



Mark Futrell  
Florida Public Service Commission

December 21, 2007

Submitted electronically

**RE: Staff RPS Workshop on December 6**

Dear Mark,

Enclosed please find for filing joint comments submitted on behalf of Vote Solar and Solar Alliance

Respectfully Submitted,

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**JOINT COMMENTS OF SOLAR ALLIANCE AND VOTE SOLAR**  
**ON**  
**RENEWABLE PORTFOLIO STANDARD STAFF WORKSHOP**  
**HELD ON DECEMBER 6, 2007**

**Introduction**

The following comments are made on behalf of Solar Alliance and Vote Solar. Solar Alliance is a state focused alliance of manufacturers, integrators and installers that are dedicated to accelerating the promise of solar energy in the United States. Solar Alliance's members include Applied Materials Corporation, BP Solar, Conergy, Dow Corning, Energy Innovations, Evergreen Solar, First Solar, Kyocera Solar, MMA Renewable Ventures, PPM, Sanyo Energy, Schott Solar, Sharp Solar, SolarWorld, Sun Edison, SunPower, Suntech, and Uni-Solar.

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 following comments reflect our joint response to the questions and issues raised at the December 6<sup>th</sup> 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.

These comments are intended to build upon earlier comments files following the August 23 staff workshop, and additional comments filed following the September 27 workshop.

**What, if any, policies are needed to encourage specific types of renewables?**

A. General

*Solar photovoltaic (PV) is a zero-emission technology that is well-suited to in-state energy production, and should be specifically targeted within a broader RPS. Solar PV is a modular technology, well-suited for a wide spectrum of applications, from relatively small-scale residential PV rooftop systems (1-10kW) to on-site customer-owned commercial building roof-top or ground-mounted applications (10kW to 2MW) to large-scale solar PV "power plant" projects (over 2MW).*

*The following "Four Pillars" (see Appendix) are the key policies required to encourage investment and increased usage of solar PV for distributed generation applications in Florida:*

- 1. Economic incentives*
- 2. Net Metering*
- 3. Interconnection*
- 4. Rate Design*

*We commend the Commission and staff for adopting net metering and interconnection rules on December 18<sup>th</sup>, 2007 that are designed to remove barriers and encourage clean, local self-generation.*

**B. Issues under a multiplier approach:**

*We would discourage the use of a multiplier approach for several reasons:*

- *Experience in other states demonstrates that multipliers, while theoretically functional, are near impossible to implement correctly in practice. Multipliers are generally set too low, whereby no solar projects get developed, or too high, resulting in an over-subsidization of the technology. To properly implement the multiplier approach in a way that stimulates a market for solar would effectively require the program administrator to take on responsibility for price-setting in a fast-changing and dynamic marketplace.*
- *Multipliers effectively reduce the total amount of renewable energy required to meet the RPS*

**C. Issues under a tiered goal (set asides) approach:**

*A key concern for the PSC to consider in developing policies for a solar energy set-aside will be policy risk. If investors (both suppliers and customers) perceive that there is a significant long term policy risk, there will be significantly less investment in Florida solar energy projects and businesses than if there is greater long term certainty. Being able to predict market size is key to opening a market and having new market entrants develop a business plan.*

*We recommend that a tier or set-aside include the following provisions:*

- *A long-term target for zero emissions distributed generation and binding year-by-year targets (Tier I). For example, our proposal has been to start solar PV requirements at a modest 0.003% and escalate slowly to 2% of total electricity from solar PV. This would provide market transparency and lead to sustained growth of the solar market. Our analysis of resource availability and the cost of solar (estimated and actual costs) indicates that this goal could be achieved at minimal impact to ratepayers, while creating a robust solar market in the state.*
- *Renewable energy credits for solar projects (SRECs) under the set-aside (or Tier I) should not be tied to the price or ACP of renewable energy credits for non-set aside (Tier II) portions of the RPS.*
- *The ACP for Tier I resources should be set at a level that is sufficiently higher than the likely SREC price that would be sufficient to finance solar projects, in order to encourage participation in the market.*

