

Decision 22-08-039 August 25, 2022

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.

Rulemaking 21-10-002

**DECISION ADDRESSING REGIONAL WIND EFFECTIVE
LOAD CARRYING CAPABILITY VALUES AND
DEMAND RESPONSE QUALIFYING
CAPACITY METHODOLOGY**

Summary

This decision adopts regional wind effective load carrying capability values for the 2023 Resource Adequacy (RA) year and addresses the demand response qualifying capacity methodology for the 2023 and 2024 RA years.

This proceeding remains open.

1. Background

In Decision (D.) 21-06-029, the California Public Utilities Commission (Commission) adopted a biennial schedule for updates to the Effective Load Carrying Capability (ELCC) values for wind and solar resources and stated that the first update would occur in 2022 for the 2023 Resource Adequacy (RA) year, with subsequent updates occurring in every even year.¹ Energy Division was

¹ D.21-06-029 at Ordering Paragraph 14.

also directed to develop regional ELCC values for wind resources for consideration.²

The Commission adopted updated ELCC values for solar and wind for the 2023 RA year in D.22-06-050. In D.22-06-050, the Commission noted that Energy Division's Regional Wind ELCC Study was issued into the proceeding on June 1, 2022. D.22-06-050 stated that the Commission would endeavor to adopt regional wind values for the 2023 RA year.³ An Administrative Law Judge's (ALJ) June 1, 2022 ruling attached Energy Division's Regional Wind ELCC Study and established a comment schedule. A subsequent ALJ's ruling was issued on June 9, 2022, correcting clerical errors in the study results. On June 13, 2022, comments on the study were filed by the California Independent System Operator Corporation (CAISO), LS Power Development, LLC (LS Power), Offshore Wind California, the Public Advocates Office (Cal Advocates), and jointly by Southwestern Power Group II, LLC and Pattern Energy Group LP (SWPG/Pattern). On June 17, 2022, reply comments were filed by Offshore Wind California.

In D.22-06-050, the Commission also considered proposals for a new Qualifying Capacity (QC) methodology for demand response (DR) resources for the 2023 RA year, as provided in the California Energy Commission's (CEC) Working Group Report. In that decision, the Commission stated that it deemed California Large Energy Consumers Association's (CLECA) Loss of Load Probability (LOLP)-weighted load impact protocol (LIP) methodology to be a reasonable interim QC methodology for investor-owned utilities (IOU) and

² *Id.* at Ordering Paragraph 15.

³ D.22-06-050 at 24.

third-party DR resources.⁴ CLECA's methodology proposed using loss of load expectation (LOLE)-derived LOLP weights to develop a QC value that more heavily weights load impacts during hours with a higher LOLE value.⁵

D.22-06-050 also stated that the CEC's 2021 Mid-Term Reliability Staff Report and LOLE study (LOLE study) could be an appropriate basis for the LOLP-weighted LIP proposal, but deferred adoption of CLECA's methodology to a future decision, citing the need for parties and the Commission to have the opportunity to first vet the CEC's LOLE study.⁶

On May 31, 2022, an Assigned Commissioner's Ruling was issued providing guidance for submission of the results of the CEC's LOLE study. On June 7, 2022, the CEC served a Notice of Availability for the requested information on the service list for this proceeding. On June 8, 2022, an ALJ's Ruling was issued requesting comments on the CEC's LOLE study. On June 20, 2022, comments were filed by CLECA, San Diego Gas & Electric Company (SDG&E), and Southern California Edison Company (SCE). On June 27, 2022, reply comments were filed by CLECA and Pacific Gas and Electric Company (PG&E).

2. Regional Wind Effective Load Carrying Capability Values

Energy Division's Regional Wind ELCC Study provides average monthly regional wind ELCC results for six regions: Northern California (CAISO), Southern California (CAISO), Northeast Out of State Wind (Wyoming/Idaho), Northwest Out of State Wind (Washington/Oregon), Southwest Out of State

⁴ D.22-06-050 at 39.

⁵ *Ibid.* at 33.

⁶ *Ibid.* at 39.

Wind (Arizona/New Mexico), and Offshore Wind. The study results indicate that monthly ELCC values in non-summer months range from 20 to 40 percent, with a decline to approximately 15 to 20 percent in summer for all regions except Offshore Wind. In contrast to the other regions, Offshore Wind summer ELCC values increase to approximately 45 to 55 percent. Study results also demonstrate that despite greater annual energy production from Southern California wind, monthly ELCC values for Southern California wind were lower, on average, than Northern California wind. The study attributes this result to the lower relative wind output of Southern California wind resources during the times of high CAISO net load. Table 1 below summarizes the average monthly regional wind ELCC values from the analysis.

