014).

Examples of Avoided Cost Impacts on Recent Florida Projects

- TECO/Energy 5.0, L.L.C. proposed 25 MW solar voltaic project—
- "TECO's evaluation of the Contract, without revenues from the sale of RECs, indicates that the purchased power . . . would have a net cost above TECO's as-available energy costs of approximately $44 million to $65 million over the life of the contract." (From December 3, 2009 staff recommendation)

Examples of Avoided Cost Impacts on Recent Florida Projects

Table 2: Summary of Levelized Cost Estimates

	¢/kWh
Energy 5.0 Project (Estimated by Staff)	22.4[3]
TECO Self Build (Estimated by Staff)	38.0[3]
Navigant Estimate	28.8[4]
FPL De Soto Project	49.5[5]

Based on the data compiled by staff, the levelized cost estimate of the Energy 5.0 facility appears to be reasonable when compared to other similar projects. However, as discussed below, the Contract remains substantially above TECO's avoided-cost.

Conclusion:

The voluntarily negotiated Contract between TECO and Energy 5.0 will provide a viable source of renewable energy that will displace energy generated by fossil fuels, thus reducing the state's dependence on these resources and promoting fuel diversity.

Section 366.91(1), F.S., provides:

The Legislature finds that it is in the public interest to promote the development of renewable energy resources in this state. Renewable energy resources have the potential to help diversify fuel types to meet Florida's growing dependency on natural gas for electric production, minimize the volatility of fuel costs, encourage investment within the state, improve environmental conditions, and make Florida a leader in new and innovative technologies.

In this instance, we find it appropriate to approve TECO's Petition for its Solar Energy Purchased Power Agreement with Energy 5.0 in order to provide fuel diversity benefits to the Company and its customers, and to further the goals of promoting renewable solar energy resources and encouraging investment in solar technology in Florida. We also find it is appropriate in this case that TECO shall be authorized to recover the energy payments associated with this voluntarily negotiated solar energy power purchase agreement through our periodic review of fuel and purchased power costs through TECO's annual fuel cost recovery factor.

Examples of Avoided Cost Impacts on Recent Florida Projects

- Gainesville Regional Utilities/GREC, L.L.C., biomass plant—Order No. PSC-10-0409-FOF-EM, June 28, 2010
- "If GREC, LLC contracted with an IOU, recovery of payments . . . would be subject to our approval and we would be able to prevent ratepayers from paying above avoided cost for the renewable energy and capacity of the project . . . [and] our decision may have been different."

Recent FERC Orders on "Avoided Cost"

- **"States have the authority to dictate generation resources from which utilities may procure electric service . . . [and] the avoided cost rate may take into account the cost of electric energy from the generators being avoided, e.g., generators with certain characteristics [such as renewable resources.]" *Cal. PUC.*, 134 FERC ¶ 61,044 (2011)**

EPA's Proposed Rule: Existing Source Performance Standards for Fossil Fuel-Fired Power Plant

- Clean Power Plan
- "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Generating Units," 79 Fed. Reg. 34,830 (June 18, 2014) (Proposed Rule)
- Based on section 111(d) of Clean Air Act
- Calls for 30% reduction of CO_2 emissions nationwide by 2030, using 2005 baseline

EPA's Proposed Rule: Existing Source Performance Standards for Fossil Fuel-Fired Power Plant Continued

- **Sets individual goals for each State using 2012 "actual" CO_2 emission rates in each state**
  - e.g. Florida 2012 CO_2 emission rates = 1199 tpy CO_2/MWH
  - 2030 Florida Goal = 740 tpy CO_2/MWH, or, approximately 38% reduction
- **Provides guidance to States on how to achieve reductions – Best System of Emission Reduction (BSER) - using four broad categories of building blocks**

BSER Building Blocks

Building Block	Description	Projected Outcomes and Costs
1	Improve the heat rate (i.e., efficiency) at existing coal-fired power plants through operational improvements and equipment upgrades	Improve heat rates by 6%. Costs $6 to $12 per metric ton (MT) of CO_2 emissions avoided
2	Implement electricity dispatch procedures to substitute lower CO_2 emitting sources, primarily natural gas combined cycle plants (NGCC), for electricity from coal-fired plants	Increase utilization rate of existing rate of Existing NGCC units from a national average of 46% of capacity to 65%-75%. $30/MT of CO_2 emissions avoided

BSER Building Blocks Continued

Building Block	Description	Projected Outcomes and Costs
3	Substitute electricity from very low/ zero-emitting sources, including renewable (e.g., wind and solar) and nuclear, for electricity from fossil-fueled plants. For renewable energy, EPA evaluated best practices based on the renewable portfolio standards in six regions, and applied a growth factor. Based on that analysis, each state was given a renewable energy target. For nuclear energy, EPA projected that plans currently under construction would be completed, and that certain units currently slated for retirement would continue to operate. EPA does not give states "credit" for currently operating nuclear plants not scheduled for retirement.	Complete nuclear plants under construction; avoid retirement of 6% of nuclear capacity, and state-by-state projected increases of renewable energy use. $10 - $40/MT CO_2 emissions avoided

BSER Building Blocks Continued

Building Block	Description	Projected Outcomes and Costs
4	Reduce electric use through improvements in "demand side management" (i.e., increased efficiency by energy users). EPA based its evaluation of what it believed to be the best demand side practices in the various states.	1.5% annual improvement in energy efficiency. $16 - $424/MT of CO_2 emissions avoided

Conclusion

Avoided cost issues present regulatory hurdles for alternative energy sources

Recent FERC opinions appear to create pathway to overcome avoided cost issue in certain circumstances

But state regulatory scheme plays significant role

EPA's proposed 111(d) standards might provide incentive for additional renewables

Questions?

Michael G. Cooke
Greenberg Traurig
625 East Twiggs Street
Suite 100
Tampa, FL 33602
cookem@gtlaw.com
(813) 318-5728