

December 8, 2008

Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

**Re: In re: Establishment of Rule on Renewable Portfolio Standard
Comments of Southern Alliance for Clean Energy,
Docket No. 080503-E1**

Dear Commissioners:

Enclosed please find the comments of Southern Alliance for Clean Energy for the December 3, 2008 workshop. The comments build on earlier comments and incorporate the results of the Navigant economic renewable potential study.

The Navigant study lays to rest any question that Florida does not have the natural resources to meet a 20% RPS by 2020. The study also indicates that the RPS can be achieved at a modest cost with the proper mechanisms and incentives. Moreover, an RPS will insulate consumers from price spikes associated with conventional generation.

Sincerely,

A handwritten signature in black ink, appearing to read "John D. Wilson". The signature is fluid and cursive, written over a horizontal line.

John D. Wilson
Director of Research
Southern Alliance for Clean Energy

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

**IN RE: Establishment of Rule on Renewable
Portfolio Standard**

Docket No. 080503-EI

COMMENTS OF SOUTHERN ALLIANCE FOR CLEAN ENERGY

December 8, 2008

Southern Alliance for Clean Energy (“SACE”) thanks the Public Service Commission (“PSC”) for the opportunity to comment. This supplements the comments submitted by SACE on September 8, 2008 and supersedes them where applicable. Additionally, we wish to thank Commissioner Skop for his proposed RPS framework unveiled on December 3rd and Navigant Consulting (“Navigant”) for its Draft Florida Renewable Energy Potential Full Report issued prior to the December 3rd workshop. SACE is a non-profit, non-partisan organization that promotes responsible energy choices that solve global warming problems and ensure clean, safe and healthy communities throughout the Southeast.

It is instructive to restate the intent of the Legislature in tasking the commission to draft a renewable portfolio standard (“RPS”) rule because it provides guidance in the goals behind the RPS. There has been comment during the workshop process that the last goal of “minimizing costs” conflicts with the other stated goals of promoting economic activity and diversifying the states energy portfolio to protect consumers. In fact, all the legislatively-stated goals are complementary and are best collectively realized through an ambitious RPS rule as described below. The goals that the Legislature intends to achieve include:¹

- Promotion of the development of renewable energy;
- Protection of the economic viability of Florida's existing renewable energy facilities;
- Diversification of the types of fuel used to generate electricity in Florida;
- Lessen Florida's dependence on natural gas and fuel oil for the production of electricity;
- Minimize the volatility of fuel costs;
- Encourage investment within the state;
- Improve environmental conditions; and, lastly
- Minimize the costs of power supply to electric utilities and their customers.

Florida has resources to meet 20% by 2020

The Draft Florida Renewable Energy Potential Assessment Report indicates that Florida has the renewable energy resources to meet the Governor’s goal for 20% renewable

¹ §366.92(1), Fla. Stat. (2008)

energy by 2020² at a modest investment level given the proper mechanisms and incentives.

Navigant provided three scenarios for renewable energy investment within the state; an unfavorable, a mid-favorable, and a favorable scenario. The three scenarios included 13 fixed variables such as natural gas prices, CO2 emission prices per ton and a RPS spending cap.³ While additional iterations of the scenarios with the ability to model variables between scenarios would have provided additional information, the report conclusions provide a good foundation from which to base a RPS rule.

In its favorable scenario, the Navigant study demonstrates that with the right policies, Florida could achieve 27% of electricity from renewable resources. This would exceed the Governor's goal by 35%. The favorable scenario assumed a natural gas ("NG") market price of \$11 - \$14, a CO2 compliance cost of \$50/ton by 2020 and a utility retail revenue cap of 5% to support renewable energy credits ("RECs").

In its mid-favorable scenario, the Navigant study demonstrates that with the right policies, Florida could achieve approximately 12% renewables. The mid-favorable scenario assumed a NG market price of \$8 - \$9, a CO2 compliance cost of \$30/ton by 2020 and a utility revenue cap of 2% to support RECs.

It is important to note the study would have provided even more technical and economic solar energy potential, likely under all scenarios, if the adoption of small solar thermal units was modeled. The Navigant study did not include the technical or economic potential of solar thermal projects below 2 MWs. Smaller solar thermal units have a smaller capital investment requirement and a quicker payback periods than solar photovoltaic ("PV"); therefore, they offer the greatest technical and economic potential for homeowners and small scale commercial. As noted at the workshop by Dell Jones of Regenesys, Inc., the city of Lakeland anticipates installing up to 80 MWs of solar thermal over a 20 year period, but 40 MW in the first five years. Similar programs in other utility territories could add up to substantial MWs of solar thermal systems in Florida.⁴

A 20% by 2020 RPS can be achieved at a modest cost

The rate impact of a 20% by 2020 RPS would be less than 2.5% or about \$3.50 per month for a typical household using 1,000 kWh of electricity.⁵ A \$3.50 per month rate impact is clearly not "cost prohibitive" as it is modest relative to rate impacts from

² Executive Order 07-127. While Gov. Crist did not state a deadline for the 20% RPS target in the executive order, he has publicly advocated for a 2020 deadline, *see Governor Signs Executive Orders to Reduce Greenhouse Gases*, July 13, 2007, at <http://www.flgov.com/release/9217>.

