

MEETING NOTES

CALIFORNIA PV UTILITY (CPVU) MANAGERS MEETING

January 30, 2007

Introductions

On January 30th, 25 representatives from 14 utilities, NCPA, the CEC and invited guests convened in Glendale 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>

This working group meeting was intended to address issues & questions regarding the design and implementation of solar programs, as defined by SB1 and the California Solar Initiative (CSI). Discussion will result in the drafting of a "Best Practices" Handbook for municipal utilities enhancing existing, or creating new, solar programs in their respective territories. Opportunities for collaboration and leveraging of common tools will be explored.

New Solar Home Partnership (Bill Pennington – CEC)

Refer to powerpoint posted online at

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

NSHP Guidebook and supporting materials posted online at

<http://www.gosolarcalifornia.ca.gov/nshp/index.html>

Bill reviewed the new New Solar Home Partnership program that the CEC is administering in 2007. In addition, there were a list of SB1 requirements of the CEC that proved confusing to many in the room.

Discussion surrounding NSHP.

How can the munis use this program?

The NSHP program can be used by munis right now, if desired. That is to say, the forms, requirements, handbook, etc. can be adopted for use in a local area. The main difference is that the local muni would administrate the program: taking reservations, paying the incentives, and conducting any site visits.

What database will be used?

At the moment, an inhouse database is to be used. CEC is also looking at utilizing PowerClerk.

Who administrates the NSHP for IOU territories?

Currently the CEC is administrating the NSHP program, though is exploring outsourcing the program to 3rd party administrator, or to the respective utilities.

Both the NSHP(CEC) and CSI (CPUC) programs use a calculator to determine an Expected Performance Based Buydown (EPBB) design factor. The design factor includes shading and orientation effects and is used to determine the incentive for a given solar system. What are the differences between the two calculators?

The CPUC (CSI) was directed to view west and south equally! This is not easy to do. This dilemma arose due to the stated intent for the CSI program to help reduce peak loads, which tend toward summer afternoons. For a PV system to provide maximum peak reducing capabilities, it would face southwest or west. For the system owner, the production is best if facing due south. Thus the conflict or identifying the optimal orientation for which to receive maximum rebate.

There has been much debate regarding the EPBB (CSI) calculator through the CPUC CSI proceedings. It continues to evolve, though making it difficult for solar installers to sell systems. The EPBB Calculator is an online tool, that uses NREL's PVWATTS to determine a design factor. More information on the EPBB calculator can be found online at <http://www.csi-epbb.com/> . Work to integrate the EPBB calculator into PowerClerk is underway.

The CEC PV Calculator is a spreadsheet based tool, using open source algorithms developed by Bill Beckman of University of Wisconsin Solar Lab. More information is online here <http://www.gosolarcalifornia.ca.gov/nshpcalculator/index.html>

Will there be CAD program or similar that can be used for community layout analysis?

Not clear. Though the CEC PIER Research program just approved a contract with National Renewable Energy Labs (NREL) to develop tool to evaluate the impacts of PV on rooftops of new communities.¹ⁱ

Expected new home construction in various communities? Or is there data projecting where new construction is expected in the next 10 years?

N/A (insert g.rose data)

Eligible Equipment – PV Modules. Will this change from the past list?

YES

Asking mfrs for data they haven't provided before. The new requirements are meant to bring the program in line with international standards for PV equipment. Data provided from the manufacturers without testing, will suffice in 2007, though testing will be required in 2008. Refer to the NSHP handbook for more details. Due to lack of adequate data for BIPV products additional testing for the BIPV configuration will be required. Due to the dominance of BIPV roofing tiles in new construction projects, there is concern

¹ US DEPARTMENT OF ENERGY, NATIONAL RENEWABLE ENERGY LABORATORY. Possible approval of Contract 500-06-028 for \$450,000 with the Department of Energy, National Renewable Energy Laboratory to research and develop software to provide rapid solar energy performance analysis of new homes. These products - Building Energy Optimization Software For California (BeOpt CA), and Subdivision Energy Analysis Tools (SEAT) will provide data for California planning jurisdictions, utility districts, housing developers, land use planning consultants, residential building designers and the Energy Commission's Title 24 development staff. (PIER electricity funding.) Contact: Norm Bourassa. [Agenda Item for Jan. 31st 2007 CEC Business meeting] http://www.nrel.gov/buildings/energy_analysis.html

that these uncertainties in the testing requirements for BIPV products will cause unnecessary delay in securing funding for projects.

