Load Impact Protocol Process Guide

VERSION 7~~6~~.0

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California Public Utilities Commission

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I. Introduction and Purpose of This Guide

The Guide to the California Public Utilities Commission's (CPUC's) Load Impact Protocols (LIPs) Process (Guide) is a compilation of the Energy Division's interpretation of the CPUC's Decisions in Resource Adequacy (RA) and Demand Response proceedings. This Guide is intended to serve as a convenient reference point for Demand Response Providers (DRPs)[1] and Load Serving Entities (LSEs) interested in seeking Resource Adequacy (RA)-eligible Qualifying Capacity (QC) for their Demand Response (DR) resources.

A key step in the determination of RA-eligible QC of DR resources is a review by Energy Division, in collaboration with California Energy Commission staff, of applicable CPUC policies and the LIP data to establish the load impact levels that could be counted for reliability. RA is one of the most important responsibilities of the CPUC, as it is the cornerstone program to ensure reliable electricity service to California ratepayers. The RA rules set by the CPUC and the California Independent System Operator only function if it is demonstrated that resources with assigned capacity values are, in fact, able to perform. Pursuant to Decision 08-04-050,[2] the CPUC delegated authority to Energy Division to establish the DR capacity that can be counted on with confidence for RA.

This Guide is updated periodically to reflect current Decisions and requirements. Although the Guide is organized for quick reference, the filing party is encouraged to review the Guide *and* the actual Load Impact Protocols in their entirety to become familiar with the requirements. To the extent that this Guide may be incomplete or may not address a particular issue, the reader is encouraged to consult the related CPUC Decisions. Some additional information including templates on various RA and DR requirements can be found on the CPUC LIP webpage.[3]

This Guide is now being revised as version 7~~6~~.0 with updates from RA decision D.26-07-008. ~~to the RA measurement hours and clarification of the definitions of program-specific and portfolio-adjusted load impacts.~~ Inquiries related to the Load Impact Protocols, applicable DR policies, or this Guide can be directed to LoadImpactProtocolsInfo@cpuc.ca.gov.

[1] A Demand Response Provider is an entity providing DR programs and services. This includes IOUs and 3rd party DRPs (including Non-IOU LSEs).

[2] D.08-04-050, Protocol 27, 10.4 at 148-149: "Joint Staff (CPUC and CEC) is responsible to resolve any disputes that arise related to evaluation plans or evaluation results. For example, if a party disagrees with a chosen baseline method for evaluation of a particular program, the Joint Staff should have the authority to decide how to resolve it. Elevating these types of technical disputes to the Commission will be too time-consuming and these technical disputes do not need formal venues such as advice letters for resolution."

[3] https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/electric-costs/demand-response-dr/demand-response-load-impact-protocols.

II. Background

The Load Impact Protocols (LIPs) and the LIP filing requirements to measure ex-post performance, estimate ex-ante Qualifying Capacity (QC), and establish RA-eligible QC[4] for DR resources were adopted by D.08-04-050,[5] which prescribe a set of guidelines for estimating the load impact (or load change) resulting from DR activities. These guidelines established a consistent method for measuring program performance across DR resources on ex-post basis and for forecasting anticipated performance (or available capacity) on ex-ante basis. Additionally, the resulting capacity estimates are used to analyze the cost-effectiveness of DR programs managed by the IOUs and for other CPUC activities such as the RA framework and long-term integrated resource planning.

The LIPs define the minimum data outputs needed to understand the impact of a DR resource and statistical measures to assist in determining the accuracy of these impact estimates. The LIPs allow flexibility on the part of the load impact evaluators to choose methodologies which are both feasible for and suitable to the type of DR activity or program being analyzed. The protocols allow the evaluators to define any additional purposes and needs of a particular evaluation beyond the minimum required data. To the extent appropriate, the protocols provide direction and guidance on what methods might be appropriate in different situations and raise issues that evaluators should consider when choosing their methods.