*These elements create a program that is responsive to market conditions. As noted during the workshop, the cost of solar is influenced by factors such as the federal tax credit, price of modules, etc. When the market price to install solar goes up or down, the SREC structure automatically reflects these fluctuations in an open, fair, and competitive marketplace.*

## What policies are needed to encourage compliance?

- *As noted in earlier comments, we believe that firm targets, backed by ACP penalties for non-compliance, are required to achieve RPS goals. Such firm targets and penalties are critical to provide renewable energy investors with confidence in the RPS market. Guidelines per se have proven ineffective in many cases and would not provide necessary certainty to renewable energy customers and project investors.*
- *ACP should be set at a level that is higher than the estimated price of a Solar REC, and should preferably be set over several years, with declining ACP value over time (to reflect projected decline in cost of solar REC's over time).*
- *We would recommend that ACP costs be recovered only insofar as utilities have demonstrated good faith effort in soliciting solar REC's at prices below the ACP.*
- *If the RPS includes a firm ACP mechanism, we expect that the resulting solar REC prices will provide sufficient economic incentives for a significant portion of the market, comprised of medium to large commercial PV systems. However, we expect that additional funding will be required for incentives for smaller PV projects, such as those typically installed on residential homes or small business rooftops. We recommend that the RPS program include a mechanism for targeted incentives for these segments, and we would be happy to provide data from other states to demonstrate that such incentive funding for the small systems segments will be more than offset over time by growth of small business jobs in the state.*
- *See comments filed on October 18 for further detail on RPS compliance recommendations.*

## How should compliance be tracked and verified?

*We have previously filed comments October 18 covering several RPS compliance recommendations. As an additional reference, we have included in the Appendix an excerpt of Frequently Asked Questions for the New Jersey RPS Program, which is currently the largest U.S. market for tradeable solar REC's.*

REC tracking and verification issues:

1. How are eligible facilities certified and audited?

*We recommend an approach similar to that currently used in New Jersey, where SREC generators are required to register for participation on a public electronic trading bulletin board, and where SREC generators are also required to file an attestation form regarding the ownership and disposition of the solar REC's.*

2. Who administers the REC system?

*We would recommend a third-party registry service be used for the purpose of registering and ensuring eligibility of REC's, and for tracking REC ownership and REC*

*trades. One example of a firm that provides this service is Clean Power Markets, which established a low cost, web-based system for the NJ program, and administers REC verification and compliance programs for several other states including PA and CT.*

*We would then recommend that the PSC review a report from this registry service periodically (at least annually) to monitor compliance with RPS requirements.*

3. How is double-counting prevented?

*This problem can be avoided through the use of a third-party registry service (with periodic review by PSC), combined with attestation requirements from SREC generators.*

4. Should line losses be considered?

*If there is a specific tier for distributed generation, we recommend that RECs be limited to systems that are connected and serving the grid at the distribution level.*

*For central station renewable facilities, out of state REC's should be eligible for RPS compliance, though we would recommend provisions similar to the PJM RPS statutes that require energy to be delivered to the regional pool, and the value of the REC reflects what was delivered to the power pool, rather than what was generated at the renewable facility.*

5. Self-service generation issues:

a. Is metering required? What about smaller systems?

*For smaller systems, engineering estimates combined with statistical evaluation can be used (e.g. New Jersey uses this method), while metering is often required for larger systems, where the additional cost to the project is negligible. For solar PV, inverters today typically have integrated metering function.*

b. Should total energy generated be counted, or excess to grid?

