

**DEER Peak Ad Hoc Workshop #2-Meeting Summary**  
**April 16, 2018**  
**10:00 a.m. – 4:00 p.m**  
**Pacific Energy Center, 851 Howard St, San Francisco, CA 94103**  
**Final Meeting Summary**  
**Facilitator: Ellen Zuckerman, Independent Consultant**

## **I. OVERVIEW**

On April 16, 2018, the California Energy Efficiency Coordinating Committee (CAEECC) convened the second of two workshops at the Pacific Energy Center in San Francisco to discuss changes to the Database for Energy Efficiency Resources (DEER) peak period definition. Participants included CAEECC members; parties in R.14-08-013, R.14-10-003, R.15-12-012, R.16-02-007, R.13-11-005; other interested individuals; and the CAEECC facilitation team. Fourteen individuals participated in-person, and twenty-two attendees participated via webinar. Meeting facilitation was provided by Ellen Zuckerman (Independent Consultant) and Meredith Cowart (CONCUR). Meeting materials, including presentations, are provided on the CAEECC website at: <https://www.caeccc.org/4-16-18-ad-hoc>. A full list of meeting participants is provided in Appendix A.

In this document, the majority of the discussion is captured without attribution. In some cases, the name and/or affiliation of the speaker is identified, because (1) they are presenting on a specific subject or (2) their affiliation is relevant to the comment.

Following the presentations, any short clarifying questions are listed and *responses to questions* are noted in *italics*. Any longer discussion points are summarized under IV. Key Discussion Themes: Proposals to Redefine Peak Period and VI. Key Discussion Themes: Implementation Schedule. Section VII. Outcomes and Next Steps, at the end of this document, lists all next steps identified.

## **II. WELCOME AND INTRODUCTIONS**

E. Zuckerman welcomed participants and reviewed the goals of today's meeting: (1) To develop and refine one or more proposals to redefine the DEER peak period; (2) to discuss the pros and cons of a 2020 v. 2022 implementation schedule; and (3) to identify areas for additional exploration once a California Public Utilities Commission (CPUC) Decision on DEER peak is issued.

She explained that the current DEER peak definition includes three components, and that today's proposals will consider all three of these components: (1) The time window, (2) the underlying methodology, and (3) an alternate peak.

E. Zuckerman also recapped key outcomes from the DEER Peak Ad Hoc Workshop #1 held on April 3, 2018, including:

1. Unanimous agreement that the current 2-5 p.m. DEER peak definition should be changed

2. Strong support for shifting DEER Peak to 4-9 p.m.
3. Some support for “no DEER peak” and relying instead on measure load shapes and the monetary value of hourly avoided cost benefits from the E3 Avoided Cost Calculator (ACC)
4. Interest in developing a “secondary peak” or alternative that would support a smooth transition to a new DEER peak definition and methodology
5. Unanimous agreement that changes to the underlying methodology for updating DEER peak values are needed
6. Some concern that the transmission and distribution (T&D) peak may not be adequately captured by the proposed 4-9 p.m. period

### **III. PRESENTATIONS: PROPOSALS TO REDEFINE PEAK PERIOD**

The meeting began with five short presentations supporting one or more of the four proposals to redefine DEER Peak and the rationale for and challenges associated with each proposal. The four proposals included:

- (1) Retain the current DEER peak period of 2-5 p.m.
- (2) Eliminate DEER peak and rely instead on measure load shapes and the monetary value of hourly avoided cost benefits from the E3 ACC
- (3) Change the DEER peak period time window to 4-9 p.m.
- (4) Change the DEER peak period time window to 3-6 p.m.

All presentations are available on the CAEECC website (see link above). Clarifying questions posed by participants, and answers to these questions, are listed below the presentations. Key themes from the discussion that followed the presentations are captured in IV. Key Discussion Themes: Proposals to Redefine Peak Period.