³ Navigant Consulting, Inc., *Draft Florida Renewable Energy Potential Assessment Report*, November 24, 2008, pg 190.

⁴ Demand-side renewable installations may also be eligible for incentives under FEECA. See §366.82(b)(2), Fla. Stat. (2008).

⁵ The \$3.50 per month estimate is an average of the rate impact for the mid-favorable and favorable scenarios, which project a 12% and 27% renewable energy generation rate respectively. The Navigant study does not forecast rates with and without a RPS, so its estimates capture the full additional cost of renewable energy without identifying any indirect cost savings in the conventional generation system.

conventional generation sources, and the benefit to ratepayers substantial, as described more fully below. This demonstrates that a cost cap is quite unnecessary; cost considerations can be handled on an exception basis as suggested in our earlier comments. If the Commission implements a cost cap, it should be set at a level that is clearly sufficient to enable the state to achieve the Governor's goal of 20% by 2020.

Navigant recognized that the levelized cost of solar PV is already cost competitive with NG peaking units in the mid-favorable scenario. The levelized cost of solar PV is estimated at \$.2132/kWh, while NG combustion turbines were higher at \$.2278/kWh.⁶ In this respect, solar PV is already well positioned to replace NG combustion turbines in summer peak periods when air conditioning units are running the hardest because that is the time period when solar PV is generally at its highest capacity factor.

Relative rate impact small

The relative rate impact of the adoption of a 20% by 2020 RPS is small in the context of rate impacts from conventional generation. The average Florida utility customer bill has increased by 25% since 2005.⁷ Utility bills will increase by over 25% next year for Progress Energy customers due early cost recovery for new nuclear power plant construction and recently approved fuel charge increases.⁸ Similar rate increases are anticipated for FPL.⁹

The following table illustrates the rate impact of a 20% by 2020 RPS in the context of the expected rate impacts from the proposed construction of two nuclear units by Progress Energy Florida in Levy County.

⁶ Navigant Consulting, Inc., *Draft Florida Renewable Energy Potential Assessment Report*, November 24, 2008, pgs. 207, 212.

⁷ Florida Public Service Commission Workshop on a Renewable Portfolio Standard, *Statement by Florida Crystals Corporation*, July 11, 2008, at: http://www.floridapsc.com/utilities/electricgas/RenewableEnergy/07_11_2008_index.aspx

⁸ Progress Energy Florida press release, *Progress Energy Florida estimates fuel, nuclear and environmental costs for 2009*, August 29, 2008, at: <http://www.progressenergy.com/aboutus/news/index.asp>; In re: Petition to Establish Discovery Docket Regarding Actual and projected Costs for Levy Nuclear Project by Progress Energy Florida, Inc, Docket No. 080149, August 28, 2008; see also Petition for Approval of Fuel and Purchase Power Cost Recovery Factor for Period 1.09 through 12/09, Docket No. 08-0001. The fuel charge cost may be mitigated due to recent drop in NG prices.

⁹ Testimony of Steven R. Simms on Behalf of Florida Power and Light, Docket No. 07-0650-EI (describing non-binding capital cost estimate for Turkey Point Units 6 and 7).

	Monthly Rate Impact	
Year	Proposed Nuclear Units ¹⁰	20% RPS by 2020
2009	\$ 6.43	
2010	9.16	
2011	14.33	
2012	13.09	
2013	18.92	
2014	23.61	
2015	27.93	
2016	34.52	\$16.24
2017	44.43	
2018	51.92	
2019	51.92	
2020	51.92	26.90

The cumulative rate impact from implementing a RPS that will achieve 20% renewable energy by 2020 is \$26.90 in 2020, whereas; the rate impact from the proposed Levy County nuclear units is \$51.92 in 2020. The impact to ratepayers from the proposed construction of nuclear units is about twice the rate impact of a RPS to achieve 20% renewable energy by 2020.

