

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

Order Instituting Rulemaking to Oversee the
Resource Adequacy Program, Consider Program
Refinements, and Establish Annual Local
Procurement Obligations.

Rulemaking 11-10-023
(Filed October 20, 2011)

**COMMENTS OF THE ENVIRONMENTAL DEFENSE FUND REGARDING
THE ENERGY DIVISION'S DECEMBER AND JANUARY 2014 WORKSHOPS**

SUBMITTED BY:
Jennifer Weberski
Environmental Defense Fund
1107 9th St., Suite 1070
Sacramento, CA 95814
Phone: (703) 489-2924
Email: jleesq@yahoo.com

Steven Moss
Partner, M.Cubed
325 Third Street, Suite 344
San Francisco, CA 94114
Phone: (415) 643-9578
Email: steven@moss.net

Dated: February 18, 2014

James Fine
Senior Economist
Environmental Defense Fund
123 Mission St., 28th Floor
San Francisco, CA 94601
Phone: (415) 293-6060
Email: jfine@edf.org

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

Order Instituting Rulemaking to Oversee the
Resource Adequacy Program, Consider Program
Refinements, and Establish Annual Local
Procurement Obligations.

Rulemaking 11-10-023
(Filed October 20, 2011)

**COMMENTS OF THE ENVIRONMENTAL DEFENSE FUND REGARDING
THE ENERGY DIVISION'S DECEMBER AND JANUARY 2014 WORKSHOPS**

I. INTRODUCTION

The Environmental Defense Fund (“EDF”) welcomes this opportunity to present

comments to the California Public Utilities Commission (“CPUC” or “Commission”) regarding the Energy Division’s Proposals, as presented in two workshops in December 2013 and January 2014.¹

EDF appreciates the work being done by the Energy Division to create more accessible pathways for energy storage (“ES”) and Demand Response (“DR”) to participate in California Independent System Operator (“CAISO”) markets. EDF also encourages the Commission to ensure that commensurate opportunities, incentives and institutional mechanisms are available for all types of demand response and energy storage, whether the resources participate on the supply side, or as part of load modification. Emerging markets developed by CAISO are steadily creating new opportunities for supply-side DR and storage resources to access wholesale markets. It is also important to ensure that sufficient pathways exist to fully incentivize demand-side resources to help modify loads in cost-effective ways that benefit the grid.

In addition, we offer the following comments related to the technical aspects of Energy Division’s proposals.

II. DISCUSSION

Qualifying Capacity and Effective Flexible Capacity Calculation Methodologies for Energy Storage and Supply-Side Demand Response Resources

The Staff Proposal recommends allowing ES and DR aggregation at the Sub-Load Aggregation Point (LAP) or Custom LAP levels. EDF supports the Staff Proposal to enable aggregated resources to provide performance data from a single aggregation point,

¹ EDF files the Comments pursuant to the August 2, 2013 Scoping Memorandum and ALJ Gamson’s February 4, 2014 Email Ruling amending the date of filing to February 18, 2014.

without reporting element performance regularly or in real time, as such an approach would reduce the administrative burdens associated with aggregation.

The Staff Proposal would require at least four consecutive hours of operation over three consecutive days for ES or DR to be RA eligible. EDF continues to question the technical advisability of such a blanket requirement, which will prohibit participation by potentially significant low-cost resources. This proposed condition appears to be a residual of the expected length of ramping periods in which flexible capacity may be required. However, as the grid continues to evolve so too will the characteristics needed for flexible capacity; it is not unlikely that at some point even 15 minutes of capacity, delivered in bursts just a few times a month, might provide a valuable contribution to ensuring reliability. In this context, EDF recommends that the Commission adopt a two consequence hour DR service period, and order the Energy Division to continue to expeditiously hone the time requirements associated with flexible capacity resources.

Effective Load Carrying Capacity and Qualifying Capacity Calculation Methodology for Wind and Solar Resources

The growing renewable capacity on the grid makes it increasingly important to develop integrated approaches to support intermittent, renewable generation in ways that maximize reliability while minimizing impact and cost. As a result, CAISO and the CPUC are grappling with methods to estimate renewables' production profiles, and how they may impact grid operations.

