



Mark Futrell
Florida Public Service Commission

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Submitted electronically

RE: Staff RPS Workshop on August 23

Dear Mark,

Enclosed please find for filing joint comments submitted on behalf of Vote Solar, Solar Alliance, the Florida Solar Energy Industries Association (FlaSEIA), the Florida Solar Energy Research and Education Foundation (FlaSEREF) and the Florida Renewable Energy Association (FREA).

Respectfully Submitted,

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**JOINT COMMENTS OF VOTE SOLAR, SOLAR ALLIANCE,
FLORIDA SOLAR ENERGY INDUSTRIES ASSOCIATION, FLORIDA SOLAR
ENERGY RESEARCH AND EDUCATION FOUNDATION,
AND FLORIDA RENEWABLE ENERGY ASSOCIATION
ON A RENEWABLE PORTFOLIO STANDARD**

Introduction

The following comments are made on behalf of Vote Solar, Solar Alliance, Florida Solar Energy Industries Association (FlaSEIA), Florida Solar Energy Research and Education Foundation (FlaSEREF), and Florida Renewable Energy Association (FREA), hereinafter referred to as “Joint Solar Parties”. The Vote Solar Initiative (“Vote Solar”) is a nonprofit organization with members throughout Florida and the U.S that aims to address global warming and energy independence by bringing solar energy into the mainstream. The Solar Alliance supports state lawmakers, regulators and utilities in their efforts to establish more effective solar policies and programs throughout the United States. Inaugural members of the Solar Alliance include American Solar Electric, BP Solar, Conergy, DT Solar, Energy Innovations, Evergreen Solar, First Solar, Kyocera Solar, Mitsubishi Electric, MMA Renewable Ventures, PPM Energy, Inc. REC Solar, Sanyo Energy, Schott Solar, Sharp Solar, SolarWorld, SPG Solar, Sun Edison, SunPower, Suntech, United Solar and Xantrex. FlaSEIA is a nonprofit professional association of companies involved in Florida’s solar energy industry. Members include manufacturers, distributors, contractors, retailers and consultants who provide solar water heating, pool heating and solar electric systems. FlaSEREF is a non profit charitable organization that supports the growth and development of the solar energy industry in Florida. FREA is dedicated to expanding the use of clean, renewable energy technologies through public awareness, political advocacy, and individual initiative.

The following comments reflect our joint response to the questions and issues raised at the August 23rd undocketed Staff Workshop on Renewable Portfolio Standards. We appreciate the opportunity to provide input on the RPS and more specifically, the role solar can play under an RPS in Florida.

Goals & Objectives

The underlying goal of an RPS is to provide a clear public pathway that shifts the state’s energy usage from conventional sources to a diverse portfolio that includes renewable sources. It does this by creating markets for renewable technologies that can provide the state, over the long term, reliable and environmentally benign energy generation.

Executive Order 127 provides specific guidance to the Commission: open markets to clean, renewable energy technologies in order to avoid future greenhouse gas (GHG) emissions by establishing an RPS with strong provisions for solar and wind. The Joint Solar Parties believe that a successful RPS will optimize the following objectives:

Reduce greenhouse gas emissions. Per Executive Order 127, the RPS should be structured to promote renewable technologies that avoid greenhouse gas emissions.

Note that an RPS should be part of a broader strategy to achieve reduction of greenhouse gases in the state. Other initiatives (e.g. programs to encourage energy efficiency, alternative transportation fuel initiatives) will also play a significant role.

Diversify the state's energy sources. Renewable energy sources and technologies vary by availability, cost, and dispatch flexibility and therefore a diverse portfolio of resources is needed. Resource acquisitions that focus solely on minimizing *initial* costs will not accrue the benefits associated with diversification.

Hedge against future energy prices shocks. Renewable energy can provide a valuable hedge against escalating and volatile fuel prices. Recent analysis by Lawrence Berkeley National Laboratory (LBNL) indicates that the incremental cost to hedge fuel price risk exposure is potentially large enough to justify fixed-price investments in renewables rather than new investments in variable-price, fossil fuel-fired generation¹. Minimizing cost is an important objective, but the PSC should consider long-term costs associated with volatile fuel prices that are not adequately captured in avoided cost calculations, rather than focusing exclusively on minimizing initial costs.

Spur in-state investment and economic development. An RPS should foster markets for commercially available renewable technologies that may not otherwise be developed under traditional cost-effectiveness tests.

If an RPS is to balance these various objectives at minimum cost then it is crucial to reduce policy uncertainty to the extent possible and structure rules that promote market transformation.

Applicability of RPS

The Joint Solar Parties recommend that the goal be applied statewide and that the PSC apportion the obligation year-by-year based on the actual electricity sold by each utility, muni, and co-op.