Table 1: Average Monthly Wind ELCC Values

Month	WY/ID	WA/OR	AZ/NM	Offshore	NorCal	SoCal
Jan	38%	21%	34%	35%	33%	18%
Feb	38%	25%	36%	39%	35%	19%
Mar	42%	30%	40%	36%	31%	17%
Apr	38%	25%	35%	29%	33%	16%
May	28%	19%	26%	31%	34%	17%
Jun	23%	20%	22%	44%	25%	15%
Jul	24%	22%	21%	56%	23%	14%
Aug	26%	19%	23%	53%	21%	11%
Sep	31%	19%	28%	43%	22%	11%
Oct	40%	23%	33%	37%	18%	10%
Nov	44%	25%	34%	39%	23%	14%
Dec	41%	22%	34%	38%	29%	17%

Energy Division utilized the Strategic Energy and Risk Valuation Model (SERVM) to conduct the analysis and built upon the ELCC studies in the February 18, 2022 Energy Division report “Loss of Load Expectation and

Effective Load Carrying Capability Study Results for 2024,” specifically utilizing Scenario D to approximate a realistic assumption of new resources that would be online in 2023. The study notes that while Scenario D approximates an assumption of new resources online in 2023, all other model assumptions use 2024 projections.

2.1.1. Comments on Regional Wind Effective Load Carrying Capability Values

No party opposes using the results of Energy Division’s Regional Wind ELCC study. LS Power and SWPG/Pattern endorse using the results.⁷ LS Power agrees with the use of Portfolio D in the study, identifying that it is consistent with the March 2022 LOLE report and that it approximates a realistic assumption of new resources that will be online in 2023 given likely supply chain constraints. LS Power also states that the study shows that reliability contributions vary based on region, and that regional ELCC values should be adopted to accurately reflect this.⁸ SWPG/Pattern assert that more accurately reflecting the value of wind across the regions will improve resource counting accuracy, send appropriate market signals for buyers of capacity, and align the RA program with the Integrated Resource Planning process.⁹

⁷ LS Power Development, LLC Opening Comments on ALJ’s Ruling on Energy Division’s Regional Wind Effective Load Carrying Capability Study, June 13, 2022 at 2; Southwestern Power Group II, LLC and Pattern Energy Group LP Opening Comments on E-mail Ruling Attaching Energy Division’s Revised Regional Wind Effective Load Carrying Capability Study, June 13, 2022 at 2.

⁸ LS Power Development, LLC Opening Comments on ALJ’s Ruling on Energy Division’s Regional Wind Effective Load Carrying Capability Study, June 13, 2022 at 2.

⁹ Southwestern Power Group II, LLC and Pattern Energy Group LP Opening Comments on E-mail Ruling Attaching Energy Division’s Revised Regional Wind Effective Load Carrying Capability Study, June 13, 2022 at 2-3.

CAISO identifies that adoption of regional wind ELCC values for the 2023 RA year will require it to change its internal processes, which it states will require coordination with Energy Division staff. To address this, it requests that Energy Division staff provide information for any process changes that are needed to ensure consistency with the current process while accommodating regional wind values as part of implementation this year.¹⁰

Various parties request additional transparency and information on both the data used in the study and the results of the study.

Cal Advocates requests that the regional boundaries used in the study be made publicly available to better inform evaluation and optimal placement of wind resources.¹¹ It specifically requests this be done through an update to the Qualifying Capacity (QC) Methodology Manual.

LS Power requests that analysis that was conducted for wind resources in CAISO regions also be conducted for wind resources in non-CAISO regions. LS Power specifically requests that 1) the average summer daily percentage of wind max output for June through September, and 2) the average percentage of wind max output during net load peak hours be produced for non-CAISO regions.¹²

SWPG/Pattern recommend greater transparency on the regional wind data used for the study, particularly for non-CAISO regions, in order to better understand how wind profiles for the out-of-state and offshore regions were developed. They also request that for any future updates to the analysis, data be

¹⁰ Comments on ALJ's Ruling on Regional Wind Effective Load Carrying Capability Study of the California Independent System Operator Corporation, June 13, 2022 at 2.

¹¹ Comments of the Public Advocates Office on the Energy Division Study for Proceeding Rulemaking 21-10-002: Regional Wind Effective Load Carrying Capability, June 13 2022 at 2-3.