The concept of effective load carrying capability ("ELCC") is based on probabilistic modeling, which relies on historical data and statistical relationships to

predict likely system needs in the context of wind and solar contributions. While probabilistic modeling is conceptually superior to deterministic methods in its ability to capture likely future conditions, this approach is only as good as the model that serves as the analog of the actual system and the associated underlying data, particularly how well uncertainties in independent modeling inputs are understood and characterized (i.e., shape and spread of distribution of uncertain values).

ELCC is linked with a resource's Qualifying Capacity ("QC"), which reflects the number of megawatts ("MW") eligible to be counted towards meeting a load serving entity's system and local Resource Adequacy (RA) requirements, subject to deliverability constraints. QC is an important measure of a resource's value to the system, and translates into actual payments.

As the grid evolves it will be important to continually populate a probabilistic model with new data, including related to time-variant tariff adoption and resulting load profile shifts, and well as the presence of self-generation and storage resources. However, there is a trade-off between this dynamism and providing long-term QC value to attract more renewables into the market.

In *Effective Load Carrying Capacity and Qualifying Capacity Calculation Methodology for Wind and Solar Resources* Energy Division staff proposes that for RA purposes the model would be updated roughly every year, and result in new ELCC values roughly every two years. While EDF supports a plan for updating the ELCC calculation, the proposed pattern has a time-cycle that may be a mismatch with other proceedings in which key inputs are developed, particularly those being characterized as load modifiers,

such as tariffs and energy efficiency. EDF recommends that the Commission synchronize its RA modeling schedule to best incorporate inputs and updates in all relevant proceedings.

The Staff Proposal continues to base ELCC for solar and wind resources on a “perfect generator.” However, fossil fuel resources are not compared in the same fashion, though they are “subject to derating from the CAISO, reducing their qualifying capacity to their “dependable” capacity...and subject to the Standard Capacity Product (“SCP”), which penalizes facilities that are not available for a sufficiently high percentage of Availability Assessment Hours...”

The Staff Proposal asserts that the two different approaches result in commensurate outcomes, based on a literature review. However, they have not conducted an independent analysis evaluating how California-specific resources would fair under the two different treatments, including considering fossil fuel plant outages, forced and otherwise.² EDF recommends that the consequence of this disparate treatment be further examined.

The Staff Proposal model reflects 18 state regions, five technology types and twelve months, resulting in 1,080 different ELCCs. While this is an impressive number of “buckets,” given the potential speed at which technology is changing, as well as emerging opportunities to pair resources together (e.g., rooftop PV and storage), it would seem necessary to provide opportunities for even more ELCCs to be accommodated in the model, including allowing individual technology configurations or significant-sized

² See, SCE LTPP modeling, discussed below.

facilities to “petition” to be considered for a tailored ELCC. EDF recommends that the Commission adopt a transparent, accessible process through which technological innovation can be reflected in the model.

Moreover, the ELCC will lock-in an average value for solar and wind assets, which may be distinct from the actual incremental value of adding additional resources with particular characteristics. During the workshop, Staff agreed that this disparity existed, but said that it could not be easily addressed in the RA, and would be considered in other proceedings. EDF strongly encourages the Commission to close the loop on this issue, by specifically identifying the proceeding in which this issue will be addressed, and how that outcome will be linked back to Energy Division’s model.

III. CONCLUSION

EDF thanks the Commission for the opportunity to submit these comments and welcomes the opportunity to further participate in the additional workshops and comments.

Respectfully signed and submitted on February 18, 2014.

ENVIRONMENTAL DEFENSE FUND

/s/ Jennifer Weberski

Jennifer L. Weberski
Environmental Defense Fund
1107 9th St., Suite 1070
Sacramento, CA 95814
Phone: (703) 489-2924

Email: jleesq@yahoo.com

/s/ Steven Moss

Steven Moss
Partner, M.Cubed
2325 Third Street, Suite 344
San Francisco, CA 94114
Phone: (415) 643-9578
Email: steven@moss.net

/s/ James Fine

James Fine
Senior Economist
Environmental Defense Fund
123 Mission St, 28th Floor
San Francisco, California 94601
Phone – (415) 293-6060
jfine@edf.org