

PUBLIC UTILITIES COMMISSION  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3298



March 13, 2009

To Service List in Rulemaking 08-03-008:

### **Public Meeting**

#### **Workshop on Solar PV Pricing**

**March 13, 2009**

**10:00AM - 5:00PM**

**Commission Auditorium**

**505 Van Ness Avenue**

**San Francisco, CA 94102**

### **Summary**

Energy Division invites CSI Program stakeholders to a workshop to develop a better understanding of the various costs associated with Distributed Solar PV Generation pricing and to explore potential opportunities for policy intervention that could help realize the CSI Program's goals related to market transformation. This workshop will examine the following three issues:

- (1) Review the collection of CSI program data with respect to project costs, current methods and proposed changes to current methods
- (2) Identify cost elements of PV project development and associated cost reduction potential based on a review of cost reduction studies performed in various markets
- (3) Collect ideas about how CSI Program implementation and policy can support a downward pressure on solar pricing

### **Background**

The overarching policy goal of the CSI Program is to transform the market for solar PV by bringing down installed costs for PV systems. There are a number of program design and implementation features that implicitly attempt to generate a downward pressure on price. The CSI Program's current process for collecting project cost data is to collect panel costs, inverter costs, and "other" costs as part of the CSI Program application. In addition, installers submit a worksheet (The Project Cost Breakdown Worksheet) that asks for additional information including: Planning and Feasibility Costs; Engineering and Design Costs; Permitting Costs, PV Equipment Costs, etc. Some of these data elements, such as panel and inverter costs, are tracked in the CSI Program's Powerclerk database, while many others are not. The problem is that though the CSI is currently collecting project cost data; the industry has reported at CSI Program Forums and

through other channels that the current data collection spreadsheet is time-consuming and some parties have expressed that it might not be able to provide useful aggregate data because of the different way parties complete the worksheet. Another problem is that the CSI is not currently logging project cost breakdown worksheet data in its Powerclerk Database, and the project data that is in Powerclerk has not yet been analyzed and reported on by the Energy Division in staff Progress Reports.

## **Workshop Goals**

The purpose of this workshop is to establish a better process for gathering and analyzing price and cost data for Distributed Solar PV facilities. In addition, this workshop will provide Energy Division the opportunity to hear from stakeholders how the targeted policy actions can result in reductions in specific cost components. The proposed workshop will seek to answer three related questions:

### **1. What are the relevant project cost categories?**

Energy Division has proposed several categories in the table above. In our initial analysis, these are the costs that differentiate products on the market. Are custom installations much more expensive than modular, standardized systems? Are labor costs coming down in tandem with panel costs, or vice versa? What percentage of cost is directly attributable to labor versus Balance of System (BOS) costs? Setting too many categories creates a reporting and tracking burden for installers, but some additional granularity is required.

### **2. How can data on these costs be collected while protecting sensitive business or financial information?**

Solar industry stakeholders have expressed concerns about the current Cost Breakdown Worksheet. These concern, whether justified or not, about the use of the information for tax purposes has generally discredited the process and left data integrity in doubt. Furthermore, installers have not been incented or directed to track costs in a way that makes the required data easily accessible and reportable. Survey reports with anonymous participation may solve some of the concerns, but the issue of recordkeeping and proprietary cost-saving methods may still hinder collection of the data. What can the CPUC do to encourage better and more extensive recordkeeping, and how can we satisfy concerns about access to that data?

- a. Should the current project cost worksheet be eliminated and/or replaced?
- b. Can the data already collected be used in measurement and evaluation?
- c. If the data collection stops now, how will it affect the program's ability to conduct measurement and evaluation with respect to costs?

### **3. Which Cost Categories could be sensitive to regulatory intervention and result in the most downward pressure on net installed costs for Solar PV?**

The policy objective is to reduce prices. Initially, the program logic was that by increasing volume of sales, the cost of panels would come down as the industry realized economies of scale. As big as the CSI is, it does not seem that we have sufficient global

market power to affect such a change in the near to medium term. Are there other areas we should concentrate on, such as streamlining compliance and interconnection procedures? System design and orientation? Training and labor? In other words, is the RD&D program going to give us as much bang for the buck as the tiered incentive structure? Similarly, how does the distinction between commercial and residential affect the program and its results? Taking equity concerns into account, what other structures might affect specific costs more directly? Is regulatory uncertainty increasing costs (ITC, etc)?

### **Workshop Participants**

This is a public meeting. Interested parties may attend in person or may participate via teleconference. The Conference Room is wheelchair accessible. For directions and any other information regarding the meeting, please call Nicolas Chaset at (415) 703-1184 nlc@cpuc.ca.gov

### **Comments**

Energy Division invites parties to submit informal pre-workshop comments addressing the Workshop Goals and the Proposed Workshop Agenda no later than five business days (close of business on March 3, 2009) before the Workshop. Please submit pre-workshop comments to Nicolas Chaset at nlc@cpuc.ca.gov

**Teleconference Information:** To use this option, please dial 1-866-675-0748. You will then be prompted for your pass code which is 554377 followed by the # sign.

We ask any participants who wish to use this teleconference service to refrain from any additional sounds, such as, music on hold, background noises, as it interferes with the meeting attendees. If necessary, please use the mute function on your phone or disconnect from the call and reconvene at a more convenient time.

Nicolas Chaset  
Energy Division  
nlc@cpuc.ca.gov  
(415) 703-1184

cc:

## Agenda

<b>Morning Session:</b>		
<b>How do CPUC and CSI Program Administrators collect and use PV system cost information?</b>		
		<b>Topic</b>
10:00 – 10:15	Molly Sterkel, CPUC Staff	Introduction
10:15 – 10:30	CSI PAs Panel	-Discuss current cost breakdown worksheet -Discuss potential uses of cost worksheet data as currently collected
10:30 – 11:00	Sach Constantine, CPUC Staff	-Present on the needs of the CSI Evaluation Plan (including various studies) in terms of the data collected and its use in improving the CSI program. -Give a walkthrough of CaliforniaSolarStatistics.org
11:00 – 11:30	Sue Kateley, CalSEIA	Present ideas on how to modify the amount of system cost information while still collecting valuable information that can be used to improve the CSI Program and analyzed in the CSI Evaluation Plan
11:30 – 1:00	<b>Lunch</b>	
<b>Afternoon Session:</b>		
<b>How can the CSI Program bring down the installed cost of solar(with a focus on policy and balance of system costs)? Has there been any noticeable effect so far?</b>		
1:00 – 1:30	Ryan Wiser, LBNL	Presentation LBNL's recently released PV cost trends report: "Tracking the Sun: The Installed Cost of Photovoltaics in the US from 1998-2007" Discussion of how CSI data collection current and proposed could affect future cost trend studies
1:30 – 3:00	Solar Industry Panel Discussion: -Pat Redgate (Ameco) -JP Ross (Sungevity) -Doug Payne (Solartech) -SunEdison -Bill Brooks (Brooks Engineering) -Nick Chaset (CPUC facilitator)	Other than tracking solar costs, how does CSI work today (or could work in the future) to reduce the installed cost of solar?
3:00 – 3:15	Solar Industry Panel Discussion	Q & A
3:15 – 3:30	<b>Break</b>	
3:30 – 4:00	CSI PA/CPUC	-Panel discussion summary -Discussion of CSI PA and CPUC upcoming CSI Program modifications (incentive calculator, incentive application, cost collection process)
4:00 – 4:30	CPUC	Wrap-up and next steps