The LIP filing requirements were subsequently modified by D.10-04-006,[6] which required parties to submit all LIP-associated filings to the Energy Division and to serve them to parties on the specified service list, instead of filing to the proceeding. It also established the IOU Executive Summary and Summary Tables filing requirements.[7]

After two years of LIP filings, D.10-06-036 modified several protocols, including eliminating the requirements for uncertainty adjusted impact percentiles to be presented in the ex-post or ex-ante tables, 1-in-10 weather scenario, typical event day, average weekday, et al.[8]

As directed by D.14-03-026, DR resources bid into the CAISO's wholesale market are considered supply-side DR resources (SSDR).[9] These resources can be counted for RA and receive RA capacity payments, accompanied by a Must-Offer Obligation. The same decision classified other DR resources as load-modifying DR resources (LMDR). Beginning with the 2014-2024 Energy Demand Forecast, the CEC treats the

[4] D.09-06-028 OP 3c. ultimately adopted LIPs for RA calculation: "For purposes of the resource adequacy program, calculation of the capacity of demand response programs should, to the maximum extent possible, reflect the load impact protocols adopted by Decision 08-04-050."

[5] "Decision Adopting Protocols for Estimating Demand Response Load Impacts," in R.07-01-041. The Load Impact Protocols themselves can be found in the D.08-04-050 Attachment A here: https://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/81979.PDF.

[6] "Decision Modifying Demand Response Load Impact Report Annual Filing Requirements," in R.07-01-041.

[7] D.10-04-006, Appendix 1.

[8] D.10-06-036, Appendix B.

[9] Conclusion of Law 5, at 28.

IOUs' non-event-based load modifying DR resources as load modifiers that reduce the load forecast.

In D.16-06-045,[10] the CPUC granted a temporary exemption from the LIPs for all market-integrated DR resources that were being bid into the market by third-party DRPs for the 2017-2019 RA compliance years. During that period, contract capacity was used in lieu of LIPs, to establish RA-eligible QC values for the above resources.

In D.19-06-026,[11] the CPUC recognized the expiration of this exemption and noted that LIPs were once again required for determination of QC values for all market-integrated DR resources, whether third-party DRP-, IOU-, or LSE-managed, except for DR resources participating in the Demand Response Auction Mechanism (DRAM) pilot in 2020-2023, where an alternative capacity counting method is in place.[12] The DRAM pilot ended in December 2024.[13]

In the Fall of 2019, the Energy Division initiated the LIP process for third-party DRPs, in addition to the IOUs, to obtain RA-eligible QC values for their DR resources through LIP filings beginning in 2020. Based on comments from parties, the Energy Division released an updated LIP schedule and requirements on January 3, 2020.

On February 2, 2020, the Energy Division clarified that, for any current or future LSE solicitations for market-integrated DR capacity, the LIPs for the DR resources being bid into the solicitation need not be completed prior to the solicitations. However, after the solicitation, all contracted RA capacity on the year ahead and month ahead CPUC RA filings must be supported by the Energy Division-approved QC values established for the contracted year (N) via a completed LIP process in the prior year (N-1).

In D.20-06-031,[14] the CPUC adopted a process to update the QC of market-integrated DR resources up to two times a year to reflect changes in customer enrollments *during* the RA compliance year, provided that the requested changes vary by more than 20 percent, or 10 MW, whichever is greater.

D.20-06-031 also established testing and dispatch requirements for "all third-party DR resources procured by non-IOU LSEs." These resources "must demonstrate response over a four-hour period on a quarterly basis."[15]

D.20-06-031 also directed a re-formation of the Supply Side Working Group (SSWG) to "(1) define the details of the biannual process; (2) further study the LIPs and potential enhancements to improve the accuracy, transparency, and applicability of the methodology; and (3) re-evaluate the QC update threshold (20 percent, 10

[10] OP 5a.
[11] "Decision Adopting Local Capacity Obligations for 2020-2022," in R.17-09-020, OP 18.
[12] D.19-06-26 at 41-42.
[13] D.24-04-006 OP 1, 2, and 3.
[14] "Decision Adopting Local Capacity Obligations for 2021-2023, Adopting Flexible Capacity Obligations for 2021, and Refining the Resource Adequacy Program," in R.19-11-009.
[15] D.20-06-031, 3.5.1.1 Discussion, at 40.

MWs) for potential future updates."[16] The Decision directed the SSWG to submit its recommendation for items (2) and (3) into Track 4 of R.19-11-009.