We further recommend that the PSC adopt a rule that ensures the development of new renewable energy sources in order to maximize the environmental and economic benefits that will result from this policy.

Resource Eligibility

The RPS objectives should largely determine what resources are eligible to participate. From the perspective of the Joint Solar Parties, this means the resources should limit greenhouse gas emissions, help diversify the state's fuel mix, provide a hedge against escalating and volatile energy prices, and provide economic development opportunities. We recommend that zero-emission renewable energy be given highest priority, including:

¹ Wisner, R. and Bolinger, December 2006 M. http://eetd.lbl.gov/ea/ems/reports/53587_memo.pdf

- i. Solar electric technologies
- ii. Solar thermal technologies (based on kWh equivalent contribution)
- iii. Wind
- iv. Biomass (closed loop)
- v. Ocean power

Further, we recommend not including energy efficiency in the RPS. Energy efficiency has tremendous potential – both in terms of consumer energy savings and reductions in GHG emissions in Florida – that can be tapped cost-effectively today. To the extent that energy efficiency investments are not adequately covered by FEECA, we recommend the Commission consider developing a separate initiative, such as an Energy Efficiency Portfolio Standard (EEPS), as proposed by ACEEE².

Structure of the RPS Goal

The simplest method is to base the standard on the percentage of total electricity sold in a given period. As per Executive Order 127, we recommend a goal of 20% by 2020 for new renewables.

Provisions for solar

We recommend an explicit “solar share” to ensure that distributed solar electric and solar thermal are included to a significant extent in the RPS and therefore accomplish the goals set by the Governor in his Executive Order.

Specifically, we recommend the following:

- i. 2% of all electricity sales be provided by solar PV or offset by “solar renewable energy credits” by 2020
- ii. 2% of all electricity sales be provided by the kWh equivalent of solar thermal systems or offset by “solar renewable energy credits” by 2020

The goals should be ramped in gradually during the initial years, escalating more rapidly as the state’s solar industry takes measures to meet the growing demand. Our recommendation is as follows:

² Elliot, N. et al. *Potential for Energy Efficiency and Renewable Energy to Meet Florida’s Growing Energy Demands*. ACEEE, June 2007

RPS Target for Solar Electricity

Yearly Target	Total Solar Electricity Produced	% of Total Retail Sales	Cumulative Solar Capacity Additions
Y1	6,603	0.003%	17
Y2	41,791	0.018%	43
Y3	88,017	0.038%	84
Y4	160,506	0.067%	149
Y5	274,257	0.113%	251
Y6	452,834	0.182%	411
Y7	733,255	0.289%	662
Y8	1,173,679	0.454%	1057
Y9	1,865,479	0.708%	1677
Y10	2,952,202	1.098%	2652
Y11	4,659,369	1.699%	4183
Y12	5,579,776	1.995%	4184

RPS Target for Solar Thermal

Yearly Target	Total Solar Electricity Produced	% of Total Retail Sales	Cumulative Solar Capacity Additions
Y1	262,500	0.117%	313
Y2	550,471	0.240%	655
Y3	866,383	0.370%	1,031
Y4	1,212,949	0.508%	1,444
Y5	1,593,143	0.654%	1,897
Y6	2,010,227	0.809%	2,393
Y7	2,467,781	0.974%	2,938
Y8	2,969,732	1.149%	3,535
Y9	3,520,388	1.336%	4,191
Y10	4,124,474	1.534%	4,910
Y11	4,787,176	1.746%	5,699
Y12	5,514,180	1.971%	6,564

Currently, thirteen states have specific provisions for solar or distributed generation. Of these, twelve states use a set-aside similar to the one we propose (i.e., New Jersey:2.12%, Maryland: 2%, Delaware: 2.005%). Experience in other states has demonstrated clearly that an explicit solar share is the most efficient and effective way to ensure that solar markets develop under the RPS structure.

An alternative to the set-aside is a “multiplier” though they are not necessarily mutually exclusive (for example, Nevada and Delaware have both). A multiplier tends to reduce the total amount of renewable energy procured to comply with the RPS, while providing no apparent benefits to diversity. More importantly, the states that have adopted multipliers have not seen significant solar additions.

In general, states have begun to move towards set-asides (including Maryland, New Mexico, and North Carolina this year) in order to create a more predictable market. If the Commission decides to consider multipliers for solar and other distributed generation technologies, we’d strongly recommend that this be done in conjunction with a set-aside.

RPS Compliance

Renewable Energy Credits

We recommend that “Renewable Energy Credits” (RECs) and “Solar Renewable Energy Credits” (SRECs) be used for compliance. This is the most efficient mechanism for ensuring compliance with RPS requirements and in providing a mechanism for innovative financing for renewable energy projects.

For the solar share, we recommend that eligibility for the associated SRECs be limited to distributed generation solar; i.e. power supplied to the distribution grid that does not flow to the transmission grid.

