



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

FILED

04/02/24

04:59 PM

R2310011

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

R.23-10-011

**CALIFORNIA COMMUNITY CHOICE ASSOCIATION'S COMMENTS
ON PROPOSED INPUTS AND ASSUMPTIONS SERVM 2024 DATA
UPDATES IN SUPPORT OF RESOURCE ADEQUACY (RA) AND
INTEGRATED RESOURCE PLANNING (IRP)**

Evelyn Kahl,
General Counsel and Director of Policy
Andrew Mills,
Director of Data Analytics
Lauren Carr,
Senior Market Policy Analyst

CALIFORNIA COMMUNITY CHOICE
ASSOCIATION
One Concord Center
2300 Clayton Road, Suite 1150
Concord, CA 94520
Telephone: (510) 980-9459
E-mail: regulatory@cal-cca.org

April 2, 2024

TABLE OF CONTENTS

I. INTRODUCTION2

II. CALCCA SUPPORTS INCORPORATING THE EFFECTS OF CLIMATE CHANGE INTO THE WEATHER SCENARIOS.....3

III. ENERGY DIVISION SHOULD CONSIDER USING LOAD FORECAST ERRORS FROM HISTORICAL IEPR FORECASTS3

IV. ENERGY DIVISION SHOULD CONFIRM THAT ITS APPROACH SIMULATES BTM PV BASED ON HISTORICAL WEATHER PATTERNS WHEN RECONSTITUTING CONSUMPTION DEMAND, AS THE CEC DOES IN ITS NEW METHODOLOGY5

V. ENERGY DIVISION SHOULD ADJUST ITS METHODOLOGY FOR DEVELOPING WIND PRODUCTION PROFILES6

VI. ENERGY DIVISION SHOULD CONSIDER THE EFFECTS OF THERMAL DERATES DURING TIMES OF SYSTEM STRESS.....6

VII. ENERGY DIVISION SHOULD ENSURE BATTERY STORAGE RESOURCE ESTIMATED FORCED OUTAGE RATES ONLY REFLECT TRUE UNAVAILABILITY7

VIII. CONCLUSION.....8

TABLE OF AUTHORITIES

California Public Utilities Commission Proceedings

R.23-10-011 1

California Public Utilities Commission Rulings

Administrative Law Judge’s Ruling on Energy Division’s Proposed Inputs & Assumptions, R.23-10-011 (Mar. 18, 2024)..... 1

Assigned Commissioner’s Scoping Memo and Ruling, Rulemaking (R.) 23-10-011 (Dec. 18, 2023)..... 1

SUMMARY OF RECOMMENDATIONS

- California Community Choice Association supports incorporating the effects of climate change into the weather scenarios;
 - Energy Division should consider using load forecast errors from historical Integrated Energy Policy Report forecasts;
 - Energy Division should confirm that its approach simulates behind-the-meter photovoltaic based on historical weather patterns when reconstituting consumption demand, as the California Energy Commission does in its new methodology;
 - Energy Division should adjust its methodology for developing wind production profiles;
 - Energy Division should consider the effects of thermal derates during times of system stress; and
 - Energy Division should ensure battery storage resource estimated forced outage rates only reflect true unavailability.
-

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

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

R.23-10-011

**CALIFORNIA COMMUNITY CHOICE ASSOCIATION'S COMMENTS
ON PROPOSED INPUTS AND ASSUMPTIONS SERVM 2024 DATA
UPDATES IN SUPPORT OF RESOURCE ADEQUACY (RA) AND
INTEGRATED RESOURCE PLANNING (IRP)**

California Community Choice Association¹ (CalCCA) submits these comments pursuant to *Assigned Commissioner's Scoping Memo and Ruling*² (Ruling), dated December 18, 2023 and *Administrative Law Judge's Ruling on Energy Division's Proposed Inputs & Assumptions*³ (ALJ Ruling), dated March 18, 2024. The Ruling and the ALJ Ruling both provide direction for comments on the Proposed Inputs and Assumptions SERVM 2024 Data Updates in Support of Resource Adequacy (RA) and Integrated Resource Planning (IRP) (I&A document), dated March 2024, Attachment A to the ALJ Ruling.