For item (1), the Energy Division and the California Efficiency and Demand Management Council (CEDMC) each submitted a proposal on the bi-annual QC update process on October 15, 2020. On October 19, 2020, Energy Division held an SSWG meeting, after which the CEDMC submitted a revised proposal on October 19, 2020.

On February 10, 2021, the Energy Division released the final process and schedule for the QC update process for filing year 2021 as part of this Guide (version 1.0). The Guide was subsequently updated on May 7, 2021. Later, version 2.0 was issued December 20, 2021.

In D.21-06-029, the CPUC requested the California Energy Commission (CEC) "to develop recommendations for a comprehensive and consistent measurement and verification (M&V) strategy, including a new qualifying capacity (QC) counting methodology for demand response (DR) resources addressing ex-post and ex-ante load impacts for implementation as early as practicable."

The CEC was also "requested to launch a stakeholder working group process in the 2021 Integrated Energy Policy Report (IEPR) and make actionable recommendations… no later than March 18, 2022."[17] In July 2021, the CEC opened Docket 21-DR-01 in response to the above request, to work on a new methodology.[18] The CEC Working Group, called the CEC Supply-Side Demand Response (SSDR) QC Working Group, released its report in Dec 2022.[19] The CEC report was presented to the RA proceeding in February 2022. The report indicated that there was insufficient time to develop a permanent QC methodology for the 2023 RA compliance year. The Commission acknowledged the report findings and found insufficient record to adopt a DR QC counting proposal for the 2023 RA year.

The Commission determined that the CEC Working Group should continue to develop long-term recommendations, consistent with the adopted Reform Track framework, and those recommendations should focus on the 2025 RA year and beyond.[20]

The CEC restarted the Working Group and submitted its report, including several proposals and the CEC's recommendation, in February 2023. The Commission declined to adopt any of the new proposals and maintained the LIPs as the

[16] OP 16 at 93-94, "Decision Adopting Local Capacity Obligations for 2021-2023, Adopting Flexible Capacity Obligations for 2021, and Refining the Resource Adequacy Program," in D.20-06-031.
[17] D.20-06-029, OP 11, at 77. Seven issues were identified to be discussed in the stakeholder working group. https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M389/K603/389603561.PDF.
[18] CEC Docket 21-DR-01.
[19] D.23-06-029, at 80. Erik Lyon, Tom Flynn, and Daniel Hills-Bunnell. (2022) "Qualifying Capacity of Supply Side Demand Response Working Group Final Report." Publication #CEC-200-2022-001-F. Download the CEC WG report here: https://efiling.energy.ca.gov/GetDocument.aspx?tn=248493&DocumentContentId=82959.
[20] D.22-06-050.

supply-side DR QC methodology while authorizing Energy Division to lead a Working Group, with support from CEC Staff, and submit a joint proposal in the RA proceeding for an incentive-based supply-side DR QC methodology in December 2024.[21] The Working Group held meetings in 2023, and CEC and CPUC staff (Joint Staff) evaluated the QC proposal with test and historical data.

In D.22-06-050, the CPUC clarified the quarterly testing report requirements and moved the RA measurement hours during the months of March and April from 4-9 PM to 5-10 PM. May was reclassified by CAISO as a spring month instead of summer, also moving its RA measurements hours from 4-9 PM to 5-10 PM.[22] In addition, the CPUC established that RA Compliance Year 2024 (FY 2023) would be considered a "test year" for the 24-hour slice-of-day framework.

D.22-08-039 found it reasonable to use the existing LIP methodology for the 2024 RA test year. However, the CPUC recognized that LSEs would need further guidance on *how* to utilize the LIP outputs under the 24-hour slice-of-day framework, and parties were directed to submit proposals in Workstream 2 of R.21-10-002.[23] This process resulted in D.23-04-010, which made updates to the DR RA counting methodology under the 24-hour slice-of-day framework for the 2024 RA test year. The decision also changed the valuation of DR resources from using a single average value QC over the five-hour RA window to using the CEC's IEPR Peak Hour as a single value QC.