REC Lifetime

We recommend that the life of a REC be 3 years. This will provide greater flexibility in financing projects with RECs, particularly in the early stages of the program.

Solar REC Contract Provisions

We recommend that the Commission require that SRECs be purchased under long-term contracts. The purpose of this requirement is to provide investors of solar energy systems with greater long term revenue certainty that will in turn result in substantially lower SREC prices.

Provisions for Small-Scale Solar

A robust solar market for small commercial and residential solar will maximize the in-state economic benefits, support small business growth, and reinforce grass-roots political support. Small commercial customers and homeowners generally lack access to sophisticated financing mechanisms. Therefore, these customers generally need a single upfront payment in order to enable their participation in the solar market. States with programs to support small commercial and residential solar markets have used a number of methods to fund these programs, including a portfolio requirement (e.g. California has earmarked funding for small systems), or continuation of a supplementary rebate for small systems (e.g. New Jersey, Maryland, and Colorado).

RECs from Voluntary Green Power Programs

RECs associated with voluntary green power programs should not be allowed for use in RPS compliance. Customers that invest in voluntary green power programs expect to be contributing to renewables above and beyond what is already mandated and should therefore be additional to state RPS mandates.

RPS Enforcement

RPS targets should be considered as a firm requirement with a provision for an “alternative compliance payment” (or ACP), which would be required for each MWh of shortfall versus a utility’s compliance requirements.

The ACP should be set by the PSC at a level that is conservatively higher than the expected market price for Renewable Energy Credits (RECs).

Solar Component of RPS Enforcement

The implementation of the “solar share” requirement will result in separate “Solar RECs” or SRECs that are produced by solar generating systems, which are then purchased by utilities for compliance with the “solar share” requirements. The expected market price for SRECs is significantly higher than the expected market price for non-solar RECs. It is therefore important that a solar-specific ACP be set by the Commission.

We further recommend that the Commission set ACP and Solar ACP levels for at least 5 years. This will provide REC and SREC purchasers with greater certainty about long term RPS market conditions that will in turn result in significantly lower risk premiums (and therefore lower REC and SREC prices).

Other Key Issues

For solar PV, it will be imperative to adopt net metering and interconnection rule changes to enable RPS compliance. It will also be critical that investors in solar have access to creative financing mechanisms such as third-party ownership.

Net Metering

Net metering is an important piece of the regulatory infrastructure for the development of renewable energy resources. The policy allows owners of distributed renewable energy systems that produce more electricity than they are using at any given moment to feed the surplus energy directly into the grid and run their meter backwards. The system owner is billed only for net electricity consumed. Net metering makes solar more cost effective for the owner, and benefits all ratepayers by reducing the amount of the most expensive electricity that a utility would have to buy.

No solar PV markets have developed in the absence of a net metering standard. While 39 states have some form of a statewide net metering standard, the current best practices are in New Jersey, Colorado, and most recently Maryland, Connecticut, and Oregon. These states provide annualized, retail rate net metering for systems up to 2 Megawatts and do not impose system-wide limits to enrollment. There are more than 35,000 net metered PV systems operating in the U.S.

Florida is one of only a handful of states that does not have a statewide net metering standard in place. If there is a firm commitment to accelerating adoption of solar, then we recommend the Commission move quickly to establish a statewide net metering law that provides for annualized retail rate net metering for photovoltaic systems open to all customer classes. Like New Jersey and Colorado, two states committed to solar, we recommend that Florida make net metering available for systems up to 2 MW and no limits to total enrollment.

Interconnection Standards

The overarching goal of developing small generator interconnection standards is to reduce interconnection costs, prevent undue discrimination on access to the grid, and facilitate the development of non-polluting alternative energy sources. Low-cost expedited procedures and standard, objective interconnection rules are critical to the viability of small resources in regional energy markets. When well-designed and fairly applied, standards remove unnecessary roadblocks while ensuring grid safety and reliability. To achieve the balance required of an interconnection standard, every effort should be made to solicit participation by a variety of stakeholders, including small customer-generators. The process should also draw from the common experience of other state regulatory commissions that have already addressed small generator interconnection issues.

Third-Party Solar Services

In active solar markets across the U.S., use of third-party structures have become commonplace. Under this type of structure, the host customer enters into a service contract, lease arrangement, or power purchase agreement with a firm that is willing to design, own, and maintain the system. This structure allows the host customer to avoid large capital outlays, and concerns about maintenance and performance risk. Many big box retailers have used this model to participate in the solar market: this year alone, Wal-Mart signed up for 10 MW of solar PV on 22 store

rooftops in California, Kohl's is contracting for 30 MW, and Macy's for 8 MW under third-party arrangements. Customer access to third party solar services will be critical and will ultimately help utilities achieve the solar requirements under the RPS.