*For solar PV systems, total energy generated should be counted, as renewable attributes are, and should be, associated with all energy produced. We do recommend that the Commission establish explicit policies regarding who retains REC ownership.*

## **Compliance Verification and Tracking**

A. Energy efficiency issues:

1. Should EE count towards goals?

*We recommend that energy efficiency be treated separately from the RPS. We believe that both a strong RPS and strong energy efficiency programs will be required to meet the Governor's climate change targets.*

2. Should existing programs be included?

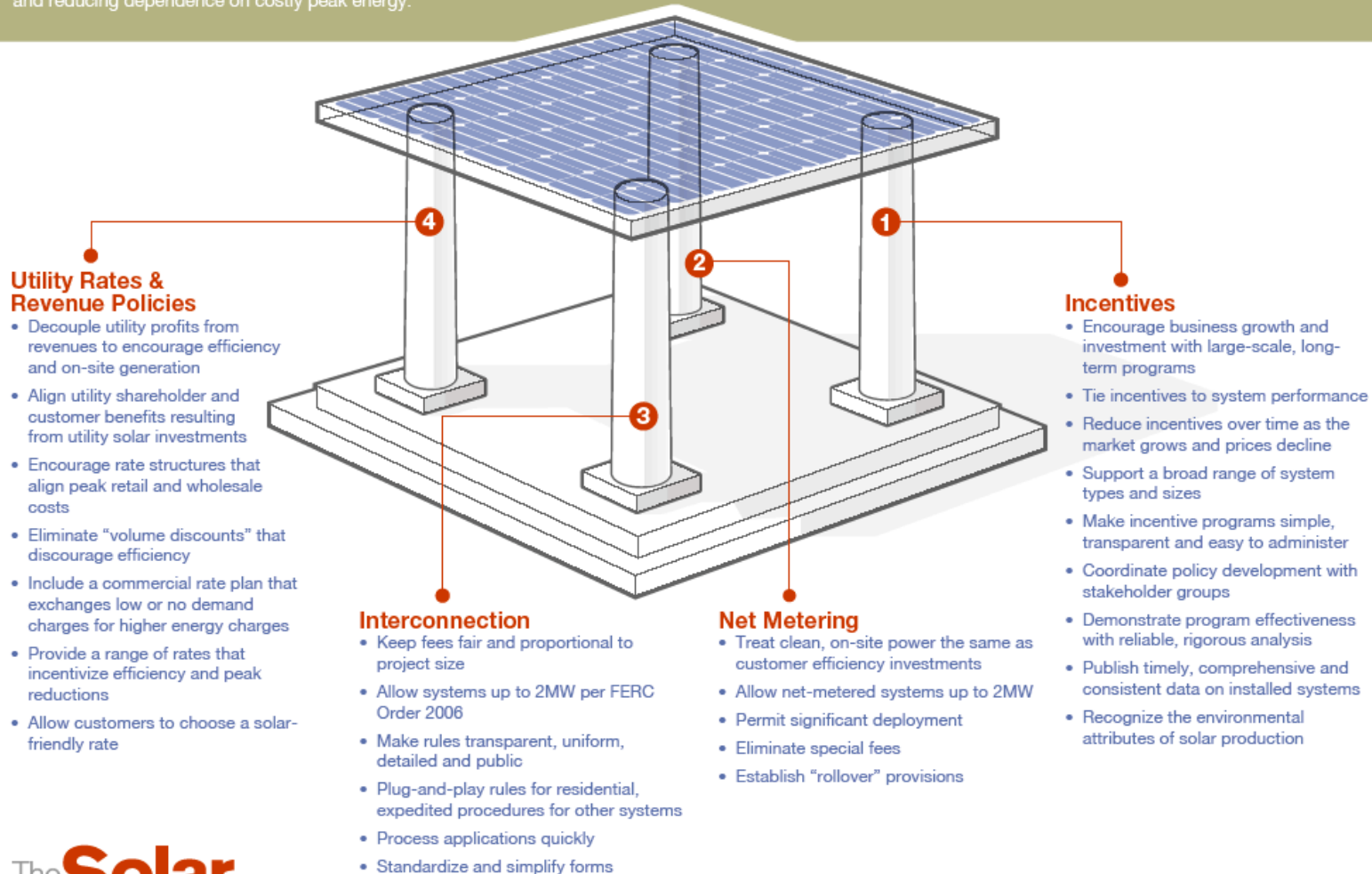
*We recommend that solar systems that receive rebates under the Solar Energy Systems Incentive Program (SESIP) also be eligible to sell solar REC's under the Florida RPS program.*