Conventional power ties consumers to uncertainty

Both nuclear construction costs and fuel charges for conventional power plants have spiked considerably. The rate impact estimate for the above nuclear units and for the proposed FP&L units are non-binding estimates and subject to likely increase. The estimates to construct nuclear units have almost doubled since last year. The Keystone Center, a non-profit research organization, concluded in a 2007 report that the estimates for new nuclear reactors would be \$4,000 per kilowatt with interest. Earlier this year, FP&L proposed two new 1,100 MW units at a cost of \$18 billion. The FP&L estimate established a \$6,000 per kilowatt cost.¹¹ Earlier this year, the National Association of Regulatory Utility Commissioners estimated a per kilowatt cost for nuclear generation of up to \$9,000 per kilowatt.¹² The sharp increased estimates are due to the soaring price of commodities, such as concrete and steel, required to construct new power plants. The demand for such commodities is expected to be continue to be high because demand from China and India growing industrial infrastructure shows no signs of receding.

In contrast, upfront capital costs for renewables, such as solar PV, have been steadily dropping in price. The price per watt peak has dropped from \$27 in 1982 to \$4 today.¹³ The price of solar PV modular panels is expected to continue its decline and allow solar PV to be cost effective with current conventional generation on a levelized cost basis by

¹⁰ Testimony of Javier Portundo on Behalf of Progress Energy, Docket No 080148-EI, 2008. Estimate may have been increased due to significant drop in rate of growth of customer base.

¹¹ Keystone Center, *Nuclear Power Joint Fact Finding*, page 34, June 2007.

¹² NARUC Staff Subcommittee on Accounting and Finance, *Credit Risks Associated with Nuclear Generation*, April 2, 2008.

¹³ Photovoltaic Industry Statistics, at: <http://www.solarbuzz.com/StatsCosts.htm>

2015.¹⁴ Given the continuing rise in conventional generation construction estimates and the drop in cost of renewable energy cost, such a solar, the fundamental question before the commission is what level of exposure to price risk from conventional power it wants to place on Florida consumers.

In addition to the upward trend of construction costs for conventional generation, fossil fuel prices, such as natural NG have become high and extremely volatile. Navigant noted that fossil fuel prices have the most relative uncertainty of all the variables used in the modeling scenarios.¹⁵ As recently as early July 2008, NG prices were approximately \$14MM per Btu, but have now dropped to about \$7MM Btu.¹⁶ Florida is heavily reliant on NG with over 38% of electric generation dependent on NG.¹⁷

Florida's over-reliance on conventional generation has impacted consumers with substantial rate impacts from nuclear capital construction costs and fossil fuel charge volatility and increases. The Legislature in its RPS intent language to the RPS statute recognize that renewable energy can and must help the state: minimize the volatility of fuel costs; lessen Florida's dependence on natural gas and fuel oil for the production of electricity; and most importantly, minimize the costs of power supply to electric utilities and their customers.

Hedge benefits of renewable energy

Renewable energy sources can provide important hedge benefits. While such benefits were not modeled in the Navigant study, they should not be discounted as an important reason to quickly move to renewables to diversify the portfolio.

Spiking conventional generation impacts to consumers highlight the value of renewable energy as a hedge against price volatility. Other utilities make explicit use of this "insurance" value in resource planning. The Northwest Planning and Conservation Council is a particularly notable example.¹⁸

Renewable sources of energy provide two prominent risk mitigation benefits relative to high and volatile NG prices. First, in contrast to gas-fired generation, long-term contracts for RE are typically offered on a fixed-price basis. To obtain a similar hedge with gas-fired generation, one would have had to pay a substantial premium relative to the most commonly used gas price forecasts in the nation.

¹⁴ See Utility Solar Assessment Study, June 2008 at http://www.cleandedge.com/reports/pdf/USA_Study.pdf ; DOE is encouraging and anticipating solar competitiveness by 2015. See Solar America Initiative at http://www1.eere.energy.gov/solar/solar_america

¹⁵ Navigant Consulting, Inc., *Draft Florida Renewable Energy Potential Assessment Report*, November 24, 2008, pg 15.

¹⁶ Energy Information Administration, at <http://tonto.eia.doe.gov/oog/info/ngw/ngupdate.asp>

¹⁷ Florida Public Service Commission, *Review of 2007 10 Year Site Plans for Florida Utilities*, December 2007.

¹⁸ Eckman, Tom, Cost and Risk Management Benefits from Energy Efficiency in the Northwest Power and Conservation Plan, NARUC presentation, February 2005.

