

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking Regarding Policies, Procedures and Rules for Development of Distribution Resources Plans Pursuant to Public Utilities Code Section 769.

Rulemaking 14-08-013  
(Filed August 14, 2014)

Application of Southern California Edison Company (U338E) for Approval of Its Distribution Resources Plan.

Application 15-07-002  
(Filed July 1, 2015)

Application of San Diego Gas & Electric Company (U902E) for Approval of Distribution Resource Plan.

Application 15-07-003  
(Filed July 1, 2015)

In the Matter of the Application of PacifiCorp (U901E) Setting Forth its Distribution Resource Plan Pursuant to Public Utilities Code Section 769.

Application 15-07-005  
(Filed July 1, 2015)

In the Matter of the Application of Pacific Gas and Electric Company for Adoption of its Electric Distribution Resources Plan Pursuant to Public Utilities Code Section 769 (U39E).

Application 15-07-006  
(Filed July 1, 2015)

Application of Liberty Utilities (CalPeco Electric) LLC (U933E) for Approval of Its Distribution Resources Plan.

Application 15-07-007  
(Filed July 1, 2015)

In the Matter of the Application of Golden State Water Company on Behalf of its Bear Valley Electric Service Division (U913E) for Approval of its Distribution Resource Plan.

Application 15-07-008  
(Filed July 1, 2015)

**COMMENTS OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR  
CORPORATION**

**I. Introduction**

Pursuant to the Administrative Law Judge’s November 16, 2015 Ruling, the California Independent System Operator Corporation (CAISO) files these comments regarding the Distribution Resources Plan (DRP) Roadmap Straw Proposal (Roadmap). The Roadmap issued by the California Public Utilities Commission’s (Commission) Energy Division Staff is a

comprehensive and thoughtful plan for organizing the many complex and interrelated issues involved in enhancing the growth of distributed energy resources (DER) and their integration into California's electricity system. Most important, the Roadmap lays out a clear plan of activities for the next several months with emphasis on coordinating and delineating the respective scope of the Commission's DRP and Integration of Distributed Energy Resources (IDER) proceedings.

## **II. Discussion**

In these comments, the CAISO suggests enhancements to the Roadmap that warrant additional emphasis. The CAISO believes that focusing on these areas in 2016 will be especially useful in advancing the specific goals of Public Utilities Code Section 769 regarding DER growth and, more generally, the State's goals for renewable energy. In this regard, the CAISO supports the Roadmap's recommendation to form a Demonstration Project Design Working Group, which could be the forum to discuss some of the enhancements the CAISO recommends in these comments.

### **1. Operational coordination between utility distribution companies and the CAISO at the transmission-distribution interface.**

The CAISO notes that the Roadmap is not primarily focused on coordinated operations and the roles and responsibilities at the transmission-distribution interface (T-D interface), *i.e.*, the major substations on the electric system where the high-voltage grid operated by the CAISO connects with the distribution systems operated by the utility distribution companies (UDCs). However, the rapid growth of DER on the system highlights the importance of ensuring well-defined operational and planning roles and responsibilities at the T-D interface from two main perspectives. First, the activities of increased numbers of more diverse DERs within each local distribution area (LDA) will have real-time impacts on the CAISO controlled grid that are likely to be more volatile and harder to forecast than they are today. Second, DER responses to CAISO dispatch instructions from the increasing numbers of DER participating in the ISO markets will have operational impacts on the distribution system. From both perspectives, it would be valuable for the Roadmap to explicitly address T-D interface interactions between the CAISO and UDCs in its upcoming activities.

To address the aforementioned matters, the CAISO suggests that the following specific considerations be included in the Roadmap.

- In section 4, Key Objectives, under “high-priority, no regrets activities” add an additional item: “g. Collaboration with the CAISO to assess operational impacts at the T-D interfaces and to consider operational coordination needs and approaches for managing such impacts.”
- In the description of demonstration project D (Roadmap p. 12) add an additional item: “f) address operational coordination with the ISO at the T-D interfaces with multiple DER and DER aggregations participating in the CAISO markets.”
- In the descriptions of demonstration projects D and E (Roadmap p. 12) include reference to the provision of transmission-level services, including imbalance energy, spinning and non-spinning reserves and regulation, by DER, DER aggregations and microgrids.

**2. Collaboration with the California Energy Commission (CEC), the CAISO, and stakeholders to define an effective process for developing DER growth scenarios.**

The Roadmap includes useful activities regarding DER growth scenarios, but also raises some process questions that should be addressed in 2016. Specifically, the Growth Scenario Workshop W3 proposed for February 2016 (Roadmap p. 11) and the Ruling R4 (Roadmap p. 12) indicate that the DRP proceeding will decide (1) the methodologies for developing DER growth scenarios, (2) how the growth scenarios will be used in the CEC Integrated Energy Policy Report (IEPR) demand forecast, and (3) how this will impact the procurement and planning processes that utilize the IEPR forecast. The Roadmap indicates that the DRP proceeding will make these decisions relatively early next year. At the same time, the diagram on page 18 of the Roadmap indicates that DER growth scenarios originate in the IEPR and are inputs from the IEPR into the DRP.

The CAISO suggests undertaking a collaborative effort beginning in the first quarter of 2016 to design processes for developing DER growth scenarios and to refresh the DER growth scenarios on a cyclical basis. The CAISO believes that this collaborative effort should include Commission, CEC, CAISO and stakeholder participation. The DER growth scenarios are a crucial foundational element for achieving the state’s energy goals, and will be used in future

DRP cycles as well as in transmission planning and state procurement activities. Depending on how the process is designed, development of DER growth scenarios may involve different activities performed by different parties in different venues, the results of which must be integrated into the set of scenarios that are formally adopted for use in procurement and planning.