- *Presentation to Help CAEECC Workshop Attendees Make an Informed Decision Regarding DEER Peak Period Definition (Mohit Chhabra, Natural Resources Defense Council [NRDC])*
- *The DEER Demand Savings Definition - A Summary of Fake Energy Efficiency News: Misconceptions and Alternate Facts Presented about DEER Peak Demand Definition Update (Jeff Hirsch, J. Hirsch Associates, Consultant to the CPUC, presenting as an independent consultant)*
- *DEER Peak Period Refresh: CAISO Perspective (Delphine Hou, California Independent System Operator [CAISO])*
- *DEER Peak Period Refresh: PG&E Perspective (Jan Grygier, Pacific Gas and Electric [PG&E])*
- *DEER Peak Period Definition and Methodologies (Anuj Desai, Southern California Edison [SCE])*

#### **Clarifying Questions on Presentations:**

#### **Questions on M. Chhabra's presentation:**

- In Option A: Get Rid of "Static" Peak Period Concept, how are avoided costs calculated and are these more accurate than the current methodology? *The avoided cost includes two critical values: (1) the value of energy efficiency to the grid for each hour and (2) measure savings profiles. It is a detailed process that is carefully monitored at the CPUC.*
- Is it true that peak demand definition does not affect cost effectiveness? The Cost Effectiveness Tool (CET) has input for UESkW, which I believe does impact the measure TRC. *Peak demand definition does not affect cost effectiveness when using DEER shapes, but it does affect cost effectiveness for non-DEER measures and for custom measures. This is an anomaly of the CET calculation methodology, which is done to simplify the data storage requirements, and does not hold true for more detailed calculations.*
- How are load shapes in the CET calculated? *There are three different groups of impact profiles in the current CET: (1) DEER 8,760s; (2) PG&E 8,760s; and (3) time of use (TOU) shapes. The DEER 8,760s are averaged by end use type. For example there is a typical 8,760 for three classes of lighting, which are averaged over buildings and climate zones. This was also a simplification done to minimize data storage requirements.*

#### **Question on J.Hirsch's presentation:**

- How old are the data used in the TOU impact profiles? *The data are current, in that they are in use today, but most of the data comes from the 1990s or earlier.*

#### **IV. KEY DISCUSSION THEMES: PROPOSALS TO REDEFINE PEAK PERIOD**

Following the presentations, a plenary discussion was held to discuss the four proposals to redefine the DEER peak period. Participants unanimously agreed to eliminate two of these proposals from further consideration: (1) The proposal to retain the current DEER peak definition of 2-5 p.m., and (2) The proposal to eliminate the DEER peak period. (See more on this point below.)

Participants then broke into two small groups to discuss the proposal that they preferred: (1) a 3-6 p.m. peak; or (2) a 4-9 p.m. peak. In small groups, participants discussed the pros and cons of their preferred approach, the methodology that should be used to define peak, and whether any alternate peak should also be identified. The small groups then developed proposals, which they reported back in a plenary. The key discussion themes during the plenary, the small group report-out, and the two proposals that were developed by each of the small groups, are captured below.

#### ***Unanimous Agreement that the 2-5 p.m. DEER Peak Definition Should be Eliminated.***

In a straw poll, participants reconfirmed that the current DEER peak definition no longer represents the period of time during which the most valuable demand savings occur (for more information on this point, see DEER Peak Ad Hoc Workshop #1 Meeting Summary, available online at: <https://www.caeec.org/4-3-18-adhoc-meeting-deer-park-peak>).

***Unanimous Agreement that the ACC Approach (the “No DEER Peak” Approach) is Important to Consider as a Long-term Option but is not Currently Feasible to Implement.*** In a straw poll, participants agreed that the ACC could be relied upon to resolve some of the issues raised during these workshops (per the discussion of a possible “no peak” option in Workshop #1 - for more information on this point, see DEER Peak Ad Hoc Workshop #1 Meeting Summary, available online at: <https://www.caeccc.org/4-3-18-adhoc-meeting-deer-park-peak>). However, a number of issues with the ACC itself, and with implementation of this approach, were identified and would need to be addressed before this approach could be implemented (see more on this point in ***Suite of Issues with the CET and the ACC Identified, Which Require Additional Review and Scrutiny***, in this section IV, below). Participants agreed that this approach should be kept on the table for the long-term (i.e. implementation in 2022), but should not be adopted at this time (i.e. implementation in 2020) (for more on implementation schedule, see section VI. Key Discussion Themes: Implementation Schedule).

***Strong Support for a 4-9 p.m. Peak Period and Alternate Peak; Some support for a 3-6 p.m. Peak Period and Possible Alternate Peak.*** As noted above, after the first set of presentations, and plenary discussion, participants broke into small groups according to their preferred proposal: 3-6 p.m. peak or a 4-9 p.m. peak. The proposals developed are described below. Following the report out, participants further discussed the pros and cons of the various options, and then responded to a final straw vote to indicate their support for the proposals, which is captured below the proposals.