HERS Training – CEC will be working to offer training to the 1200 raters in the state. HERS = Home Energy Rating System. HERS raters are active in establishing Title-24 compliance for new and retrofit projects, and in providing ratings for Energy Efficient Mortgages (EEMs).

PG&E will provide HERS PV training at the Stockton Training Center (for Northern region)

Energy Efficiency Requirements for NSHP

TIER 1 – 15% beyond T-24. Represents level required by current IOU New Home EE programs. Eg. California Energy Star New Homes Program

Performance Option

http://www.pge.com/res/energy_tools_resources/efficient_new_homes/info_for_builders/rnc_eso.html

Prescriptive Option

http://www.pge.com/res/energy_tools_resources/efficient_new_homes/info_for_builders/rnc_pc.html

TIER 2 – 35% above T-24. Preferred level, to achieve zero energy home status and positive cash flow immediately. The CEC is working with IOUs to modify existing EE programs to match this level. PG&E has filed with CPUC, waiting on decision to proceed. The additional incentive for builder/homeowner is the extra rebate incentives available from the EE utility programs, and that positive cash flow will occur.

T-24 2008? – The current program is based on 2005 Title-24 levels. With tighter standards going into place next year (2008), the CEC will revisit the energy efficiency requirements for the New Solar Home Partnership again in 2008.

Measures by climate zone? –Ken Nittler, author of Micropas T-24 compliance software, has provided analysis assistance to PG&E, determining which measures, per climate zone, would help achieve the NSHP EE requirements. Additional analysis is needed. This data should be available soon.

POWERCLERK (EPBB ETC.)

Online Administration Tool – PowerClerk

The utilization of a common database tool, through all solar programs in California, has some promising benefits, including: reduced staff time for administration, automatic reporting features, market data posting online for customers, and even performance indexing. SMUD has contracted with Clean Power Research to implement PowerClerk tool. The CSI Program Administrators are also using elements of PowerClerk.

For Munis, developing common templates for program administration will result in lower cost of use. Jon Bertolino (SMUD) shared SMUDs experience with PowerClerk thus far. Nathalie Osborn (SDREO) and Sara Birmingham (PG&E) provided the CSI-PA experience to date.

[Please review the PowerClerk presentation from the last meeting (10/18/06)
http://www.californiasolarcenter.org/pdfs/utility/2006.10.18_CPVU-PowerClerkOverview-TomHoff.pdf]

(JB - SMUD)

Goals:

- To have standard set of processes.
- Potentially integrate with www.gosolarcalifornia.ca.gov , adding menu buttons for SMUD, Roseville, and other munis.
- To have PowerClerk fully enabled by January 1, 2008.
- Minimize paperwork
- Biggest cost of current solar program administration is 'rework' ie. having to send paperwork back for incomplete data. The hope is to establish quality control in application process. Reducing or eliminating 'rework'.
- Provides market data to buyers.
- Realtime reports for both consumer and administrative audiences.
- SMUD will use the performance index feature using satellite weather data. (CSI – "down the road").

Energy Solutions is the project mgr for PowerClerk. They have experience administering and implementing utility energy efficiency programs. Based in Oakland, CA.
<http://www.energy-solution.com/> [Ted Pope is the contact]. For those that wish to completely outsource administration of their Solar Program, Energy Solutions may be a candidate for handling this task.

