

**MEETING NOTES**  
CALIFORNIA PV UTILITY (CPVU) MANAGERS MEETING  
February 1, 2006

**Introductions**

On February 1<sup>st</sup>, 30 representatives from 13 utilities, the CEC and invited guests convened in San Diego to discuss PV program issues. Additional information on the meeting can be found on the California Solar Center CPVU page <http://www.californiasolarcenter.org/cpvu/cpvu.html>.

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**Ann Peterson**, project manager for the *CEC PIER Research program* opened the meeting with an updated on PIER's **Zero Energy New Home (ZENH) Program**. Three ZENH contracts have been awarded to Architectural Energy Corporation (AEC), Powerlight, and Global Green. Ann presented the status and goals of the two projects currently underway in this research project.

AEC's project will develop a utility market ZENH model in which AEC is working with SCE to quantify the utility benefits of ZENH. AEC is working with Pardee Homes in Santa Clarita and has met 4 of the 4 ZENH goals of designing a home that is 25% better than Title-24, has 1 kW peak demand, and reduces the energy use in the home 75%. However, the ZENH package of energy efficiency measures and PV costs exceeds the ZENH goal of costing less than \$5,000.

Powerlight project is working on a SFD and multi-family projects using a turnkey PV installation model (Powerlight provides a turnkey PV install to the builder). Powerlight will be working with Suncrest Homes in Brentwood on SFDs and is looking for an apartment builder for their multi family project.

Global Green is working on a ZENH Affordable Housing model and has two multifamily projects. Global Green has found it difficult to meet the >25% better than Title-24 goal, partly because of the units don't have AC which is not recognized by Title-24 compliance tools and partly because the tenants are low energy users. Green is using state and federal tax credits to finance 80-90% of the ZENH costs. are paid for due to various tax credits and incentives. They have also encounter issues regarding metering of these types of systems (Multifamily housing). Current utility protocols require a separate meter for each housing unit, and a separate inverter/disconnect for each unit thereby raising costs for the projects' PV systems. SDG&E is looking at adapting their protocol to make it easier to interconnect the projects' PV system. Ground breaking for the projects is scheduled for Spring 2006

[2008 Title-24 Tier2 standard]

Ann also reported that PV would be included in 2008 Title-24 building standards (**'Tier2'**). As currently envisioned, Tier 2 will:

- Be an voluntary, elevated Title-24 compliance option
- Include PV and a set of additional Energy Efficiency Measures

- Provide a higher PV incentive.

Details will be worked out via the Title-24 workshops and coordinated with the California Solar Initiative (CSI) effort. First workshop scheduled for February 22-23, and again in April. Signup on listserv to get updates

<http://www.energy.ca.gov/title24/2008standards/index.html>

Presentation posted online

<http://www.californiasolarcenter.org/pdfs/utility/2006.2.1-CPVU-AnnPeterson-ZENHResearch.pdf>

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**Martin Bailey** of Roseville Electric then gave an overview of **Roseville BEST PV Residential New Construction** program. Under the BEST program, 20% of the new homes built in the Roseville will be required to include solar and high efficiency features. Roseville Electric is developing the BEST program in response to anticipated new growth and because they thought SB1 was not reliable, since it was optional, to achieve goals of energy efficiency in new home construction. In addition, Roseville is developing BEST to:

- Reduce peak impacts of future home building;
- Brand new homes built in Roseville; and
- Aid City's economic development efforts by attracting desirable businesses through highly efficient housing.

The BEST program builds on an existing 'Development Agreement' between the City (Roseville Electric) and local builders that requires SEER 15/EER12 AC in new developments. To achieve the 20% solar goal, Roseville plans to fund up to 50% of the cost of solar using a combination of public benefits and long-term resource funds. In addition, as a city department they are working with the city's building department to cut time out of application process – 1-2 months here and there. Currently they are interviewing builders, PV suppliers, city permitting, etc. on their response to the program. 15 of 16 of the builders contacted indicated that would rather do 100% of a community solar vs. 20%, want a long-term program; believed that Roseville's marketing was beneficial; knew that solar was coming and wanted to learn more about solar and how they could use solar to differentiate themselves in the market; and were evenly split on whether they preferred a turnkey PV installation or preferred using their own subcontractors to install PV.

Although individual builders were supportive of the program, the local building association has expressed strong opposition to the program. Interestingly, PV suppliers were unwilling to discuss long-term pricing of their products.