B. What is the role of the PSC in ensuring compliance? Possible roles:

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|---|--|
| 1. Implementing policy regulations              | <i>Recommend PSC manage directly</i>       |
| 2. Certifying eligible generators               | <i>Recommend third-party administrator</i> |
| 3. Managing a REC system                        | <i>Recommend third-party administrator</i> |
| 4. Verifying utility compliance                 | <i>Recommend PSC manage directly</i>       |
| 5. Administering financial incentives/penalties | <i>Recommend PSC manage directly</i>       |
| 6. Ratemaking – cost-recovery                   | <i>Recommend PSC manage directly</i>       |
| ▪ <i>See recommendations above</i>              |  |

# THE FOUR PILLARS OF COST-EFFECTIVE SOLAR POLICY

Any state can develop a world-class solar market, strengthening the local economy and environment, increasing grid stability, and reducing dependence on costly peak energy.





## New Jersey's Clean Energy Program Solar Renewable Energy Certificates (SRECs) Program

### Getting Started - Frequently Asked Questions

#### What is an SREC?

SREC stands for Solar Renewable Energy Certificate and is a tradable certificate that represents all the clean energy benefits of electricity generated from your solar electric system. An SREC can be sold or traded separately from the power. It is issued once a solar facility has generated 1000kWh (1MWh), through either estimated or actual metered production, and can be listed on the [bulletin board](#) on this website.

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#### What is the New Jersey SREC Program?

The New Jersey SREC Program provides a means for SRECs to be created and verified on your behalf. It also facilitates the sale of SRECs to electric suppliers that are required to invest in solar energy under New Jersey's Renewable Portfolio Standards (RPS). The RPS requires electricity suppliers to get a minimum of 0.01% of the electricity they sell in 2005 from solar energy systems located in New Jersey. This requirement increases each year, so that a total of 90MW of solar electricity will be required by 2009. That's enough electricity to power approximately 8,000 homes. All New Jersey electric suppliers are required to use the SREC Program to show compliance with this part of the State's renewable portfolio standard.

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#### How do SREC'S Differ from Green Tags?

"Green Tags" is a generic term which refers to renewable energy certificates (RECs) generated from a variety of renewable energy sources including solar, wind, small hydro and biomass. Green Tags are widely used to meet various state renewable portfolio standards and are traded in wholesale and voluntary retail markets across the U.S.

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#### Who is eligible to participate in the New Jersey SREC Program?

All solar system owners in New Jersey with grid connected generators can set up an electronic account for the sale and trade of SRECs on this website. You must [register for an electronic account](#), and attest to the ownership or disposition of the renewable energy certificates. The attestation form can be downloaded from the "Background Information" page on the SREC website. The SREC Program Administrator will link your solar system to your electronic account when these steps have been completed.

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#### What portion of my electricity is eligible for the program?

Each kWh produced by your solar electric system that is metered or that is verified through an approved method of estimation, is eligible to be counted towards SRECs. Your solar electric system begins generation of S-RECs on the date of utility sign-off/inspection.

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#### How are SREC's generated and sold?

Once you have registered and established an account on the SREC website, SRECs will be generated each month and deposited in your account. For solar generators smaller than 10 kW, an engineering estimate will be used to



calculate the monthly SREC generation. For solar electric systems that are larger than 10 kW, the SREC website will allow you to upload your monthly meter readings and/or production information into the site. Once SRECs are in your account, you can use an electronic bulletin board on the SREC website to let others know you have SRECs for sale. Interested buyers can also make a request to buy SRECs through the bulletin board. Buyers and sellers can then contact each other offline and execute a sale. Once a sale is made, the seller will use the website to transfer SRECs to the buyer. Electricity suppliers will also use the website to retire SRECs that have been used to meet their RPS requirements.

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#### **Who buys New Jersey SRECs?**

SRECs can be bought by electricity suppliers, renewable energy marketers, private businesses and individuals interested in supporting the development of solar energy. A list of electric suppliers that are required to purchase SRECs, interested 'aggregators' and brokers will be available on the SREC website. Additionally, the website will list the weighted average price for SRECs, updated periodically, to inform buyers and sellers of the going price.