#### **Summary of “4-9 p.m. Small Group” Proposal:**

***Time period:*** 4-9 p.m.

***Method (demand emphasis):*** Use the ACC to forecast the 30 costliest days in a year over a period of years (see below), organized by climate zone.

- Note: this functionality exists in the ACC.
- Two possible timeframes: (a) select a period in relation to the EUL of a measure or (b) select a 5-year timeframe (to loosely align with direction in the TOU proceeding). The group noted that the precise number of years would not change the calculation significantly, as the ACC forecast would select a baseline year and then identify the same days of the year for the duration of the chosen time period.

***Alternate peak (sub-station emphasis):*** Based on CPUC-recognized grid-constrained areas, identified in other proceedings such as the Distribution Resources Plan (DRP) (R.14-08-013), identify regions needing an alternate peak.

- An alternate peak may not necessitate a change of the new DEER peak definition; if a change is needed, then these “regional peaks” should be determined based on the normal rolling portfolio calendar process.

#### **Summary of “3-6 p.m. Small Group” Proposal:**

**Regardless of time period and methodology:** Address constraints w/the CET to improve accuracy, in at least 2 areas:

- Separate Generation + T&D 8,760 profiles
- Eliminate TOU shapes
  - Sub in 8,760 (subset of hours), or re-do as Avoided Costs are updated
  - Prioritize review of “non-flat” shapes

**Time period:** 3-6 p.m. – “gross load approach”

**Pros:**

- T+D = 1/3 of electric benefits (2015)
- Keeps full suite of EE services intact for diverse customer segments
- Evenly spaced around T&D peak
- Does not bias against the Commercial & Industrial sector
- Consider update when data suggests change is necessitated

**Methodology:**

- (1) Use current DEER peak methodology, or
- (2) Extend hours and days to match the most accurate and available data for T&D hours in the ACC, to best align with the T&D peak

**Explore development and implementation of an alternate peak:** Apply a localized modifier, which could take several forms such as:

- (1) A T&D window reflecting local constraints, or
- (2) A Benefit multiplier to apply to the capacity reduction
- A form of this used to exist (kW adjuster field)
- Key questions for moving forward with an alternate peak:
  - Can this be done in a reasonable amount of time, given resource limitations?
  - Would an alternate peak potentially serve and complement a 3-6 p.m. peak or would it be a substitute? (This would depend on methodology).

At the end of the small group discussion and report out, E. Zuckerman conducted a straw poll to determine which of the two options participants preferred, which options were acceptable to participants, and which options were unacceptable. Participants were asked to vote for only one “preferred” option, but could indicate if both options were “acceptable” or “unacceptable”. Not all participants voted for all proposals; and some remained neutral.

**All voting participants found a 4-9 p.m. peak “acceptable” and seven of those participants “preferred” a 4-9 p.m. peak over a 3-6 p.m. peak. Six participants found a 3-6 p.m. peak “acceptable” but only 2 participants “preferred” a 3-6 p.m. peak over a 4-9 p.m. peak. In addition, no participants found a 4-9 p.m. peak “unacceptable” while two participants found a 3-6 p.m. peak “unacceptable”.**

Results were indicated by organizations, as follows:

<b>Proposed DEER peak definition</b>	<b>Preferred DEER Peak Definition</b>	<b>Acceptable DEER Peak Definition</b>	<b>Unacceptable DEER Peak Definition</b>
4-9 p.m. peak + potential alternate peak	7 (1ORA, 1CEC, 2SCE, 1PG&E, 1CalTF, 1CAISO)	10 (1CPUC, 1PGE, 1SDG&E, in addition to those in “preferred”)	0
3-6 p.m. peak + potential alternate peak	2 (1J.Hirsh Assoc., 1 SCE)	6 (1ORA, 1CPUC, 1SDG&E, 1PG&E, in addition to those in “preferred”)	2 (1PG&E, 1SCE)

***Suite of Issues with the CET and the ACC Identified, Which Require Additional Review and Scrutiny.*** Throughout the meeting, participants identified multiple issues with both the CET and the ACC, which reduce the accuracy of the calculations for analyzing energy efficiency opportunities.