- Initially the City council gave an OK to the program, but reconsidered, forming a "Citizens Committee" to review the program. The committee includes members from the BIA, chamber of commerce, regulatory agencies, etc. (9 members). The intent is to make the BEST program a City policy, removing it from department politics and making it a standard not a mandate. The committee is expecting to have its recommendations ready

by July. Staff plans to launch the program upon receipt of the committee's recommendations. In the mean time, staff is addressing several issues, including

- How to address affordable housing
- What sort of incentive level is proposed in the BEST program?
- Local production to guarantee supply? Rooftile PV specifically. Still an anomaly to regular line. Chance that the integrated modules will raise price.

Interestingly, the City's avoided cost is higher than the revenue lost per PV kW. As a result, 100% solar homes would NOT be a problem for the utility due to lost revenue

He also reviewed Roseville's solar efforts to date, noting that approximately 400 kW of solar has been installed in Roseville, including 100kw of residential retrofit and 200 kW new construction.

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**Steve Yatsko** of San Diego Gas & Electric gave an overview a proposed project to develop a 300 – 900 MW+ concentrating solar using **Stirling Engines technology** in Imperial Valley. The project will be deployed in 500 kW blocks with up to 300 MW installed in the first 18-month phase. Local manufacturing will be part of the process. SES still needs to secure capital, assemble a team to put it all together, secure transmission and find a site. Although several hurdles must be overcome, the promise of the economies of scale of the project (and SCE's proposed project) could dramatically reduce the cost of this technology. First installs are scheduled for late 2008.

Presentation posted

<http://www.californiasolarcenter.org/pdfs/utility/2006.2.1-CPVU-SteveYatsko-StirlingProject.pdf>

(SUNRISE Powerlink - <http://www.sdge.com/sunrisepowerlink/index.html> )

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## ROUNDTABLE DISCUSSIONS

**Mike Keese** and **Jon Bertolino** (SMUD) provided updates on SMUD's current solar programs. Mike reported on SMUD's new Zero Energy Home (ZEH) project which incorporates night ventilation and a new low profile (< 2") roof mounted PV product from BP Solar. Jon noted that ZEH is a marriage of EE and PV, and SMUD is accelerating that marriage by working with DOE and NREL via the Building America (DOE/NREL) through a Cooperative Research and Development Agreement. Both Mike and Jon urge attendees to contact NREL and learn how they can access the NREL's and Building America's resources

For further information, contact: Ren Anderson (303) 384-7433  
[http://www.eere.energy.gov/buildings/building\\_america/about.html](http://www.eere.energy.gov/buildings/building_america/about.html)

**Lindsay Joye** (City of Palo Alto) provided a report on the City's solar activities, noting that large city owned solar system is up for council approval tonight.

**Natalie Osborn** (SD Regional Energy Office) reported that they have funded all the projects on their SGIP wait list and will begin accepting new reservation Feb. 10<sup>th</sup>.

**Sara Birmingham** (PG&E) reported that PG&E has 45 MW of projects on their SGIP wait list, but anticipates being able to fund all the projects. PG&E is quickly approaching their net metering cap and is developing an in-house policy to address this. They signed up their 10,000th solar customer at 10am 2/1/06.

**Ken Parks** (SDG&E) reported that state legislation raised the net metering cap to 50 MW in SDG&E territory last summer.

**Thomas Honles** (LADWP) reported that a new city policy requires that Neighborhood Councils must approve all new City programs. A new PV program will be launched next month after going through the neighborhood council review. In the mean time, several City owned PV projects are underway.

**Leslie Brown** (Silicon Valley Power) reported that they have restarted their PV incentive program: \$3/watt up to 3kW, \$50,000 total, and will be asking their board for additional \$50,000 in program funding. They encounter some problems with a new city demonstration project. They also have initiated a Green Power program using 3 Phases and used the program to pay for a customer installed solar project (2-3 years 5 cents per kWh).

**Mike Jaramillo** (IID) reported that IID is experiencing a boom in new construction in the Coachella Valley area, and that PV activity has increased in the past year.

**Tor Allen** (Solar Schoolhouse)

- Passed out copies of 2006 calendar and Your Solar Home guidebook.
- Sponsor a teacher or more in your area to attend SIE2006 – [www.solarschoolhouse.org](http://www.solarschoolhouse.org)
- Cal Poly Solar Decathlon project – opportunity for utilities to support project for 2007 or Center for Sustainable Architecture. [http://www.eere.energy.gov/solar\\_decathlon/](http://www.eere.energy.gov/solar_decathlon/)
- Billing data/information – monthly rollover via 12 month true up. Presenting information in effective manner (vs. PG&E 10 page monthly report). Continue with survey and present next time? Yes.

