

## Workshop Agenda – Wholesale Renewable Distributed Generation Technical Potential

**January 31, 2013, 9:30-4:30**

California Public Utilities Commission  
Auditorium  
505 Van Ness Avenue  
San Francisco, CA 94102

**Phone Attendees (Listen ONLY)**

Conference line: 1-866-812-8481  
Participant Passcode: 9058288#

**For general questions  
about the workshop:**

Adam.schultz@cpuc.ca.gov

**WebEx – (Slide view / Submit written questions)**

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Meeting Number: 745 313 113

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### **Background:**

The CPUC has hired engineering firm Black & Veatch, with subcontractor E3, to provide technical support for a multi-year effort by Energy Division staff to evaluate the costs and benefits of wholesale renewable distributed generation (DG). The first step in this effort is the development of an analytical framework for assessing renewable DG technical potential and the associated costs and benefits. It is expected that this ongoing analysis will be used to inform renewable procurement and long-term resource planning.

The first step in this analysis will be to revisit the study published by the CPUC in March 2012 titled “Technical Potential for Local Distributed PV in California.” The methodologies and assumptions developed by consulting firm E3 (Energy + Environmental Economics) for this study will provide the foundation for this first step of the CPUC’s analysis of wholesale renewable DG.

(March 2012 study available online: <http://www.cpuc.ca.gov/NR/rdonlyres/8A822C08-A56C-4674-A5D2-099E48B41160/0/LDPVPotentialReportMarch2012.pdf>).

### **Purpose of Today’s Workshop:**

The purpose of this workshop will be to give stakeholders the opportunity to vet the methodologies and assumptions developed by consulting firm E3 that were utilized in the CPUC-published study “Technical Potential for Local Distributed PV in California,” with a particular emphasis on the quantification of the locational benefits.

## **WORKSHOP AGENDA**

### **A. Introduction and Overview**

**9:30-10:15**

#### Project Overview (Adam Schultz – CPUC)

- Welcome, introductions, & housekeeping
- Status of DG Programs and Deployment in California
- Overview of the CPUC’s Roadmap for DG Technical Analysis
- What is in scope / out of scope at today’s workshop

#### Phase 1 Study Overview (Snuller Price – E3)

- Overview of Technical Potential for Local Distributed PV: Preliminary Assessment (March 2012)
  - Purpose
  - Key Findings
- Goals of the updated DG Assessment
- Standards of Review for today’s workshop / Q&A
  - Discussion of the criteria by which the CPUC will evaluate whether to modify the methodologies, assumptions, or inputs utilized for this analysis

## Workshop Agenda – Renewable Distributed Generation (ALL Technologies) Technical Potential

### **B. PV Potential Study: Review of Previous Study and Proposed Improvements to Methodology 10:15-12:15**

#### DG Study Overview and Evaluation of Potential Improvements (Jeremy Hargreaves & Elaine Hart – E3)

- Overview of methodology and assumptions utilized in the prior PV Potential Study
- Step by step walkthrough of key elements in methodology
  - Original methodology
  - Proposed improvements
  - Q&A
- Key methodology elements and workshop questions
  - Interconnection potential assessment
    - Better approach than the ‘sphere of influence’ approach used around distribution substations in the prior study?
  - Locating ground mounted sites in urban areas
    - Additional data to identify potential ground in urban / suburban areas?
  - Learning curves by system type describing cost trajectory
    - Additional data sources we should be looking at on cost forecast?
  - Interconnection costs
  - New transmission avoided costs that reflect local capacity zones
    - Is there an alternative to PCAF for capturing transmission benefits?
    - Are energy-only DG projects a viable option for developers?
    - If DG were fully deliverable, what upgrades would be needed on the transmission system?
    - Would DG projects under “no backflow” or Rule 21 ever need the capability to curtail?

#### **LUNCH BREAK**

**12:15-1:15**

### **C. An Implementation Assessment of Identifying and Capturing the Locational Benefits of DG 1:15-2:15**

#### Overview: Identifying and Capturing Locational Benefits (Snuller Price – E3)

- Overview
- Definition of “locational benefits”
- Capturing “locational benefits”
- Restatement of the Standards of Review

#### Current Assessment of the Impacts of DG: AB 578 Report Summary and Preliminary Findings

(Ryan Pletka – Black & Veatch)

- Scope of AB 578 Report (*Biennial report from CPUC on the impacts of DG on California’s T&D systems*)
- Preliminary Findings: Assessment of Current Positive and Negative Impacts of DG on the Transmission and Distribution System
- Current assessment of attempts to quantify locational benefits

## Workshop Agenda – Renewable Distributed Generation (ALL Technologies) Technical Potential

### Identifying a Framework to Capture the Locational Benefits of Renewable DG (Snuller Price – E3)

- Distribution planning process
- Calculation of distribution avoided cost
- Transmission planning processes
- Accounting for coincidence between renewable DG and local area loads
- Take-aways on implementation to actually capture the value

### **D. Utility Perspective: Implementation Assessment of Capturing Locational Benefits**

**2:15-3:15**

#### Moderated Panel Discussion (E3, PG&E, SCE, and SDG&E)

- **Distribution Planning:** Does DG need to be directly integrated into distribution planning to provide distribution value?
  - Are rooftop systems like energy efficiency or generators?
  - Would the answer for planning be different for customer-generators and wholesale DG?
- **DG Contracting:** What kind of wholesale DG contract terms would be required to provide distribution system support?
  - What level of reliability would be needed?
    - Of the renewable distributed generation?
    - Of the resulting combined grid and generation system?
- **Technical Barriers:** Are the engineering barriers persistent barriers or can they be addressed with additional measures?
  - Different feeder design; Eg. ‘circuit of the future’
  - Modification of IEEE 1547 interconnection standards
  - Smart inverters with active volt / var control
- **Potential Solutions:** What could work from a utility perspective to capture the locational benefits of renewable DG?
  - What additional research would be needed?

### **E. Developer Perspective: Can DG Development be Aligned to Capture Locational Benefits?**

**3:15-4:15**

#### Moderated Panel Discussion (E3, Recurrent Energy, SunEdison, Phoenix Energy, and SunLight Partners)

- **Constraints on Project Development:** From a developer perspective, what are the implications of a renewable DG procurement model with locational adders that vary by location?
- **DG Contracting:** Given the requirements, what contract terms are feasible for the local model to work?
- **Incentive Assessment:** Would the benefits of locational targeting be sufficient to align development to capture local benefits given the constraints on location, timing, and contracting?

### **F. Next Steps:**

**4:15-4:30**

#### Next Steps (Adam Schultz – CPUC)

- Next step: Staff data request to solicit written feedback on the methodology and assumptions discussed at today’s workshop
- Overview of CPUC’s workplan for DG Technical Analysis