As described in the “Clarifying Questions on Presentations” above, a participant explained that DEER 8,760s are averaged by classes of end use type. For example, there is a typical 8,760 for three classes of lighting, which are averaged over buildings and climate zones. He explained that this was a simplification implemented several years ago to minimize data storage requirements. He explained that this lack of precision means that the relative value of a measure that provides greater savings during peak may not be captured.

In addition, he stated that avoided costs in the 8,760 profiles in the ACC need to separate Generation and T&D costs.

At other points in the meeting, the same participant stated that, regardless of the peak period chosen (3-6 p.m. v. 4-9 p.m.), TOU shapes within the CET need to be updated. In particular, he noted that TOU shapes take an average value for a subset of six time periods, which reduces their “peakiness,” which tends to undervalue measures that provide reductions during peak. Because of this, it is difficult to evaluate the relative value of various measures. Adjusters have been developed to account for this undervaluation, but as peak shifts the adjustments will no longer be accurate. An IOU representative agreed that it is important to differentiate between avoided capacity and energy savings, but stated that TOU and other rate proceedings do consider these components separately.

To account for this problem, he stated that either (a) the TOU shapes should be eliminated and replaced with 8,760 load shapes (prioritizing review of “non-flat” load shapes), or (b) the adjustments should be re-done as the Avoided Costs are updated. Another participant asked whether the work of (a) and/or (b) above should be done by the

IOUs or by the CPUC. The first participant replied that there is not a clear answer, and that this would be negotiable.

***Discussion of the Degree to Which 3-6 p.m. Peak Aligns With Gross Peak Load and 4-9 p.m. Peak Aligns with Net Peak Load.*** A participant stated that the 3-6 p.m. proposal better aligns with the “gross” peak load, while the 4-9 p.m. proposal better aligns with the “net” peak load. He said that participants supporting the 3-6 p.m. proposal are driven primarily by the position that the DEER peak definition should reflect the time at which distribution costs are highest (which corresponds with the gross peak versus the net peak). He asked other participants whether this is in fact the case. One participant, who strongly supports the 3-6 p.m. period proposal, confirmed, stating that he agrees that the DEER peak period definition should coincide with gross load, as this is a more important indicator of when savings will occur as it aligns with the T&D peak. However, another participant supporting the 3-6 p.m. period stated that he does not think that it is more important to reduce demand during the gross load peak than during the net load peak, but rather that it is important to consider all demand savings (generation and T&D). He stated that he supports the 3-6 p.m. period because data seen in J. Hirsch’s presentation suggest that the peak is more aligned with these hours.

Another participant stated that the highest avoided costs will occur when avoided capacity costs (\$/kW) (including generation and T&D capacity) are maximized, which is identified by net load rather than gross load. He noted however that while we have a good understanding of when avoided capacity reduces need for generation, the period during which avoided capacity reduces the need for T&D varies more at the regional level (and both across and within climate zones).

***Confirmation that CPUC Guidance Applies to the Vision Statement on Energy Efficiency Presented in Workshop #1.*** A participant reminded attendees that the overarching vision for this project, as determined by IOUs and CPUC staff, and presented at the start of the DEER Peak Ad Hoc Workshop #1 (see Introduction presentation at <https://www.caeec.org/4-3-18-adhoc-meeting-deer-park-peak>), stated that “Energy Efficiency (EE) programs help reduce future transmission, distribution, generation, and greenhouse gas (GHG) emissions impacts and costs by using values reflective of grid conditions.” The CPUC representative, B. Pena, confirmed that this vision is accurate, and that the CPUC has guided the group to collaborate in developing a DEER peak definition that addresses all four of these priorities. He further noted that one of the CPUC’s chief priorities is to align the DEER peak definition with the CPUC’s direction in other proceedings.

Another participant asked whether the ACC could be used to identify the hours of the year during which all values identified in the Vision, including transmission, distribution, generation and GHG impacts, are accounted for. D. Hou (CAISO) noted that this type of fine-grained analysis is used to determine TOU rates, but that identifying peak period does not require such a nuanced study. She stated that CAISO’s analysis has determined that the greatest demand savings (including for all four components noted above) occur during 4-9 p.m. throughout the year.