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**Jeff Wilson** (California Energy Commission) provided an overview on the **California Solar Initiative (CSI)**. The CSI is a 10 year, 3 \$Billion, program to install ~ million solar rooftops in California. Many details of the program will be defined during the transition year of 2006, with input from a number of public workshops. After making his presentation, Jeff responded to several questions from the group. In general, Jeff noted that a series of public workshop would address major issues, including:

- Utility owned PV systems qualifying for funds
- 3<sup>rd</sup> party admin for existing residential

- Budget flexibility (i.e., can the whole 10 year budget be spent in first 5 years if demand allows this?)
- Marketing/education plan due to the CPUC on March 1<sup>st</sup>
- Energy Audit requirements for commercial solar projects
- Application/reservation project fees
- Whether gas customers in Muni territories will be eligible for CSI incentives.

Jeff also thought that SB1 would be re-introduced, although the CEC and PUC aren't waiting for it to move forward on the CSI.

Several suggestions were offered by the group including:

- Providing more help to retrofit customers
- Reviewing New York's PV program. <http://www.powernaturally.org/>

Tim Tutt noted that the CEC was very interested in working with the Munis to ensure that there was a seamless statewide effort on residential new construction.

[http://www.cpuc.ca.gov/static/energy/051214\\_solarincentive.htm](http://www.cpuc.ca.gov/static/energy/051214_solarincentive.htm)

Presentation posted online

<http://www.californiasolarcenter.org/pdfs/utility/2006.2.1-CPVU-JeffWilson-CSI.pdf>

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**Tom Hoff** (Clean Power Research) gave a presentation on a PIER/SMUD sponsored project to develop a utility-sponsored performance based incentive (PBI) program for commercial customers who purchase photovoltaic (PV) systems. This project developed a theoretical basis for a proposed PBI design methodology and structure, covering the rate per kWh of production, the variation of this rate over time, and the duration over which the payments are made. The methodology developed in this paper may be used to develop PBI programs at any utility Draft paper posted at

[http://www.californiasolarcenter.org/cpvu/PBI\\_Design\\_1-27-2006.pdf](http://www.californiasolarcenter.org/cpvu/PBI_Design_1-27-2006.pdf)

Powerpoint presentation posted

<http://www.californiasolarcenter.org/pdfs/utility/2006.2.1-CPVU-TomHoff-PBI-Design.pdf>

The group posed several questions for Tom, including:

- Why PBI? Incentive program gets what they pay for. Presented from Customer perspective and Incentive program perspective.
- Is it marketable to customer?
- Can we repurpose panels? i.e. Does it need to be all new equipment since focus is now on performance.
- If only a ten year program, then how is it assured that performance will occur if starting in year 9 and monitoring ends in year 10?

- How to incorporate supply side information (i.e. Cost of PV modules)
- Rate schedule will determine (as it does now) the degree of additional savings (or value) that the customer sees.
- Does it take into account the stock market or what returns are otherwise? No, but it could
- Admin costs are not included in this analysis.
- Add ability to sell RECs. The new meter required would help facilitate this.
- RECs need to be certifiable. (reference Green-e CRS). Some concern that a self-read & report process would not be certifiable.
- Once PV system is installed and working well, then it will continue to perform.
- Add better feedback loops to customer via utility data.
- New York – satellite data weather compared to PV performance on monthly basis. Then send email if Performance Index is down. This is a new tool that Tom is working on with NYSEERDA.
- Taxes were not included in this model.
- Assumes a given rate tariff. – TA – use lowest tariff to create base structure. Then if customer can extract greater return or value, via loadshifting and TOU rates, then great.
- Structure should be indifferent to waiting. i.e. No incentive to wait to buy.
- “Cost-effectiveness” needs to define.
- Will PBI be adjustable if different orientation? I.e. Greater value to utility.

### **Additional items discussed...**

Next Meeting Proposed for June 2006 timeframe with PG&E/Pacific Energy Center [Sara Birmingham] as the host utility. Pasadena WP offered to host the next So. Cal meeting in the fall. Potential topics:

- a. Someone from Senator Murray’s office to talk about SB1
- b. CMUA
- c. CSI
- d. SHW – pilot San Diego, wants feedback. Public workshop late February/March. Res and commercial.
- e. Comparison of net metering among utilities.
- f. Will there be a Solar Forum to coordinate with?
- g. Coordinated training efforts?

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