¹ California Community Choice Association represents the interests of 24 community choice electricity providers in California: Apple Valley Choice Energy, Ava Community Energy, Central Coast Community Energy, Clean Energy Alliance, Clean Power Alliance, CleanPowerSF, Desert Community Energy, Energy For Palmdale's Independent Choice, Lancaster Energy, Marin Clean Energy, Orange County Power Authority, Peninsula Clean Energy, Pico Rivera Innovative Municipal Energy, Pioneer Community Energy, Pomona Choice Energy, Rancho Mirage Energy Authority, Redwood Coast Energy Authority, San Diego Community Power, San Jacinto Power, San José Clean Energy, Santa Barbara Clean Energy, Silicon Valley Clean Energy, Sonoma Clean Power, and Valley Clean Energy.

² *Assigned Commissioner's Scoping Memo and Ruling*, Rulemaking (R.) 23-10-011 (Dec. 18, 2023): <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M521/K589/521589385.PDF>.

³ *Administrative Law Judge's Ruling on Energy Division's Proposed Inputs & Assumptions*, R.23-10-011 (Mar. 18, 2024): <https://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=527532337>.

I. INTRODUCTION

CalCCA greatly appreciates the efforts of Energy Division staff to develop the inputs, assumptions, and methodologies described in the I&A document that will be used to support the RA and IRP proceedings, R.23-10-011 and R.20-05-003, respectively. These proceedings depend heavily on robust modeling to assess reliability, green-house gas (GHG) emissions, and production costs under sets of assumed loads, resource portfolios, and transmission infrastructure. In the context of IRP, modeling focuses on system reliability, GHG emissions targets, and production costs at least 10 years forward to determine the level of new capacity procurement that must take place to achieve a reliable and cost-effective electric system while meeting state policy goals long term. In the context of RA, modeling focuses on system reliability over the immediate year or couple of years to ensure the setting of RA requirement sufficient to operate the electric system reliably near term. The California Public Utilities Commission (Commission) should strive to conduct regular IRP and RA modeling such that the IRP proceeding identifies reliability needs with sufficient time to allow for orderly procurement of new resources in time for the RA program to set planning reserve margins (PRM) that continually meet a 1-in-10 loss-of-load expectation (LOLE).

To further refine Energy Division's proposed inputs and assumptions, CalCCA offers the following recommendations:

- CalCCA supports incorporating the effects of climate change into the weather scenarios;

- Energy Division should consider using load forecast errors from historical Integrated Energy Policy Report (IEPR) forecasts;
- Energy Division should confirm that its approach simulates behind-the-meter (BTM) photovoltaic (PV) based on historical weather patterns when reconstituting consumption demand, as the California Energy Commission (CEC) does in its new methodology;
- Energy Division should adjust its methodology for developing wind production profiles;
- Energy Division should consider the effects of thermal derates during times of system stress; and
- Energy Division should ensure battery storage resource estimated forced outage rates only reflect true unavailability.

II. CALCCA SUPPORTS INCORPORATING THE EFFECTS OF CLIMATE CHANGE INTO THE WEATHER SCENARIOS

Energy Division staff quantified the additional perfect capacity required to reach the same level of reliability when using climate-informed profiles of future load compared to using historical load profiles from 2000-2022.⁴ CalCCA supports incorporating the effects of changing climate into reliability modeling. The Commission should use electric consumption shapes informed by climate change as recommended by Energy Division staff.

III. ENERGY DIVISION SHOULD CONSIDER USING LOAD FORECAST ERRORS FROM HISTORICAL IEPR FORECASTS

To set a planning reserve margin that achieves a reliability target of a 0.1 events/year LOLE, the Strategic Energy Risk Valuation Model (SERVM) model considers variability and uncertainty in load and generation. Load variability is modeled with 23 different weather profiles calibrated to the 1-in-2 load forecast from the CEC 2023 IEPR California Electric Demand 2023-2040 “Planning Scenario” Forecast.⁵ Because of uncertainty, the 1-in-2 load forecast from the 2023 IEPR will not perfectly match the 1-in-2 weather normalized peak load in 2025. SERVM

⁴ I&A document at 24.

