

**Minutes of Local Codes Study Panel Stakeholders Meeting
Monday, December 17, 2007 2:00 pm ET - 3:30 pm ET**

Hosted by Panel Members and Key Players:

Jerry Ventre (Moderator, FSEC), Gobind Atmaram (FSEC), Stephen Barkaszi (FSEC), Bob Reedy (FSEC), Bill Brooks (Brooks Engineering), Jane Weissman (IREC), Chuck Whitaker (BEW Engineering), Larry Sherwood (Sherwood Associates). (Colleen Kettles was not able to participate due to illness.)

Participants

Present:	Sara Baldwin	Utah Clean Energy
	Thomas Basso	NREL
	Bill Brooks	Brooks Engineering
	John Broughton	NRGmanager
(substitute)	Kathleen Cunningham	Renewable Energy Long Island
	Joel Davidson	SOLutions in Solar Electricity
	Mark Dougherty	LIPA
	Michael Gumm	SolarPower Restorations Systems
	Smita Gupta	California Energy Commission
	Carl Lenox	SunPower Corporation
	Don Massa	Conergy
	Keith McAllister	NCSC
	Stacy Miller	Minnesota Dept of Commerce
	Erika Morgan	Citizenre Corporation
	Colleen O'Brian	BEW Engineering
	Ron Phillips	Solar Unlimited Network
	Bill Reaugh	Old Country Roofing
	Bob Reedy	FSEC
	Dona Stankus	NCSC
	Mike Taylor	Solar Electric Power Assoc
	Mark Thornbloom	Schuco USA
	Linh Truong	NREL
	Keith Vinchkoski	Apollo Solar
	Jane Weissman	IREC
	Fred Widicus	Systems & Renewable Energy Consult
	Rob Wills	Citizen RE

1. Introduction

Jerry Ventre opened the meeting and gave a brief introduction for the three topics of the Local Codes Study Panel: (i) Fast Permitting, (ii) Solar Access and Solar Rights, and (iii) High Wind Loads and Model Codes. He also introduced the Panel members and other presenters, and presented the Study schedule. He referred the stakeholders to the availability of the presentation slides for the three topics on the Solar ABCs website and described the means for them (including the quarterly stakeholders meetings and website

forum) to provide their input to the Study topics. Jerry mentioned Colleen Kettles's inability to present the material on Solar Access and Solar Rights and that he would make the presentation in her absence.

2. Roll Call

Larry Sherwood took the roll call of the Study Panel members and stakeholders present.

3. Fast Permitting (Study Topic 1)

- Gobind Atmaram and Bill Brooks made a joint presentation on Fast Permitting. Gobind Atmaram described the approach based on the FSEC *PV System Design Review and Approval Process*. Bill Brooks presented the approach based on *Inspector Guidelines for PV Systems*.
- Gobind Atmaram described the study schedule with a completion date of May 2008, pointing out that the stakeholders input is required preferably by January 15, Table of Contents by January 31, Draft Report to be done by March 31 and Final Report by end of May.
- Meredith McClintock (Ready Solar) mentioned that they have been using the *Inspector Guidelines* sample form to help customers by pre-filling out the forms with their standardized systems, and it has been really helpful.
- Rob Willis (Citizen RE) and others (Renewable Energy Long Island) pointed out that the two approaches presented by Atmaram and Brooks may not be combined, since there seemed to be quite a distinction. One is essentially a certification program and the other one is a documentation program. In the FSEC approach, the burden rests with the third party and the local official delegates checking for the requirements to third party certification (as long as the solar system comes in with the stamped third party document, everything is ok), whereas in the Brooks approach, the burden of checking the requirements is with the local official. To do the certification, a certification body is needed, and if that's not handled well that could mean added cost and delay. So, the two are two very different approaches and we would end up with either one or the other approach.
- The Study Panel members (Brooks, Atmaram and Barkaszi) felt that in spite of the stated procedural differences, there was sufficient similarity between the two approaches that there was a possibility of combining them. Bill Brooks mentioned that the FSEC approach was put together with quite a bit of oversight and involvement from the FSEC staff and they worked very closely with suppliers of the systems, reviewing and going through the details, and that he really likes the details in the FSEC approach. But, the local code officials may not have that level of expertise for review (some of them are pretty knowledgeable, but they're not solar engineers) and even *Inspector Guidelines* would on some level have a tendency to overwhelm the inspectors, so the intent is really to put together a relatively simplified package.
- The Study Panel would look into this issue more critically in view of the stakeholders' comments and consider two options: (i) selecting one approach over

the other, (ii) hybrid combination of the two approaches possibly with best elements of each to reduce the delay and cost of permitting.