¹² LS Power Development, LLC Opening Comments on ALJ's Ruling on Energy Division's Regional Wind Effective Load Carrying Capability Study, June 13, 2022 at 3.

provided from operating wind projects, and that New Mexico and Arizona wind data be disaggregated.¹³

While Offshore Wind California emphasizes that the study demonstrates offshore wind has high average monthly ELCC values overall, it requests access to the underlying data and assumptions used for the analysis in order to comment on the accuracy of the specific values.¹⁴

Finally, SWPG/Pattern request that the regional wind ELCC values be finalized in time to be used for the upcoming 2023 CAISO Maximum Import Capability (MIC) process, which begins July 1, 2022.¹⁵

2.1.2. Discussion of Regional Wind Effective Load Carrying Capability Values

The Commission concurs with LS Power and SWPG/Pattern who endorse the results of the study. The Commission finds Energy Division's methodology and results to be reasonable. We find that providing a more accurate reflection of the value of wind resources across regions will improve resource counting accuracy, send appropriate market signals for buyers of capacity, and align the RA program with the Integrated Resource Planning process. All of these outcomes are beneficial to the RA program and to ratepayers. The Commission therefore determines that the monthly regional wind ELCC values from Energy Division's study are appropriate to apply for the 2023 RA year and beyond, and should be adopted.

¹³ Southwestern Power Group II, LLC and Pattern Energy Group LP Opening Comments on E-mail Ruling Attaching Energy Division's Revised Regional Wind Effective Load Carrying Capability Study, June 13, 2022 at 2-3.

¹⁴ Comments of Offshore Wind California on ALJ's Ruling on Energy Division's Regional Wind Effective Load Carrying Capability Study, June 13, 2022 at 2-3.

¹⁵ Southwestern Power Group II, LLC and Pattern Energy Group LP Opening Comments on E-mail Ruling Attaching Energy Division's Revised Regional Wind Effective Load Carrying Capability Study, June 13, 2022 at 3.

The Commission also recognizes the need for CAISO to make manual changes to its process for the 2023 RA year and finds it reasonable for Energy Division to work with CAISO on a manual process. Energy Division is therefore requested to coordinate with CAISO to implement the regional wind ELCC values for the 2023 RA year.

In addition, we see merit in providing additional transparency to parties and the public on the underlying data and results of the analysis. Doing so will better inform overall understanding of the results. We see particular benefit to the RA program in implementing Cal Advocates' recommendation to update the QC Methodology Manual to make clear the regional boundaries used in the study, and request that Energy Division publish an update to the QC Methodology Manual as soon as practicable following the adoption of these values. We also encourage Energy Division to publicly provide additional information of the kind requested by parties, including additional analysis on wind resources in non-CAISO regions, as well as provide more transparency on wind profile data. Any additional information that is shared should be published on the CPUC website and a notice of availability should be served to the service list of this proceeding.

We finally note that the CAISO MIC process was already initiated on July 1, 2022; therefore the request from SWPG/Pattern to finalize the regional ELCC values in advance of the MIC process is moot.

3. Qualifying Capacity of Demand Response Resources

Pursuant to the Commission's stated intention in D.22-06-050, the CEC's LOLE study has been vetted in this proceeding for consideration as to whether the LOLP-weighted LIP proposal should be adopted as an interim QC methodology for DR resources.

Commenting parties express varying degrees of concern with the underlying data and results of the CEC's LOLE study, with CLECA, SCE and SDG&E identifying that the LOLE study produced only one expected unserved energy event in August and zero expected unserved energy events in June.¹⁶

While CLECA acknowledges there is not a clear explanation for the August results, it hypothesizes that the absence of events in June could be attributed to higher solar and hydroelectric resources relative to later months.¹⁷ These results notwithstanding, CLECA recommends using the CEC's LOLE study but with modifications to its original methodology to shift the load reduction profile from 4pm to 6pm for DR programs that may have customer fatigue issues.¹⁸

SCE, SDG&E and PG&E caution against using the analysis to develop an interim QC methodology for DR resources until the data and methodology for the CEC's LOLE study are better understood. Until that time, they recommend maintaining the existing LIP methodology.¹⁹ SCE identifies questions regarding non-LOLE event months and the treatment of non-summer months.²⁰ SCE also has concerns that the lag time between the data used to develop weights through

¹⁶ CLECA Comments on California Energy Commission's Mid-Term Reliability Analysis Supporting Data, June 20, 2022 at 4-5; Response of San Diego Gas & Electric Company (U902E) to ALJ's Ruling on California Energy Commission's Mid-Term Reliability Analysis Supporting Data, June 20, 2022 at 3-4; Opening Comments of Southern California Edison Company (U8E) on the ALJ's Ruling on California Energy Commission's Mid-Term Reliability Analysis Supporting Data, June 20, 2022 at 3.