D.23-06-029 authorized two parallel working groups (WGs) led by Energy Division staff. The first would take over the work started in the CEC SSDR QC WG to refine elements in the CEC's incentive-based supply-side DR QC proposal by December 2024.[24] The second WG proposed how to simplify the load impact protocols using a stakeholder process.[25,26] Both WGs were scoped into R.23-10-011, the new RA proceeding.[27] After the conclusion of the SSDR QC WG, Joint Staff put together an interim report[28] and held a public meeting to discuss the report on September 5, 2024. Joint Staff were working on the final proposal planned to be released in January of 2025 but were authorized to postpone the release of the final proposal pending further examination.[29]

The LIP Simplification WG created a report which was proposed into Phase I of the R.23-10-011, however D.24-06-004 cited a lack of record and moved consideration of the report into Track II of the proceeding[30] adopted most of the LIP Simplification

[21] D.23-06-029.
[22] D.23-06-029, OP 5, at 136.
[23] D.22-08-039, OP 2-3, at 15.
[24] D.23-06-029, OP 23, at 143-144. More information about the SSDR QC WG can be found here: https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/electric-costs/demand-response-dr/demand-response-workshops, or via email to David.Oliver@cpuc.ca.gov.
[25] D.23-06-029, COL 17, at 134.
[26] Order Instituting Rulemaking R.23-10-011, at 6.
[27] Order Instituting Rulemaking R.23-10-011, preliminary scoping issue 6, at 5.
[28] R.23-10-011, Daniel Hills-Bunnell, Erik Lyon, and David Oliver. (2024) "Interim Report on the Incentive-Based Qualifying Capacity Solution for Supply Side Demand Response Study Period."
[29] R.23-10-011, filed Jan 25, 2025, "Status Update on the Joint Staff Qualifying Capacity Proposal for R.23-10-011."
[30] LIP Simplification WG Report.

WG recommendations in Appendix C to include Third-Party DR providers, update the required percentile estimates, clarify which day types were required or optional, and changed the required day type from monthly system peak day to monthly system worst day. It also updated the evaluation planning procedure and executive summary requirements for the IOUs.[31] D.24-12-003 adopted most of the LIP Simplification WG recommendations in Appendix C to include Third-Party DR providers, update the required percentile estimates, clarify which day types were required or optional, and changed the required day type from monthly system peak day to monthly system worst day. It also updated the evaluation planning procedure and executive summary requirements for the IOUs.[32]

D.25-06-048 adopted a shift in the RA measurement hours for the months of November through February from 4-9 PM to 5-10 PM.[33] The updated RA measurement hours are from 5-10PM for the months of November through May and from 4-9 PM for the months of June through October. The decision clarified that the newly adopted RA hours would be incorporated into the LIP process for the 2026 LIP filing year (2027 RA compliance year).[34]

In D.26-07-008, the Commission acknowledged a misalignment between the CEC's IEPR Energy Demand Peak Hour, CAISO's NQC values, and the DR participation window. This was due to the monthly peak hour beginning to shift to the morning hours outside of the RA measurement window beginning in 2028. As a result, the Commission adopted a near-term solution to use "the average of hourly MW values for the hours within the AAH window during which the resource is available" for CAISO NQC instead of the Peak Hour.

III. Best Practices for LIP Filings

Procedural

1. Follow all filing deadlines, content requirements, and reporting templates as directed in Protocols 26 and 27.

2. The evaluation protocols for all DR resources are defined in the LIPs. Alternative methods to calculate LIPs are outside the scope of this document. Proposals for alternative methods should be filed in the relevant proceedings to obtain CPUC approval.

3. Consistent with reporting requirements established in Ordering Paragraph (OP) 4 of D.08-04-050, parties must submit their LIP-associated filings to the Energy

[32] D.24-12-003, Appendix C.
[33] D.25-06-048, OP 5 at 122.
[34] D.25-06-048 at 15.

Division and serve the files to the relevant service lists and to the Demand Response Measurement Committee (DRMEC).[35] Filings containing confidential information[36] can be served to the Energy Division's KiteWorks Secure File Transfer Protocol (SFTP) website by emailing them to LoadImpactProtocolsInfo@cpuc.ca.gov.