⁵ I&A document at 9.

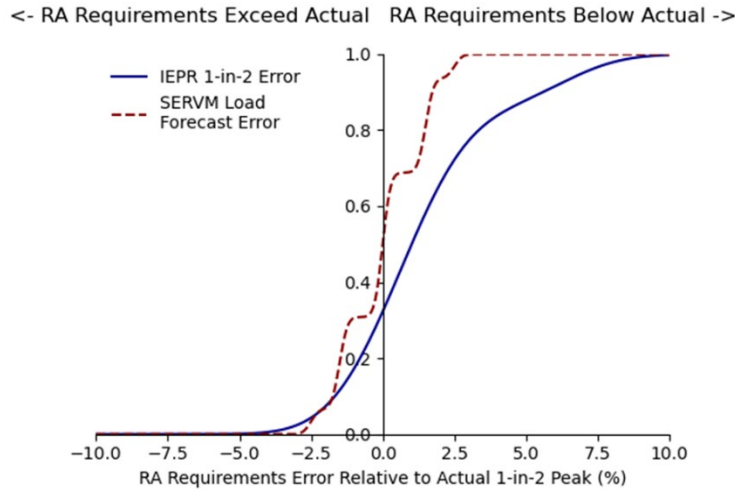
includes five points of economic load forecast error to ensure that the planning reserve margin is sufficient to accommodate the load forecast uncertainty. However, CalCCA has pointed out in previous comments⁶ that the economic load forecast error used in SERVVM is derived from a European Central Bank survey of professional forecasters, rather than California’s experience forecasting the 1-in-2 peak load. The Commission should consider using load forecast errors from historical IEPR forecasts.

To demonstrate how this could be done, CalCCA calculated the 1-in-2 peak load forecast error from previous IEPR forecasts as the difference between the 1-in-2 coincident peak CAISO load in the year of the IEPR forecast (the “base year” forecast) and the 1-in-2 load forecast for the same base year from the IEPR forecast vintage two years prior. For example, the load forecast error of the 2023 IEPR vintage is the difference in the 2023 planning year forecast from the 2023 IEPR vintage and the 2023 planning year forecast from the 2021 IEPR vintage. This two-year lead time was chosen because the RA requirements are set using an IEPR forecast vintage two years prior to the operating year. Seven 1-in-2 load forecast errors can be observed from the nine IEPR forecast vintages between 2015 and 2023. Whereas SERVVM currently models load forecast errors were roughly 90 percent between –2.5 percent to 2.5 percent, experience with forecasting 1-in-2 peak coincident load in California suggests 90 percent of load forecast errors are between –2.4 percent to 7.0 percent. Figure 1 illustrates this difference using cumulative probability distribution load forecast errors from the SERVVM model parameters and the observed IEPR load forecast errors.

⁶ *California Community Choice Association’s Informal Comments on the Draft Inputs and Assumptions (2023 I&A)* at 4: <https://cal-cca.org/wp-content/uploads/2023/07/Final-Informal-Comments-on-Draft-2023-IA-Document-06-21-23.pdf>.

Figure 1.

Comparison of load forecast errors from historical IEPR load forecasts to load forecast errors in SERVM



IV. ENERGY DIVISION SHOULD CONFIRM THAT ITS APPROACH SIMULATES BTM PV BASED ON HISTORICAL WEATHER PATTERNS WHEN RECONSTITUTING CONSUMPTION DEMAND, AS THE CEC DOES IN ITS NEW METHODOLOGY

