

**MEETING NOTES**  
**CALIFORNIA PV UTILITY (CPVU) MANAGERS MEETING**  
June 14, 2004

**Introductions**

On June 14th, representatives from 12 utilities and the CEC, convened for the fourth time to discuss PV program issues. The meeting was held at Los Angeles Department of Water & Power headquarters.

Resource sharing – on California Solar Center CPVU page

<http://www.californiasolarcenter.org/cpvu/cpvu.html>

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**Presentations and discussion**

**Tom Starrs,**  
**Bonneville Environmental Foundation** [www.b-e-f.org](http://www.b-e-f.org)  
**Green Tags (RECs) and Performance Based Incentives...**

Tom Starrs - formerly the director of RWE Schott Solar, current American Solar Energy Society (ASES) chair, and one of the key architects of net metering laws throughout the country, provided a clear description of green tags or Renewable Energy Credits. His presentation is available online at <http://www.californiasolarcenter.org/cpvu/cpvu.html>

Key points from Tom's presentation included:

- What are green tags? Aka RECs, or TRC
- Who "owns" the 'REC', or right to this credit (utility or system owner)?
- Proposed PBI project
- Connection between green tags and PBI
- Opportunity for non-PBC funds toward installing additional PV?
- Additional steps to streamlining installation of customer sited PV?

Tom noted that, referring to 105 FERC 61.004 code, that the facility owner owns the RECs.

A question and answer session ensued after Tom's formal presentation, including:

Can utilities redraft their interconnection standards for existing net metered customers, stripping them of the RECs?, Tom's understanding of the FERC ruling indicated that utilities could not retroactively redraft their interconnection agreements with existing net meter customers and claim the RECs. Options for claiming RECs at pre-existing sites include offering compensation (eg. 1-5 cents per kWh) in form of discount on their bill. This is ok if voluntary, but cannot be required.

Do PV systems need to be metered in order to claim the RECs? Green-e is suggesting that smaller systems (<10kW) can be accounted for using engineering estimates. There may be other reasons to meter systems that would warrant metering small systems (eg. Switch to PBI).

Note that City of Palo Alto Utilities Green Power Program currently pays up to 5 cents/kWh for SOLAR Renewable Energy Credits as part of its program.

Tom also noted that Greentags from California are currently NOT certified (by Green-e or otherwise), due to the lingering disagreement on ownership of the credits.

Note that Bonneville Environmental Foundation, Tom's current employer, sells Greentags. Additional resources can be found at

<https://www.greentagsusa.org/GreenTags/index.cfm>

<http://www.green-e.org/>

In addition, he provided a presentation on **Performance Based Incentives (PBI)**, paying per kWh produced vs. a rebate based on rated capacity. A paper outlining a PBI incentive program structure is posted online also <http://www.californiasolarcenter.org/cpvu/cpvu.html>

The pilot PBI program proposed by Tom includes, self reporting (email, postcard) and would be something that the California Energy Commission could potentially integrate into their program. Most utilities in the room, agreed that it would not be cost prohibitive to add reading another meter should the utility create a PBI based incentive program that they administrate.

Additional consumer protection measures need to be evaluated and incorporated into PBI based program, in order to provide feedback to system owner, and some leverage on system installer for performance. One method is to require licensed contractors to carry a performance bond via the Cal State Contractors License Board. This is not too expensive and will provide a level of protect for consumers should a system fail or under perform and the installer is unresponsive or out-of-business.

Utilities in California considering PBI-based programs are CPAU (Palo Alto), SMUD (Sacramento) and LADWP (Los Angeles).

Tim Tutt, CEC, noted that the CEC is developing a pilot PBI program (see presentation below). According to Tim, the state legislature is asking for performance data before allocating more funds toward PV. As a result, there is strong interest in implementing a PBI program. A PBI program could potentially solve future funding gaps. The Pilot program will consider a variety of PBI methods, including:

- Germany's Feed in tariff
- KISS – self reporting
- Automated meter reading.