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#### **How much are SREC'S sold for now?**

The price of SRECs will fluctuate. If a supplier of retail electricity in New Jersey does not purchase a sufficient quantity of SRECs to meet their RPS requirements, they must pay the Solar Alternative Compliance Payment set at \$300 per MWh (or SREC) for 2007. Therefore, due to transaction costs for suppliers to obtain SRECs, the Office of Clean Energy estimates the range for SREC trading to be between \$3 to \$250 per MWh. Brokers of RECs routinely report values for Class I RECs in the voluntary market at around \$3 to \$4 per MWh.

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#### **Can someone else sell my SREC for me?**

Yes, some solar electric system owners may have agreements with agents or "aggregators" to handle the disposition or sale of their SRECs. However, only one party can claim ownership or rights to an SREC at any one time. Each solar electric system can be linked to only one SREC account. For an aggregator to be authorized to sell or trade SRECs, the aggregator must provide a written agreement with each solar system owner that has hired the aggregator to handle their SRECs. The SREC Program Administrator will then link those solar electric systems to the aggregator's electronic SREC account.

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#### **How often can an SREC be sold?**

An SREC can be sold an unlimited amount of times but only to one party at any time. No single SREC can be jointly claimed by two parties.

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#### **If I don't sell my SREC what are my options?**

If you choose not to sell your SREC, you can "retire" it which means that you maintain rights to all the clean energy benefits and nobody else will claim those benefits or count them towards their goals or mandates. You can post retired SRECs on your account. However, SRECs are only able to be retired within the reporting year in which they are generated, i.e., June 1 to May 31 plus the three month true-up period. On September 1 each year, unretired SRECs from the previous year will expire.

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#### **If I sell my SRECs, can I still claim that I am solar powered?**

No, if you sell your SRECs, you have sold the claiming rights for being solar powered. However, you can state that you are "hosting" a solar system on your roof.

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**Is SREC income taxable? Will I be issued a 1099 if I sell my SRECs? Is there sales tax on an SREC?**

There is not a definitive ruling on this issue. We recommend you discuss the issue with your tax accountant and perhaps a tax lawyer.

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**What happens if I sell my house?**

Ownership of the solar energy system and the SRECs it generates typically transfers to the new property owner when a home is sold. If you sell your house, you must download the "Major System Change Form" from the SREC home page, fill that out, and submit it to the program administrators. The new owner will also be required to submit a new attestation form.

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**Can I move my solar energy system to a new property?**

Yes. In this case you must download the "Major System Change Form" from the SREC home page, fill that out, and submit it to the program administrators. This form can be downloaded from the SREC website.

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**What if I change or add additional equipment to my solar system?**

If you make any changes, such as adding additional modules, changing inverters or changing your meter, you must fill out and submit a "Major System Change Form". This form can be downloaded from the SREC website.

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**The SREC Web site says that New Jersey will require only 90 MW of solar power to be generated in NJ by 2009. If that is correct and an SREC is issued for each 1 MW generated then only 90 SREC will be bought and sold. Is this correct?**

No. SRECs are issued for every 1 MWh (megawatt-hour) of solar production. The confusion comes in distinguishing between megawatts (MW), which is a measure of installed capacity, with megawatt-hours (MWh), which is a measure of electricity generation. So, 1 MW of solar installations is the same as 1000 kilowatts (kW) of solar installed. Each kilowatt installed will generate approximately 1200 kilowatt-hours of solar electricity per year, or 1.2 megawatt-hours of solar electricity. Therefore, 90 MW of solar installed will produce:  $90 \text{ MW} * 1000 \text{ kW/MW} * 1.200 \text{ MWh/kW} = 108,000 \text{ MWh}$  of electricity. This translates into 108,000 solar RECs, since each solar REC is issued for every 1 MWh of electricity produced.

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**Who should I contact with questions?**

New Jersey's Clean Energy Program  
Tel: **866-NJSMART (866-657-6278)**

Clean Power Markets  
Tel: **201-612-3221**  
[nisrec@cleannpowermarkets.com](mailto:nisrec@cleannpowermarkets.com)