The CAISO believes that the first quarter of 2016 would be the most opportune time to address this topic because the CEC will have just completed the 2015 IEPR cycle, with the next full IEPR demand forecast due at the end of 2017. Thus, 2016 would be the right time to focus on the specific activities and methodologies that would comprise an effective DER growth scenario development process, so that these methods could be applied during 2017 in developing the next full IEPR demand forecast. The following are some specific questions and issues that should be addressed in this effort.

- What activities are best performed by the utilities (*e.g.*, within the DRP process), the IEPR process (*e.g.*, within the Demand Analysis Working Group), or by other parties in other venues?
- If different elements of DER growth scenarios are developed by different parties in different venues, what is best the process for reconciling and integrating the elements? For example, the utilities might estimate bottom-up DER growth at the feeder level, versus top-down growth to be estimated within the IEPR. Also there may be different methods for forecasting behind-the-meter DER growth that would be incorporated as load-modifying elements in the IEPR demand forecast, versus WDAT interconnections on the utility side of the distribution system.
- What common methodologies should be established for maximizing consistency of approaches across the state?
- Procurement activities (*e.g.*, LTPP, RPS) and the CAISO's transmission planning process require the scenarios to be at least as granular as the T-D substation, while the IEPR as performed today only goes to the climate zone. What is the best way to ensure sufficient confidence in the more granular results?
- Forecasting methods have traditionally focused on total energy consumption and peak demand; whereas, in the future, more detailed load profile and load modifier characteristics will be important.

- The scenarios should reflect top-down and system-driven factors influencing DER growth, including state goals (*e.g.*, 12,000 MW of distributed generation), default time-of-use rate structures, and locational needs for transmission and distribution infrastructure deferment.
- The scenarios should reflect bottom-up factors that may have little correlation with system needs or locational benefits from the system perspective, such as autonomous customer adoption driven by local demographics, climate zone, and local government energy and environmental initiatives.

### **3. Relationship of the DRPs to the utilities' existing distribution planning processes.**

On November 6, the investor-owned utilities provided an informative explanation of the annual distribution planning processes (DPPs) they perform today. The presentations were appropriately designed to inform parties about current distribution planning. Thus, they did not consider how the existing DPPs might evolve in the future to reflect growth of DER or how they might be related to an ongoing cyclical DRP process if such a process were created by the Commission. Although the November 6 presentations were quite useful, there is considerable interest in more future-oriented questions.

The CAISO suggests that the larger framework that the DRP and IDER proceedings are developing would be incomplete without also considering how the existing DPPs fit into that framework. The CAISO suggests that such considerations will be important for the December 2016 and end of 2017 Decisions (D1 and D3, respectively) proposed in the Roadmap.<sup>1</sup> For example, the decisions whether to require a 2017 DRP filing and implement an ongoing update or refresh of the DRPs could depend on how the DPPs might evolve to incorporate some DRP-related activities, such as forecasting the growth of autonomous customer-driven behind-the-meter DER at the feeder level, and how the DPPs will provide opportunities for stakeholder input in the future.

The current and potential activities of the DPPs should also be taken into account in concert with developing DER growth scenarios as described in Section 2 above. Given the Roadmap's inclusion of Workshop W3 dedicated to DER growth scenarios, this workshop would

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<sup>1</sup> Roadmap at p. 15-16.

be an opportune time to include discussion of the DPPs in conjunction with initiation of a collaborative inter-agency process as suggested above.

#### **4. Definition and monetization of grid services that can be provided by DER.**

Section 4 of the Roadmap, Key Objectives, identifies the definition and monetization of grid services as one of the “more complex” issues, presumably to be addressed starting in 2018 following the issuance of Decision D3 at the end of 2017. The CAISO believes that this topic should be moved up to the high-priority list and initiated in 2016 if possible. One of the reasons why developers of DER are intently focused on CAISO market participation is because revenue opportunities from providing distribution-level services are not yet defined, even though several Commission proceedings have acknowledged that such services are potentially valuable. The CAISO believes that it would be beneficial to identify, with stakeholder input, a few key real-time distribution operational services — such as voltage support, power quality, and asset deferral — early in 2016 to begin to define performance requirements. The IDER proceeding could then consider the mechanisms whereby DER could competitively provide such services. This effort would advance the revenue opportunities for DER in a manner that supports further DER growth while simultaneously helping UDCs manage DER operational impacts in real time.

#### **5. Integrating DER across multiple agencies and planning and procurement activities.**

The Roadmap’s section on Key Objectives also identifies integration of DER across multiple agencies as one of the “more complex” issues. The CAISO believes this item should be elevated into the top priority category and initiated in 2016. As discussed in Section 2 above, defining an ongoing process for developing DER growth scenarios would naturally focus attention on the various other planning and procurement activities and proceedings that need to utilize such scenarios, and 2016 would be an opportune time to work on these inter-agency coordination issues in preparation for the next full IEPR demand forecast to be completed by the end of 2017.

### **III. Conclusion**

The CAISO looks forward to continuing its participation in this important proceeding, and in particular is prepared to work with the staff of the Commission and CEC and with the

utilities and stakeholders to assist the Commission working through the issues identified in the Roadmap.

Respectfully submitted,

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