- Rob Willis (Citizen RE) commented that both *FSEC PV System Review and Approval* and *Inspector Guidelines* were apparently put together by engineers, and as such they both lacked in the graphics quality. Bill Brooks responded that *Inspector Guidelines* was a concept and there was not a lot of attention given to perfecting it, and this is really a great opportunity to update a variety of things.
- Rob Willis (Citizen RE) mentioned that as the sales in our industry increase, utilities and electric utilities are going to find themselves quite overwhelmed if they run at the same level of inspection and requirements; there has to be a different way of doing field inspections and this is a good step in that direction. Gobind Atmaram responded that as the industry grows and more and more systems are installed, the inspectors will become more familiar and will be able to do the process efficiently and rapidly and also there will be more people coming into the business, so we can hopefully pick up a larger volume without much delays.

4. Solar Access and Solar Rights (Topic 2)

- Jerry Ventre presented the material on behalf of Colleen Kettles on Solar And Solar Rights.
- Mark Thornbloom (Shuco, USA) mentioned that there may actually be a window of opportunity, when it comes to homeowner and condo association, that operate "above the law". Jerry Ventre responded that it was a state-by-state problem, and in Florida it went all the way to the Florida Supreme Court and they made a ruling that basically said that this wasn't covered by statutory law; however, that did not mean that that necessarily has to hold true in other states. He further added that the reason that the Study Panel is developing these models for solar rights and for solar access is because there is good reason to hope that there might be some means of dealing with this particular issue.
- Bill Brooks commented that in California and New Jersey, there have been some jurisdictions with unnecessary requirements; City of Anaheim requires 3 ft fencing around PV installations! Not having PV array mounted on the edge or the corner of the roof is reasonable and not a problem, but some others were too restrictive. Jerry Ventre replied that different states would have different responses and this topic deals with all different levels of government; it starts at the local level with local ordinances but it stretches all the way up to the capitols of the states. It's not just something that would be a model for state action, but it would cover the broad spectrum of different levels of jurisdiction.
- Bill Reaugh (Old Country Roofing) mentioned that their primary business was with homebuilders to use solar on new homes and it would also be helpful in addition to writing model language for statutes to come up with some model language for CCRs (Covenants, Conditions and Restrictions), specifically allowing solar access and rights for solar friendly communities. Jerry Ventre agreed and mentioned that the Study Panel will definitely factor this into the Study topic.

- Larry Sherwood suggested that we can come back to any other questions or discussion at the end of the meeting.

5. High Wind Loads and Model Code (Topic 3)

- Stephen Barkaszi made the presentation on the last Study topic: High Wind Loads and Model Code.
- Colleen O'Brien (BEW Engineering) pointed out the limitation of computer modeling for developing wind load reduction for air permeable PV systems, and suggested to put emphasis on empirical studies using wind tunnels. She mentioned that some such studies have been conducted, but the information is mostly proprietary. She provided the estimate for conducting wind tunnel studies as about \$50,000 for smaller scaled down models (which may not give accurate results in many cases such as when the wind loads are not parallel to the roof) and approximately \$200,000 for more representative models. Colleen also emphasized on giving due consideration to the attachment points on the roof and pointed out that while the ballasted PV systems were great, there was an issue putting these systems on mechanically attached membranes, since they don't have an air barrier between the membrane and the roof deck and if the building becomes pressurized, which does happen in a wind storm, these membranes can actually inflate like a circus tent and displace the system.
- Stephen Barkaszi agreed with Colleen's comments, but pointed out that with the limited resources available to the Study Panel, the extensive wind tunnel studies may not be feasible, but some wind tunnel studies will be performed at FIU's Wall of Wind facility which will provide useful data at relatively low cost.

6. Closure

Jerry Ventre asked for any additional comments on Topic 1. Fast Permitting (as Larry Sherwood had previously suggested to come back to at the end of the meeting). There were no significant comments. Jerry concluded the meeting, thanking the stakeholders for their participation and valuable comments and reminding them to provide their further input at the Solar ABCs website or by correspondence with Study Panel members.

7. Additional Comments

Erika Morgan (Citizen RE) did not get a chance to make her comments after the presentation on Topic 1. Fast Permitting and she had to leave early at the end of the meeting. She later provided her comments in writing to suggest permitting may be considered in broader terms to include the permitting by local building officials and approval by electric utility, since from the customer or system installer's viewpoint the total time from the plans to installation is important. She also suggested that the Study Panel should try to get metrics for the "total time to approval) and consider methods to facilitate interconnections of PV systems to utility. The Study Panel will give due

consideration to Erika's suggestions (the interconnection issues are dealt with by the Interconnections and Net Metering Panel of the Solar ABCs project).