Tim reported that the CEC is looking for a utility partner(s) for the PBI Pilot, in Muni area. The CEC is just starting now to brainstorm on how this pilot will look. Xenergy, the CEC technical support contractor, is beginning work on formulating some ideas. *(Tim has been promoted to a Commissioner Advisor position and is no longer leading the CEC's PBI Pilot effort. Tony Brasil is the new CEC PBI Pilot lead. [as of July 9, 2004])*

Note: that all net metered customer bills are still hand-done. This will resolve itself as volume grows – ie. a utility accounting software issue unique to each utility.

SMUD will be researching how a PBI can be implemented in their service territory and expressed interest in participating in the CEC PBI Pilot. LADWP also expressed interest in participating in the Pilot

It was discussed that if the market has the option of either \$/kw rebates or \$/kWh, they might not use the PBI option and could lead to a stamp of 'failure' on the PBI option. The group also noted that research on additional benefits to the utility of net metered Solar DG is needed. [Next: compile reports completed on this topic] The CPUC DG-OIR currently underway, is supposed to conduct such analysis but it has yet to assigned to any entity to begin. Any PBI Pilot will need to determine the value of the following to utility:

- South facing PV systems
- West facing PV systems – closer match to utility peak loads
- Capacity constrained areas – solar communities
- Natural gas price volatility – invest in local clean energy generation

Currently Pennsylvania and Massachusetts have PBIs.

**Tim Tutt**  
**California Energy Commission**  
**Renewable Portfolio Standard (RPS)–**

Tim Tutt gave a presentation on the the State's Renewable Portfolio Standard (RPS), including:

- Recent Developments regarding RPS.
- Muni role in the RPS law
- What is the value of a solar kWh within the RPS?

Tim noted that the RPS goal of 20% by 2017 is being revised to be 20% by 2010. Gov. Schwarzenegger has stated a goal of 33% by 2020 with the concept that environment and economics goals can be achieved together without sacrificing the other.

Current CA RPS law has:

- No solar set asides in current law and that the
- Greentag market will determine the value of solar kWhs. [Note that CPAU (Palo Alto) is currently paying up to 5 cents per kWh for Solar RECs]

“Solar has lowest capacity factor of all Renewable Energy sources, thus least attractive in RPS terms for utility” [Note that recent studies done by Bonneville Power Authority indicates that Solar has greater capacity factors than wind. This issue needs further discussion]. Solar participates indirectly in the RPS today, since the PV output is contributing to the reduced peak utility load, which serves at the reference from which the 20% goal is calculated.

System of providing incentives to renewable energy (RE), via the CEC, has evolved into a rather complex program. Additional information is posted online

<http://www.energy.ca.gov/portfolio/index.html>

The WREGIS is a new tracking system designed to track and verify RE generation claimed by the utilities.

<http://www.energy.ca.gov/portfolio/wregis/index.html>

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**Tom Hoff**

Clean Power Research [www.clean-power.com](http://www.clean-power.com)

**Data tool for RE market & PBI Analysis for Commercial Customers**

Tom gave a presentation on the **Market Analysis Tool**, that has incorporated data from CEC programs and some muni programs. The Tool uses real cost data collected from solar programs from across the nation to provide a central database. The database provides comprehensive program information that can be used in developing policy recommendations for RPSs, RECs, PBIs as well as provide critical market data. The User can make a variety of queries to determine what is being sold, price per region, etc. Potential options include:

- Providing a complete incentive program database tool for utility administration, which also interfaces with a common db to share cost & location data. The tool is very adaptable to existing databases are being used to administrate programs.
- Providing a 'Blue Book' like tool for consumers. ie. What should I expect to pay for a PV system, based on current sales. This could be an online accessible website for consumers.

*Interested utilities wishing to participate in this project should contact Tom directly.*

**Tom also demonstrated the value of a PBI for Commercial Customers** – Presentation [posted online <http://www.californiasolarcenter.org/cpvu/cpvu.html> ] Tom's presentation showed greater rates of return and quicker paybacks for commercial customers using a PBI versus the standard \$/kW buydown scheme. Under a PBI, commercial customers benefit from Federal investment tax credits and 5 year accelerated depreciation allowances. A lingering question under a PBI scheme is if the \$/kWh payment is considered taxable income.