EPBB calculator (implemented by AESC www.csi-epbb.com) can be used by Munis, if desired. (EPBB = Expected Performance Based Buydown). PowerClerk also has its own built-in EPBB calculator available as an option for munis.

Will PowerClerk merge with CEC NSHP program? There has been some discussion. The CEC also is tasked with gathering annual solar program progress statewide. Greater use of PowerClerk among utility programs will ease this task.

Capacity within Clean Power Research to manage the increased activity? Can CPR handle the growth.

Ultimately PowerClerk needs to be integrated with utility business practice. (PWP (MM))

What is the COST? Standardize as much as possible to help economize. Pricing structure will come as standard forms are developed. Integrating with each utility.

Update [2-27-07]: Clean Power Research is working overtime to adapt PowerClerk for use in the CSI program. SMUD, who has contracted with CPR for the full suite of PowerClerk features, will then start using the CSI version of PowerClerk (April 07). After this time, a price package for other muni electricians wishing to adopt PowerClerk, will be developed (est. May-June 07). It is expected that 3-4 iterations of PowerClerk will be rolled out during the course of the year for CSI use.

PowerClerk Users Group –

Meet with Tom Hoff. Via conference calls. To capture needs. And inputs from the end-users. This was suggested at the 1/30 meeting. We will monitor the progress of the CSI program in adopting PowerClerk.

DRAFT BEST PRACTICES FOR Muni Solar Programs – to help address grey areas of SB1.

AFTERNOON SESSION

Warranty? System warranty is now required to be 10 years. The CEC has established standards defining what the warranty should cover. Enforcement of the warranty requirement can be done by requiring proof of warranty the interconnection or incentive application process.

Marketing Muni effort – Desire to collaborate and develop common marketing materials and activities that can be used by all and will provide benefits across service territory boundaries. Note: the CSI Marketing and Outreach element is delayed until the later part of the 2007. It is still unclear what activities CSI will conduct as part of Marketing & Outreach. The Munis have the opportunity here to take a leading role in shaping M&O for solar in California.

Metering issues (mk, mb) – Metering requirements are an ongoing debate within the CSI program. Monitor the developments.

Collaborating on New Home Solar program – The opportunity to utilize the CEC's NSHP program structure provides a ready-to-use program for munis wishing to offer incentives for new construction. The NSHP has more requirements of the builder to participate; for example, requiring minimum levels of increased energy efficiency to participate. SMUD and Roseville, the munis with the most active solar new construction programs were hesitant to embrace the new program. Current Roseville/SMUD practice is to offer case-by-case incentives for builders wishing to include solar on their homes, while the NSHP approach is a formula for calculating incentive levels. For many munis in areas where new home construction is projected over the next ten years, tailoring a portion of the solar incentive program toward new homes, is a strategy that will lead to greater success of the overall program. Indicators from throughout the state show that builders are moving toward greening their homes, adopting zero-energy home design packages, to help differentiate themselves and meet the needs of the marketplace. Due to efficiencies of volume construction, the cost of installation is typically 15-30% less than solar retrofits, thus requiring smaller incentive levels. The biggest barrier is getting the builder through their first project.

Training – An ongoing role for solar program administrators, is to provide training opportunities for contractors, utility staff, fire service, and building department inspectors. Barriers remain at the building department level that add unnecessary and inflated costs of installing PV systems. A collaborative effort to providing training throughout the state should be explored. SMUD has co-sponsored the development of training materials for “Fundamentals of Photovoltaics for the Fire Service”. The Fire

Service training materials are on CD. Rahus, with SMUD permission, will explore putting this online.

SUPPORT # - Support levels for customers wishing to install solar on their home or business, vary from region to region. A state-wide 800# support line will be explored.

PowerClerk Processing - some utilities expressed interest in outsourcing the complete administrative function of their respective solar incentive program. Explore who can provide this service. Energy Solutions is one candidate.

Grey Areas

TOUs - is this required for all utilities?