Data Requirements

1. Meeting the minimum data and analysis requirements is a pre-requisite for establishing confidence in the LIP Final Report:
   a. Follow the LIP guidance on how to control for uncertainty that may result from the estimation methods and/or underlying variables when conducting evaluations (for example, appropriate sample sizes, sampling strategy, etc.).[37]
   b. Understand that the goal of impact estimation is to establish a causal relationship between the DR resource and the load impact.
   c. When creating a control group is not possible, utilize probability distributions associated with key drivers of the resource and reasonable assumptions, as prescribed by the LIPs.[38]
2. All ex-post measurements or ex-ante projections of DR resource capacity or energy must be reported as measured at the premise meter level. Device level or sub-metered data can also be submitted as optional. Any adjustments for loss factors or Planning Reserve Margin (PRM) must be excluded.
3. Ex-ante and ex-post table generators must provide a breakdown for each hour according to each Local Capacity Area (LCA) matched to sub-Load Aggregation Points (sub-LAPs) at both the ~~program~~ "portfolio-adjusted" and ~~portfolio~~ "program-specific" levels.[39]

[35] The current service lists are A.22-05-002, et al., R.23-10-011, R.25-10-003, and R.25-09-004. The e-mail for the DRMEC is drmec@calmac.org. The emails for Energy Division are Rebekah.Daniel@cpuc.ca.gov and LoadImpactProtocolsInfo@cpuc.ca.gov.

[36] Including materials that contain proprietary, market-sensitive information.

[37] D.24-12-003, Appendix C (4) at 0 altered Protocol 5, Section 4.1.2 to be the following: "The mean change in energy use per year may optionally be reported for the average across all participants and for the sum of all participants on a DR resource option for each year over which the evaluation is conducted."
And Protocol 6: "Estimates shall be provided for the 5th, 50th, and 95th percentiles of the change in energy use in each hour, day and year, as described in Protocols 4 and 5, for each day-type and level of aggregation described in Protocol 8."

[38] D.24-12-003, Appendix C (13) at 4 altered Protocol 16, Section 6.1 to be the following: "For regression based methods, the following statistics and information shall be calculated and stored by the evaluator for a period of one year after filing date of April 1: (1) Adjusted R-squared or, if R-squared is not provided for the estimation procedure, the log-likelihood of the model, (2) Total observations, number of cross-sectional units and number of time periods, (3) Coefficients for each of the parameters of the model, (4) Standard errors for each of the parameter estimates, (5) Optional: The variance-covariance matrix for the parameters, Must be stored only if used to calculate the uncertainty adjusted impact percentiles, (6) The tests conducted and the specific corrections conducted, if any, to ensure robust standard errors."

[39] "Portfolio-adjusted" impacts are those attributed to the program being analyzed where double counting of customers is removed. "Program-specific" impacts are those attributed to the program being analyzed where double counting of customers is not removed.

a. For ex-ante, sub-LAP-level data is only required if the DRP/IOU is asking for local RA.[40]
b. For ex-post, the average event day over the evaluation period, the average across all participants notified on the average event day over the evaluation period, and the information about the average event day listed in D.24-12-003 Appendix C at 2 are optional.[41]

4. Ex-ante table generators must provide projections under both CAISO and utility 1-in-2 weather conditions.[42] CAISO and utility 1-in-10 weather conditions are not required.[43]

5. All ex-post and ex-ante tables must include a separate tab containing the raw data inputs that inform the table generators.

6. At minimum for consistency, all data referenced, and analysis discussed within the LIP narrative must be based on IOU 1-in-2 weather conditions, ~~program~~ portfolio-adjusted level impacts, and medium enrollment scenario (if multiple growth scenarios are presented). Optionally, additional data/analysis based on other scenarios could be included if desired.