## **V. PRESENTATIONS: IMPLEMENTATION SCHEDULE**

In the afternoon session, participants discussed the implementation timeline for a possible change to DEER peak. E. Zuckerman recapped key outcomes from the DEER Peak Ad Hoc Workshop #1 (April 3, 2018) discussion on the implementation timeline, including:

1. Need for alignment of DEER peak definitional change and CPUC goal setting
2. Unanimous agreement that the adoption of a new DEER peak by January 1, 2019, is not possible. January 1, 2020, or January 1, 2022, are feasible and could allow for alignment with the CPUC goal setting process.
3. Strong agreement that preparations for the DEER peak shift should begin immediately.
  - a. Meeting a January 2020 deadline will require near term updates to goals, workpapers, etc., which will require prioritization and direction from the CPUC.
4. Request for clarity and stability for the DEER peak definition changes - a stable definition, clear timelines, clear values, and communication are needed to provide direction and reduce risk to stakeholders

Following E. Zuckerman's recap, two presentations on proposals to implement a possible change to DEER Peak: 2018-2020 vs. 2018-2022 implementation were provided from the IOU and implementer perspective. These presentations are available on the CAEECC website (see link above). Any clarifying questions posed by participants, and answers to these questions, are listed below the presentations. Key discussion themes on implementation schedule are summarized in VI. Key Discussion Themes: Implementation Schedule.

- ***DEER Peak Period Refresh Timeline to update DEER, Ex Ante, Programs & Goals (Cassie Cuaresma, Southern California Edison [SCE])***
- ***Principles for Implementation (Michelle Vigen, California Efficiency Demand Management Council [CEDMC])***

### **Clarifying Questions on Presentations:**

- Can work papers be updated by about 1/2019?
  - *Answer#1: Yes, that would be about the timeline for the solicitation process, and work papers can be prioritized based on the solicitation schedule.*
  - *Answer #2: While it is feasible to update work papers within a month, and allow for a 60-day review period, in practice this usually takes longer.*
- When would IOUs need resolution from the CPUC in order to start the process of a DEER update for 2020?
  - *Answer #1: It depends on the complexity of the change in the DEER peak period. If all that's needed is to apply an adjustment factor to our work*

*papers, this could be done relatively quickly. More complex updates would take far more time.*

- *Answer #2: The CPUC generally develops a draft resolution before the final is formalized. It would help IOUs to see the draft as soon as it is possible and feasible, so that we could begin making the needed adjustments.*
- How long would it take the Commission Staff to update DEER 2020? If the draft version is due 6/1/18, when does this workshop need to finalize the updated DEER Peak definition? *This proposal is due to the CPUC on April 27, 2018.*
- What are the next steps at the CPUC once the IOU proposal is received?
  - *B. Pena, CPUC: We would first work internally to vet the potential next steps, attempt to add the DEER alignments that are energy efficiency-specific, and evaluate whether the proposal is in alignment with other proceedings.*
- What is the process at the CPUC for updating DEER?
  - *The process is currently underway and is expected to be completed in July.*

## **VI. KEY DISCUSSION THEMES: IMPLEMENTATION SCHEDULE**

***Acknowledgement that Both 2020 and 2022 Options are Feasible and Both Options Have Advantages and Drawbacks.*** Participants agreed that a 2020 start date is feasible, but that shortcuts may be needed in order to deliver on this timeline (e.g. prioritizing the refresh of some work papers over others). Under this scenario, it may not be feasible to update the solicitations and work papers in time, and so programs may not have full alignment with the 2020 Potential and Goals Study. Alternatively, if the timeline is not implemented until 2022 there will presumably be a greater number of programs that have already been bid and are operating under the current 2-5 p.m. peak period definition. One participant emphasized that both timelines are acceptable, as long as the process is conducted with sufficient transparency, flexibility and certainty.

***Strong Preference for 2020 over 2022 Implementation Date of the New DEER Peak Definition, with a Longer-Term Shift to “No Peak”.*** While participants acknowledged that there are pros and cons with both the 2020 and 2022 options, they pointed out that participants support a DEER peak shift (either to 4-9 p.m. or to 3-6 p.m.) as an interim solution, and support a longer-term shift to a “no-peak” solution. Several participants felt strongly that a four-year timeline to implement the interim solution is excessive. They stated that if the delay will take four years, than it would be more reasonable to begin the updates necessary to implement the “no-peak” solution by 2022. These updates would include a) updating load shapes b) separating generation and T&D, and c) considerations related to the possible elimination of demand goals, among others.

Participants further noted that if the Commission is willing to consider devaluing or suspending kW goals for an interim year, this would allow for a faster and more accurate roll out towards a 2020 implementation date. A. Desai reminded participants that this is

beyond the scope of this workshop, although the IOU proposal could include potential contingency factors around kW goal suspension.