The proposed approach for developing electric demand profiles requires reconstituting the counterfactual consumption demand for 2020-2022. Energy Division staff state that they will add simulated BTM PV to the hourly historical electric sales data reported by the California Independent System Operator Corporation (CAISO). The proposed approach is similar to the approach used by the CEC in the development of the California Energy Demand (CED) forecast. For the most recent 2023 CED, the CEC shifted from using a normal BTM PV profile to using historical generation data.⁷ The normal profile slightly underestimated the impact of BTM PV on clear days and significantly overstated the impact on cloudy days.⁸ Adjusting the method to use historical BTM PV profiles when reconstituting consumption demand resulted in consumption

⁷ CEC Hourly Electricity Demand Presentation (December 18, 2023) at Slide 14: <https://efiling.energy.ca.gov/GetDocument.aspx?tn=253660&DocumentContentId=88907>.

⁸ *Id.* at Slide 15.

shapes that were better aligned with historical demand.⁹ Given the improvements found by the CEC, the Commission should confirm that its approach also simulates BTM PV based on historical weather patterns when reconstituting consumption demand.

V. ENERGY DIVISION SHOULD ADJUST ITS METHODOLOGY FOR DEVELOPING WIND PRODUCTION PROFILES

Energy Division staff describe an approach for developing normalized wind profiles that uses random draws from historically observed production values.¹⁰ It is not clear from the description whether the random draws are done for individual hours then the individual values are sequenced together to create an hourly profile for the year, or if the random draws are of a year-long hourly profile. If the proposed method randomly draws individual hours, it creates a risk of introducing excessive hour-to-hour ramps in the wind profiles. Wind power in one hour is often strongly correlated with wind in the previous hour. The Commission should therefore verify that the autocorrelation of the synthesized wind profiles matches the autocorrelation of historical wind generation patterns.

VI. ENERGY DIVISION SHOULD CONSIDER THE EFFECTS OF THERMAL DERATES DURING TIMES OF SYSTEM STRESS

Energy Division staff propose to derate thermal plants based on ambient temperature using regressions of historical ambient derates and ambient temperature. CalCCA supports the approach, though important details are not provided in the I&A document. In particular, the thermal derates are most important to get right at the time that the system is most stressed. The I&A document presents monthly variation in thermal derates but does not show how the thermal derates vary with hourly changes in ambient temperature. Because loads and system stress are often highest when the ambient temperature is highest, it is important that the regression

⁹ *Id.* at Slide 16.

¹⁰ I&A document at 27.

parameters capture the relationship of thermal derates and temperature at the extremes more so than during average conditions. The Commission should present the accuracy of the regression model for high load conditions and confirm that thermal derates are based on hourly variation in ambient temperature.

VII. ENERGY DIVISION SHOULD ENSURE BATTERY STORAGE RESOURCE ESTIMATED FORCED OUTAGE RATES ONLY REFLECT TRUE UNAVAILABILITY

The I&A document explains that because battery storage resources do not yet report to the North American Electric Reliability Corporation’s Generating Availability Data System, it uses data from the CAISO’s outage management system to estimate energy storage forced outage rates. Specifically, “[s]taff engaged in a series of meetings to review the CAISO curtailment outage types and natures-of-work with various stakeholders to determine which curtailments should be included in [the effective forced outage rate (EFOR)],” and provided a list of the forced outage natures-of-work in its calculation.¹¹ The Commission, in collaboration with the CAISO, should provide increased transparency regarding the natures-of-work the Commission included in its calculation and under what conditions battery storage resources are expected to submit such outages that will impact the resources EFOR. This will ensure the calculation only includes true resource unavailability because of a forced outage rather than apparent unavailability due to the economics of CAISO market dispatch of a use-limited resource.

¹¹ I&A document at 34.

VIII. CONCLUSION

For all the foregoing reasons, CalCCA respectfully requests consideration of the comments herein and looks forward to an ongoing dialogue with the Commission and stakeholders.

Respectfully submitted,

A handwritten signature in blue ink that reads "Evelyn Kahl". The signature is written in a cursive style.

Evelyn Kahl,
General Counsel and Director of Policy
CALIFORNIA COMMUNITY CHOICE
ASSOCIATION

April 2, 2024