PURPA (EPACT 2007 as of Feb. 2007) requires that utilities must offer a TOU rate to every customer. (confirm this)

IOU – CSI/SB1 says all solar rebates must have TOU rates.

POU – not a requirement (per SB1)

REC ownership (for Munis?)

Palo Alto – is following CPUC. Others are still retaining it in language of rebate application. Still needs to explore, but not a burning issue. Since the markets are undeveloped.

LADWP is looking at offering higher rebate if LADWP gets the REC. (need to confirm).

Counting toward RPS still to be determined. WREGIS coming online in June 2007.

<http://www.westgov.org/wieb/wregis/>

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

What are the goals of the incentive levels? To spend the funding or to achieve MW installed. SB1 does not specify MW targets for munis, though the message from Ed Randolph (legislature) was that this can be legislated if a less-than-stellar effort is put forth by utilities. Refer to the CSI handbook for reasoning in setting the incentive levels.

Performance Meters – refer to CSI ongoing debate regarding metering.

Revenue Grade Socket meter or inverter meter ok? – CSI reference.

How much is budgeted for marketing etc.? (see LJoye table)

What are the minimal requirements to meet SB1? An outline is desired illustrating minimum level requirements for a SB1 compliant program.

Public Hearing/Proceeding – what qualifies?

- (Anaheim) Public utility board meeting. Open to the public. (minimal)
- (Silicon Valley Power) City council meeting. Eg. Rolling out green program.
- (LADWP) stakeholders meetings planned (Feb 28, 2007). Present proposed changes to meet SB1. Details, funding from where, funding going where.

Funding for Solar Program to come from Energy Cost adjustment. (ie. fuel surcharge). Goal to rollout new program on July 1st 2007

- (SMUD) will hold stakeholder meetings. Rollout on Jan. 1, 2008 – in line with fiscal year.
- Opportunity for marketing your program. Also providing a venue for public to make comments.

Can 2007 program activity count toward 2008+ goal? YES

Funding – Public Benefits or special rate assessment, or LADWP approach (Energy Cost adjustment)

Use 2006 retail sales as benchmark. This is a big issue. And 1st priority – next 30 days. LJoye take the lead. Over 10 years proposal. Volumetric drop is preferred as this allows market connection.

Rebate reduction & how much? – If adopting a volumetric block approach, suggest making the first 2 blocks larger (greater MW) than CSI, thereby allowing higher incentive levels over the next few years to allow for silicon cell production capacity to increase and begin to achieve downward price direction. (need several options for individual utilities to consider). CSI has created several different categories: residential retrofit, commercial new or retrofit, non-profit, affordable housing. In addition, a different incentive path is available for new residential construction, through the CEC's NSHP Program.

Solar Thermal – is this part of the program? Solar water heating is part of the CSI program. SB1 does not clearly state if SWH shall be part of the muni programs. The CPUC approved a SWH pilot program for the San Diego region as of 2.15.2007.

Reporting – what sort?

CEC – requires annual reporting providing program status: # systems installed, kW installed, amount of incentives provided.

Hetch Hetchy – do they need to have a solar program? ???

Utility owned? Does this count? If city owned?

Add comments from various utilities

There are several grey areas regarding utility ownership of systems that are not clear in SB1.

Must be on customer bldg for customer loads.(per SB1)

Lease systems Ok

Community Solar Program – does it count? Eg. Customer contributions help fund an installation on community building – eg. School, community center, zoo, etc. (explore further)

Must offer Residential AND commercial rebate? YES per SB1

Develop legislative response.

Do city owned facilities qualify?

Affordable Housing Program? Is it required? NO, but it is part of CSI and NSHP.

What qualifies as administrative budget and marketing budget? Ie “what costs can be counted?”(explore further)

What CEC determination for requirements for POU program?

BEST Practices

Interconnection agreement

Building permits

Billing

Customer bill

Rahus – put up a password protected area for posting and sharing documents.