Second, a number of studies show that aggressive renewable energy penetration may put downward pressure on natural gas prices by easing natural gas supply pressures. Based on an evaluation of numerous studies that have looked at this effect, it is not unreasonable to expect that any increase in consumer electricity costs that are caused by renewables will be substantially offset by a reduction in delivered gas prices.¹⁹

The value of an RPS in placing downward pressure on fossil fuel prices was also borne out in a report by the Governor's Climate Action Team, Energy Supply and Delivery Technical Working Group. The technical working group concluded that a 20% RPS by 2020 would reduce demand for NG in FL by 4 trillion cubic feet and reduce demand for coal by 38 million short tons through 2020.²⁰

The hedge benefits of renewable energy directly implicate the much of the legislative intent behind the RPS. The benefits include reducing Florida's reliance on NG, minimizing the volatility of fuel cost and thereby minimizing costs consumers in the mid and long term.

Additional benefits of renewables

Some benefits of renewable energy are harder to quantify, but should not be considered less valuable than quantifiable renewable energy benefits. Several studies in other states have found line loss benefits of distributed generation. Such benefits could play an important role in Florida transmission system – often characterized as aging and overtaxed. Another benefit includes renewable limited use of water. For instance solar does not require water components as do conventional and nuclear generation power plants. Water is becoming an increasingly scarce resource in the Southeast and throughout the world. and as such, this benefit requires increased consideration. Lastly, Florida has no indigenous fossil fuels; almost all our “energy dollars” leave the state for fossil fuel purchases. Renewables use indigenous resources, such as the sun and crops, thereby attracting investment into the state to develop the infrastructure and maintain the infrastructure through domestic employment. This benefit is of critical importance as the Florida and the nation heads into the worst economic recessions in recent history.

Renewable developers require financial certainty

We applaud Commissioner Skop for recognizing in his proposal that renewable energy developers require financial certainty. Just as investor owned utilities, renewable energy developers must secure financing to launch renewable energy projects. As such, they require a revenue stream of future payments to secure debt financing. Contracting requirements play a critical role in securing future payment streams. We support the idea of financial certainty behind the REC standard offer contract concept advanced by Commissioner Skop.

The most successful RPS states expressly require utilities to sign long-term power purchase contracts with eligible renewable energy developers. In states where short term

¹⁹ Wisner and Bollinger, *The Value of Renewable Energy as a Hedge Against fuel Price Risk*, September 3, 2004.

²⁰ Florida's Energy and Climate Change Action Plan, Executive Summary, pg. 23.

trade in RECs is predominant over long-term contracting, RPS policies appear to be more costly and unstable. Where long-term contracts are available or required, RPS policies have been more successful.²¹ While the administration of a REC standard offer program would have associated costs, we expect that those costs would be considerably less than the administration of an in-state REC market.

Examples of REC Standard Offer Contracts for in other states for solar power include:

- Arizona Public Service offers 10 and 15 year contracts with REC prices at 0.202/kWh and 0.187/kWh respectively. Small systems are offered an upfront payment of \$3/watt DC, in exchange for the estimated REC production from the system.
- Public Service Company of New Mexico offers 20-year contracts for solar RECs at \$0.13/kWh for systems under <10kW. It recently proposed expanding that program to commercial-scale systems between 10 kW and 1,000 kW.
- Xcel Energy in Colorado offers 20-year REC contracts with both an upfront buydown of \$2/Watt for all systems up to 100 kW, plus an additional buydown of \$2.50/Watt for systems under 10 kW or an additional \$0.115/kWh produced for systems between 10 kW and 100 kW.²²

Set asides for Class I renewables

SACE supports the preferential treatment for solar and wind resources expressed by Governor Crist and the Florida Legislature. Florida is not alone in recognizing the public value of emission-free resources. Set-asides for solar or distributed generation exist within 12 of the 26 U.S. state RPS programs.²³

There was some comment at the workshop of letting the market pick the “winner and losers” in the renewable energy marketplace. Unfortunately, that paradigm does not recognize the emission free profile of solar and wind, the peak shaving benefits of solar power, and the job creation benefits of solar and wind power. If left simply to the market, the benefits of those resources would almost certainly not be realized until later years. A set aside is the only way to guarantee that these resources will be utilized in the RPS.

Lastly, although PSC staff evaluated the concept of a Clean Energy Portfolio (“CEP”) in response to comments from FP&L, it is evident from the analysis and our prior comments that CEP is not within the scope of the RPS as envisioned in the statute.²⁴

²¹ Cory & Swezey, *RPS in the States: Balancing Goals and Implementation Strategies* (2007).

²² Testimony of Dr. Charles Starr for Vote Solar, North Carolina Utilities Commission, Docket No. E-7, Sub 856 (2008).

²³ RPS programs that include solar/DG set-asides include Arizona, Colorado, Delaware, Maryland, Nevada, New Hampshire, New Jersey, New Mexico, North Carolina, Ohio, Pennsylvania and Washington.

²⁴ §366.92, Fla. Stat. (2008).