Still needs to be resolved, as there does not seem to be a solid resolution yet. Note Rahu will be working to get a formal answer from the IRS on this question.

This presentation is further developed in a paper posted on Tom's website  
[http://www.clean-power.com/research/customerPV/PBI\\_Economic\\_Benefits.pdf](http://www.clean-power.com/research/customerPV/PBI_Economic_Benefits.pdf)

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### Round Table – Utility Issues

After Tom's presentation on PBIs, a Round Table discussion ensued on the following topics:

- Discuss & share program issues & experience
- Share monthly net metering statements given to customers [*Next time*]
- Cost per system data sharing for centralized database

Highlights included:

**Low-Income market** – SMUD reported that the State Treasurer's Office through the Tax Credit Allocation Committee (TCAC) funds renewable energy projects on low income housing projects. Developers of low income housing receive additional tax credit funding for solar and other renewable energy systems through a competitive process administered by the TCAC. SMUD has worked with local non-profit, low income housing developers to get solar on local low income housing projects. Riverside has also utilized TCAC tax credits on a local low-income housing project in their territory. .

**LADWP** – Anticipates taking folks off the waiting list for their program. Lower rebate is expected, though the amount has not been determined. Some talk of creating a new definition of 'watts' to base the incentive upon.

**City of Banning** – considering starting a PV program.

**City of Colton** – New incentives to roll out mid-summer

**City of Glendale** – so far ~20 residential systems installed. Larger projects emerging – eg. 400kW system on Glendale College.

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### Tor Allen, Rahu Institute Solar Schoolhouse

Tor presented experiences with the Solar Schoolhouse, a program of the Rahu Institute, including:

- New realtime low-cost metering for grid-tie school systems
- Professional Development for teachers – workshops
- Benefit to Utility sponsors.

Utilities participating in the program include: Palo Alto, Lodi, PG&E, Imperial Irrigation District, Pasadena, Anaheim, San Diego REO, Truckee Donner. The program is very modular and is focused on training teachers, igniting their interest in energy education by building projects. It works.

More information online at [www.solarschoolhouse.org](http://www.solarschoolhouse.org)

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### Les Nelson Western RE group John Graham

Ecos Consulting

### **Joint Purchasing Options**

Les and John gave a brief presentation on pending project potential and options for joint purchasing for the munis.

The purpose of their presentations was to continue to explore of the potential to aggregate projects and gain the benefits of bulk purchasing. – lower costs, streamlined procurement process, stable market. Les, with SMUD support, shared the results of a phone survey to all the Utility managers in California and identified up to 4MW of projects. Additional discussion on the difficulty of the different procurement requirements of each city, or utility, and the limited jurisdiction of potential buying agents (eg. SCPPA, or NCPPA). While 4 MW is large in some regard, it is small otherwise. Perhaps better to widen the potential market to include other buyers, such as – universities, schools, municipalities (with their own utility), new home builders, etc.

John shared some experience of conducting bulk purchasing for programs in the Northwest. He described the option of creating a non-profit to serve all the potential markets – creating standards, issuing bid for product and services on behalf of the members.

Other joint purchasing options **include:**

- California Power Authority – CPA – currently issued a bid for \$/kWh performance contracts, up to 4 MW, for state owned facilities. These include: UC and Cal State universities, and many other buildings. The bids are due August 5<sup>th</sup>.
- Federal GSA – for federal facilities only. This program has not been proactively maintained such that prices are no better than can purchase otherwise, though it may be a streamlined procurement method.
- WAPA – Need to research more. Talk with Randy Manion. Apparently there is potential here for bulk procurement.

### **Next Meeting**

Proposed for October 18<sup>th</sup> in San Francisco. More details to follow.

In conjunction with Solar Power 2004, a national solar energy conference organized by Solar Electric Power Association and Solar Energy Industry Association.

[www.solarpower2004.com](http://www.solarpower2004.com)