¹⁷ CLECA Comments on California Energy Commission's Mid-Term Reliability Analysis Supporting Data, June 20, 2022 at 5.

¹⁸ *Ibid.* at 5-7.

¹⁹ *Ibid.* at 4; *Ibid.* at 4; *Ibid.* at 2.

²⁰ Opening Comments of Southern California Edison Company (U8E) on the ALJ's Ruling on California Energy Commission's Mid-Term Reliability Analysis Supporting Data, June 20, 2022 at 3.

the LIP process and the data used for the CEC analysis could provide inaccurate results.²¹

The Commission finds insufficient record support for use of the CEC's supporting data from its LOLE study and for adopting the LOLP-weighted LIP methodology. We agree with parties that additional understanding of the underlying data and results of the study would be needed before adopting an interim DR QC methodology for the 2023 RA year. We also identify that CLECA recommends in its comments an adjustment to its original methodology. The implications of a departure from the methodology that was included in the CEC Working Group report would also need to be studied and understood before adoption. As such, we decline to adopt an interim DR QC methodology at this time and the existing LIP methodology shall remain in place for the 2023 RA year, unless and until superseded by another methodology.

In D.22-06-050, the Commission requested that the CEC Working Group develop long-term recommendations for a new DR QC methodology for the 2025 RA year.²² In addition, the Commission stated that a test year shall be considered for the 2024 RA year prior to full implementation of the 24-hour framework in 2025.²³

In the Future of Resource Adequacy Working Group Report, as well as in comments,²⁴ CLECA recommends that LIP values should be applied to the

²¹ *Ibid.* at 3-4.

²² D.22-06-050 at Ordering Paragraph 11.

²³ D.22-06-050 at Ordering Paragraph 15.

²⁴ *Future of Resource Adequacy Working Group Report*, February 28, 2022, at 69-72; CLECA Comments on Proposed Decision, June 9, 2022, at 6.

24-hour slice framework. CLECA notes that there is a gap for a DR counting methodology for the 2024 test year prior to full implementation in 2025.

The Commission recognizes the need for a DR counting methodology for use in the 2024 test year and finds it reasonable to apply the LIP methodology to the 2024 test year. However, LSEs need further guidance on how to utilize the LIP outputs under the 24-hour slice framework. For *example*, guidance is needed on the number of hours a DR resource can be shown, whether the hours must be consecutive, whether the hours must be during the Availability Assessment hours, and whether transmission and planning reserve margin adders would apply. It also must be determined whether an average value should be shown for each hour or whether the value would vary by hour in the RA showing. Finally, CLECA has proposed that additional capacity be shown to account for snap back effects.

As such, parties are directed to develop proposals for how to utilize the LIP outputs under the 24-hour slice framework for the 2024 test year in Workstream 2 of the Reform Track. We recognize, however, that parties have established a schedule for the Reform Track Workstreams, as directed in D.22-06-050, and that some workshops will take place before this decision is issued. Therefore, we direct Energy Division to facilitate the first workshop on LIP utilization for the 2024 test year. Energy Division shall notice the first workshop as soon as practicable to the service list in this proceeding. Any subsequent workshops and process will be added into the Workstream 2 schedule and output.

In developing a proposal, parties shall address:

1. The hours in which DR resources can be shown and whether those hours must be consecutive.

2. Whether the transmission and planning reserve margin adders should be applied.
3. Whether or not the value of DR resources can vary by hour.
4. Whether, and if so, how, snap back effects should be accounted for. Parties shall submit their proposals on LIP utilization approach through Workstream 2 according to the schedule adopted in D.22-06-050.

4. Comments on Proposed Decision

The proposed decision of ALJs Chiv and O'Rourke in this matter was mailed to the parties in accordance with Section 311 of the Public Utilities Code and comments were allowed under Rule 14.3 of the Commission's Rules of Practice and Procedure. Comments were filed on August 9, 2022 by Advanced Energy Economy (AEE), California Efficiency + Demand Management Council (CEDMC)/Leapfrog, LS Power, SWPG/Pattern, and SCE, and reply comments were filed on August 15, 2022 by PG&E.

All comments have been carefully considered. Aspects of the proposed decision that have been revised in light of comments are discussed in this section.

SWPG/Pattern and AEE comment requesting Energy Division be directed to release the underlying data for the Regional Wind ELCC Study. This decision already encourages Energy Division to provide the requested data, which is sufficient for ensuring transparency around the underlying data is prioritized.