7. In the ex-ante section of the LIP report (as well as the table below), the customers (meters) who are expected to provide the ex-ante projected capacity (associated with the DR program for which the RA-eligible QC is being requested) in a specific month must be distinct from and incremental to the customers counted by the DR Provider for any other DR program commitments (such as, Demand Side Grid Support, ~~DRAM,~~ IOU CBP/BIP or~~,~~ other DR programs or procurement contracts) in the same month. In other words, the ex-ante projection must represent any ONE of the following categories (but not blend multiple categories):[44]

~~DRAM (Demand Response Auction Mechanism)~~
a. CEC's Demand Side Grid Support
~~a.~~b. IOU CBP (Capacity Bidding Program)
~~b.~~c. IOU BIP (Base Interruptible Program)
~~c.~~d. IOU API (Agricultural-Pumping Interruptible)
e. PG&E ART (Automated Response Technology)
f. SCE SDP (Summer Discount Plan)
g. SCE SEP (Smart Energy Program)

[40] D.20-06-031, OP 15: "The following clarifications to the Load Impact Protocol (LIP) process for third-party demand response (DR) resources are adopted: (a) Ex post and ex ante load impacts are required at the sub-Load Aggregation Point level." D.24-12-003 Appendix C at 15 altered D.10-06-036, Appendix B, at 22.
"In order for DR programs to receive local capacity credit for RA, the load impact must be broken down by local areas. If a filer is not requesting any local RA, breakdown at the Sub-LAP level in ex ante are not required."
[41] D.24-12-003, Appendix C (6) at 2 altered D.10-06-036, Appendix B, at 19.
[42] Per Protocol 22, Section 6.1.
[43] D.10-06-036, Appendix B, at 20 & 21. "Protocol 22 requires the use of 1-in-2 weather year for the monthly system peak day. The 1-in-10 weather year… for each month are not needed for QC calculation."
[44] "Distinct from and incremental to" ex ante capacity is known as "~~program~~ portfolio-adjusted ex ante" as opposed to "program-specific~~portfolio~~ ex ante"

~~d.~~h. ~~Other~~ LSES' (IOU and CCA) ~~IOU~~ RA procurement contracts for supply-side DR as RA

~~e.~~i. Non-IOU LSE procurement contracts for supply-side DR as RA

8. Only 3 years are required to be projected in ex-ante for RA QC. E.g., Filing Year 202~~7~~4 would only need to project RA program years 202~~8~~5-203~~0~~27~~.~~[45]

9. The narrative should include a table with the monthly ex-ante values under IOU 1-in-2 worst day weather scenario for the 12 months of the RA compliance year.

10. Typical event day and average event day per month are not required to be calculated in ex-ante[46][47]

11. Hourly data should be reported in 'universal' Pacific Time (UTC-8:00). It should not be reported in 'prevailing' time (which changes hours for daylight savings). This aligns with the CEC's Peak Load Forecast and CPUC's Resource Adequacy frameworks which are in 'universal' time.
    a. For months that have daylight savings time, the ex-post and ex-ante tables and data should be calculated for the 'universal' time that makes the majority of the month.

12. DR Providers with programs with non-event-based DR resources are required to comply with Protocols 11-16. Filing Parties without these DR resources are exempt.
    a. For non-event-based resources, provide an average hour as applicable to resource instead of an average event hour. For example, provide the average on-peak window for a non-event-based pricing resource like a Time-of-Use (TOU) rate.

13. ~~Large Loads (ex.~~ Data centers and~~,~~ EV Fleet Charging Station~~s Load)~~ should be reported as a distinct industry load type within ex-ante and ex-post table generators.
    a. If any industry type uses backup generation, ~~For all Large Load types,~~ include what percentage of the load drop is being provided by backup generation within the report.

[45] D.19-02-022, OP 8. "A minimum three-year forward duration shall be the required duration adopted for the multi-year local resource adequacy program." See also D.20-06-002, OPs 7 and 10, directing that IOU DR resources be counted based on the three-year period of the applicable LIP studies.

[47] D.10-06-036, Appendix B, at 20 & 21, "...typical event day, or an average weekday for each month are not needed for QC calculation."

Executive Summary Requirements

For IOUs:

1. The IOUs may optionally prepare the executive summary and are required to prepare the summary tables described in D.10-04-006 as part of their annual load impact reports.[48]
2. The executive summary is not required to be in its own separate filing, but the information is still required to be either in the individual DR program filings or the executive summary.
    a. If the executive summary is filed separately from the individual DR program filings, it will be due on April 22nd, three weeks after the individual DR program filings are due.[49]

For Third-Party DRPs (including non-IOU LSEs):

3. The following summary information must be included within the first page of the Executive Summary of the LIP report (please include additional rows for each local area and repeat the table as needed if the report data is separated for different or program types – such as, battery vs. HVAC):