Zeroing out the bill – just let it rollover (legislation clean up bill). This will allow billing system to handle NEM. And reduce administrative costs. This issue was raised at earlier CPVU meeting.

Fire Department training - SMUD fire dept training disc. Rodney Slaughter/CALSEIA. (Les Nelson or Jon Bertolino). Rahus to explore putting information online.

Contractor requirements – C46, or other requirements, NABCEP certification. Utility consensus on what is needed. What organization can lead this?

Find a contractor – www.findsolar.com this has proven to be a useful tool. Supported by SEIA, ASES, etc.

NSHP – can munis use this program. Or SMUD Roseville model. BEST program. \$4/watt. Reference BEST program (Roseville). See October 16th CPVU meeting for report. www.californiasolarcenter.org/cpvu/cpvu.html

Where to start the incentive structure? What rate?
(SMUD) volumetric drops. (total vs res/commercial).
Best to design volumetric drop.

Solar Santa Monica Model – have contractors bid to participate. (see presentation information on line at <http://www.californiasolarcenter.org/solarforum.html>)

Other Solar City Model (Portola Valley) – driven by solar contractor Solarcity.com

Residential Tax – AMT ok?

Next meeting
SMUD,
TID
LODI

Public Utility SB1 Solar Program Budgets

Source: CMUA

FY 05-06

SB1 TOTAL for POU's
\$ 784,000,000

MEMBER	KWh Sales	% of TL POU kWh	Budget for SB1
1 ALAMEDA	368	0.66%	\$ 5,165,467
2 ANAHEIM	2495	4.47%	\$ 35,021,306
3 AZUSA	233	0.42%	\$ 3,270,527
4 BANNING	140	0.25%	\$ 1,965,123
5 BIGGS	25	0.04%	\$ 350,915
6 BURBANK	1065	1.91%	\$ 14,948,974
7 COLTON	304	0.54%	\$ 4,267,125
8 CORONA	200	0.36%	\$ 2,807,319
9 GLENDALE	1088	1.95%	\$ 15,271,816
10 Gridley	31	0.06%	\$ 435,134
11 HEALDSBURG	77	0.14%	\$ 1,080,818
12 IMP IRRIG DIST	2864	5.13%	\$ 40,200,809
13 LASSEN MUD	137	0.25%	\$ 1,923,014
14 LODI	439	0.79%	\$ 6,162,065
15 LOMPOC	131	0.23%	\$ 1,838,794
16 LOS ANGELES DWP	22306	39.94%	\$ 313,100,297
17 MERCED I D	319	0.57%	\$ 4,477,674
18 MODESTO I D	2394	4.29%	\$ 33,603,609
19 NEEDLES	59	0.11%	\$ 828,159
20 PALO ALTO	950	1.70%	\$ 13,334,766
21 PASADENA	1178	2.11%	\$ 16,535,109
22 PITTSBURG	16	0.03%	\$ 224,586
23 REDDING	729	1.31%	\$ 10,232,678
24 RIVERSIDE	1776	3.18%	\$ 24,928,993
25 ROSEVILLE	1024	1.83%	\$ 14,373,474
26 SANTA CLARA	2521	4.51%	\$ 35,386,257
27 SMUD	9922	17.76%	\$ 139,271,100
28 TRINITY COUNTY PUD	79	0.14%	\$ 1,108,891
29 TRUCKEE DONNER PUD	122	0.22%	\$ 1,712,465
30 TURLOCK IRR DIST	1588	2.84%	\$ 22,290,114
31 UKIAH	109	0.20%	\$ 1,529,989
32 VERNON	1165	2.09%	\$ 16,352,634
=====			
	55854	100.00%	

(source: Eric Klinkner, Pasadena W&P, 1/4/07, eklinkner@cityofpasadena.net needs another edit. Some retail POU's missing. XLS spreadsheet titled "Percent of load with POU share of SB1.xls")