CEDMC/Leapfrog, SCE and PG&E comment regarding the timing to implement changes to the LIP methodology for the 2024 RA year and for a proposed decision in Q1 2023. At this time, the Commission is not considering changes to the LIP methodology in Workstream 2. Rather, parties are directed to develop proposals for how to utilize the load impact results produced by the

status quo LIP methodology under the 24-hour slice framework. The language in the decision has been modified accordingly to clarify this point.

CEDMC/Leapfrog also request 1) that consideration of snap back effects be removed from the list of required elements for LIP utilization proposals, as the timeline for proposals is short; and 2) the scope of LIP revisions should include consideration of whether all protocols are needed. We decline to remove the snap back issue from the list. We do, however, acknowledge the timeline is short and this acknowledgment is captured in the explicit language of the requirement, which states parties shall identify “*whether* [emphasis added], and if so, how, snap back effects should be accounted for.” With regard to the request to revisit protocols, as clarified above, we are not considering changes to the LIP methodology at this time, so this request is out of scope.

5. Assignment of Proceeding

President Alice Reynolds is the assigned Commissioner and Debbie Chiv and Shannon O’Rourke are the assigned ALJs in this proceeding.

Findings of Fact

1. D.22-06-050 requested that Energy Division submit the results of its Regional Wind ELCC study as soon as practicable for party comment to endeavor to adopt regional wind values for the 2023 RA year.
2. Energy Division’s Regional Wind ELCC study was issued on June 1, 2022 for party comment.
3. More accurately reflecting the value of wind across the regions will improve resource counting accuracy, send appropriate market signals for buyers of capacity and align the RA program with the Integrated Resource Planning process.

4. D.22-06-050 deferred adoption of an interim DR QC methodology to a future decision, pending parties and the Commission having the opportunity to vet the CEC's LOLE study as a potential basis for CLECA's LOLP-weighted LIP proposal.

5. There is insufficient record support for use of the CEC's supporting data from its LOLE study and for adopting the LOLP-weighted LIP methodology.

6. While it is reasonable to apply the LIP methodology to the 2024 test year, further guidance is needed about how to utilize the LIP outputs under the 24-hour slice framework.

Conclusions of Law

1. The Commission should adopt the monthly regional wind ELCC values from Energy Division's Regional Wind ELCC study for the 2023 RA year and beyond.

2. Parties should develop proposals for how to utilize the LIP outputs under the 24-hour slice framework for the 2024 test year in Workstream 2.

O R D E R

IT IS ORDERED that:

1. The following regional Effective Load Carrying Capability (ELCC) values for wind are adopted beginning in the 2023 Resource Adequacy year:

Average Monthly Wind ELCC Values

Month	WY/ID	WA/OR	AZ/NM	Offshore	NorCal	SoCal
Jan	38%	21%	34%	35%	33%	18%
Feb	38%	25%	36%	39%	35%	19%
Mar	42%	30%	40%	36%	31%	17%
Apr	38%	25%	35%	29%	33%	16%
May	28%	19%	26%	31%	34%	17%
Jun	23%	20%	22%	44%	25%	15%
Jul	24%	22%	21%	56%	23%	14%
Aug	26%	19%	23%	53%	21%	11%
Sep	31%	19%	28%	43%	22%	11%
Oct	40%	23%	33%	37%	18%	10%
Nov	44%	25%	34%	39%	23%	14%
Dec	41%	22%	34%	38%	29%	17%

2. Parties shall develop proposals for how to utilize the Load Impact Protocol outputs under the 24-hour slice framework for the 2024 test year in Workstream 2 of this proceeding. Parties shall submit proposals according to the schedule adopted in Decision 22-06-050. The proposals shall address:

- (a) The hours in which demand response resources can be shown and whether those hours must be consecutive.
- (b) Whether the transmission and planning reserve margin adders should be applied.
- (c) Whether or not the value of demand response resources can vary by hour.
- (d) Whether, and if so, how, snap back effects should be accounted for.

3. Energy Division shall facilitate the first workshop on how to utilize the outputs of the Load Impact Protocols under the 24-hour slice framework for the 2024 test year in Workstream 2 of this proceeding.

4. Rulemaking 21-10-002 remains open.

This order is effective today.

Dated August 25, 2022, at San Francisco, California

ALICE REYNOLDS

President

CLIFFORD RECHTSCHAFFEN

GENEVIEVE SHIROMA

DARCIE L. HOUCK

JOHN REYNOLDS

Commissioners