***Agreement that Dual Reporting May be Needed for Multi-Year Custom Projects, and that Early Clarity on Changes to Reporting Protocol is Critical:*** Participants discussed challenges with reporting, particularly with regards to multi-year custom projects in development and contracted under the current DEER peak definition, but implemented both before a new DEER peak definition is adopted. Participants confirmed that there are several potential agreeable ways to structure the change in reporting, but that it is critical that these changes be decided upon early on, and made clear to implementers. One participant emphasized that customers who have signed project agreements based on one set of program rules must continue to be evaluated and paid on the basis of the original signed agreement. However, for the purposes of reporting demand savings, these numbers could reflect both the old and updated DEER peak definition. As a result, dual reporting may be required for some projects while the transition occurs.

## **VII. KEY OUTCOMES AND NEXT STEPS:**

- Participants to submit homework assignment/response sheet (including any updates to response sheets previously submitted) by close of business (COB) on Thursday, April 19, 2018.
- A. Desai will circulate the draft IOU proposal to workshop participants by April 20, 2018, COB. The IOU proposal will include the meeting summaries and final participant response sheets as an appendix.
- Participants to review provide feedback on draft IOU proposal by April 24, 2018 COB.
  - Participants will ensure that their organization's support for/against the various proposals is listed accurately on a table embedded in the draft proposal
  - Participants wanting to further discuss reporting of peak savings from multi-year custom projects will connect with A. Desai by April 24, 2018.
- Final IOU proposal due to CPUC on April 27, 2018

## **Appendix A: Participant List**

### ***Participants from CAEECC member organizations present:***

Michelle Vigen, California Efficiency + Demand Management Council  
Brian Samuelson, California Energy Commission  
Henry Burton, California Public Utilities Commission (CPUC), Office of Ratepayer Advocates (ORA)  
Cassie Cuaresma, Southern California Edison (SCE)  
Shanna Dee, San Diego Gas & Electric (SDG&E)  
Anuj Desai, Southern California Edison (SCE)  
Halley Fitzpatrick, Pacific Gas & Electric (PG&E)  
Jesse Feinberg, Southern California Edison (SCE)  
Jan Grygier, Pacific Gas & Electric (PG&E)  
Lujana Medina, EnergyRSC, participating on behalf of SoCalREN

### ***Participants from CAEECC member organizations joining via webinar:***

Mohit Chhabra, Natural Resources Defense Council (NRDC)  
Dale Fontanez, Southern California Gas and Electric Company (SoCalGas)  
Ranjiv Goonetilleke, Southern California Gas and Electric Company (SoCalGas)  
Henry Liu, Pacific Gas & Electric (PG&E)  
Rosalinda Magana, Southern California Gas and Electric Company (SoCalGas)  
Armen Saiyan, Los Angeles Department of Water and Power (LADWP)  
Matt Smith, San Diego Gas & Electric (SDG&E)  
Keith Valenzuela, San Diego Gas & Electric (SDG&E)  
Kelvin Valenzuela, San Diego Gas & Electric (SDG&E)

### ***Other participants joining in person:***

Ayad Al-Shaikh, Future Energy Enterprises  
Alfredo Gutierrez, ICF International, participating on behalf of SoCalREN  
Jeff Hirsch, JJ Hirsch & Associates  
Brian Horii, Energy and Environmental Economics (E3)  
Bryan Pena, California Public Utilities Commission (CPUC)

### ***Other participants joining via webinar:***

Don Arambula, Don Arambula Consulting  
Marc Costa, The Energy Coalition  
Nicole Cusick, Leidos  
Barbara Hernesman, SynergyNexGen  
Delphine Hou, California Independent System Operator (CAISO)  
Phil Jordan, CLEAResult

Amit Kanungo, DNV GL  
Manisha Lakhanpal, California Public Utilities Commission (CPUC)  
Jared Langevin, Lawrence Berkeley National Laboratory (LBNL)  
Joanne O'Neill, CLEAResult  
Alberto Pezzani, Cascade Energy  
Bob Ramirez, DNV GL  
Michael Yee, Market Advisor

***CAEECC facilitation team:***

Meredith Cowart, CAEECC Facilitation Team  
Ellen Zuckerman, CAEECC Facilitation Team