Ex-Ante Projections for Qualifying Capacity (Insert Year Here) Under 1-in-2 Utility Weather Conditions						
As of August	Scenario #1		Scenario #2		Scenario #...	
Local or System Capacity Allocation	Number of Customers (meters)	MWs	Number of Customers (meters)	MWs	Number of Customers (meters)	MWs
(If local, state the utility name; if system, state the TAC area[50])						

4. In case of LIP reports for DR resources contracted with non-IOU LSEs, the executive summary must include a section with a summary of key program attributes of DR contracts with non-IOU LSEs related to resource availability (# of hours in a day/month/year, min/max limits on number of dispatches/events, consecutive days, days of the week), performance obligations, energy and capacity invoicing and payment terms, and penalties for under performance or not meeting commitments.

5. Third-party DRPs should include the following information in the report's executive summary, as well as in a separate tab in the ex-ante table generator *(MWs should exclude any adders or adjustments)*:

[48] D.24-12-003 Appendix C at 13.
[49] D.24-12-003 Appendix C at 13, "The executive summary (if filed separately from individual DR program filings) and the summary tables are due three weeks after the individual DR program filings are due. If individual filings are due April 1, the executive summary and summary tables are due April 22."
[50] Transmission Access Charge area.

	DRP (below) = Third-party DRP		2023 ~~2~~	2024 ~~3~~	2025 ~~4~~	2026 ~~5~~	2027 ~~6~~	2028 ~~7~~
1	Total August DR capacity contracted by the DRP with IOU LSEs~~awarded to DRP by the IOUs under DRAM~~							~~N/A~~
~~2~~	~~Total August DRAM capacity shown by the DRP on month-ahead supply plans~~						~~N/A~~	~~N/A~~
~~3~~	~~Total August customer (meter) enrollment (related to #2 above) estimated by the DRP in the month-ahead supply plans~~						~~N/A~~	~~N/A~~
~~4~~	~~How much of the August DRAM capacity in #2 above was invoiced by the DRP as Demonstrated Capacity (%)~~						~~N/A~~	~~N/A~~
~~5~~	~~Total August customer (meter) enrollment (related to #4 above) estimated by the DRP in the year-ahead supply plans (submitted in October of the prior year)~~							~~N/A~~
2~~6~~	Total August DR capacity contracted by the DPR with non-IOU LSEs							
3~~7~~	Total August capacity (related to #2~~6~~ above) shown by the DRP on month-ahead supply plans***							N/A
4~~8~~	Total August customer (meter) enrollment (related to #3~~6~~ above) estimated by the DRP in month-ahead supply plans***							N/A
5~~9~~	Total August capacity nominated (or to be nominated) by the DRP into the IOU CBP							
6~~1~~0	Total August capacity enrolled (or to be enrolled) by the DRP into IOU BIP							
7~~1~~1	Total ~~DR~~ August DR capacity contracted by the DRP under other IOU procurement programs (as of April of the filing year)							
8~~1~~2	Total August capacity enrolled (or to be enrolled) by the DRP into the Demand Side Grid Support (DSGS) Program within each incentive subgroup	Opt. 1						
		Opt. 2						
		Opt. 3						
		Opt. 4						
9~~1~~3	Total August customer (meter) enrollment (related to #8~~12~~ above) by the DRP into the DSGS Program within each incentive subgroup	Opt. 1						
		Opt. 2						
		Opt. 3						
		Opt. 4						
~~1~~10	Total August capacity enrolled (or to be enrolled) by the DRP into the ELRP within each incentive subgroup	A.2						
		A.3						
		A.4						

		A.5						
11	Total August customer (meter) enrollment (related to #10 above) by the DRP into the ELRP within each incentive subgroup	A.2						
		A.3						
		A.4						
		A.5						
12	Total August MWs claimed (or to be claimed) by the DRP through ELRP subgroup B.1 in settlements							

***for current filing year, report April supply plan.

Analysis

1. The Protocols require a forecast exercise using the relevant Utility's 1-in-2 weather scenario. To obtain this scenario, please contact the following:
   - PG&E: Ezana Kemmer (E2KQ@pge.com)~~Neil Yazma (NXYR@pge.com) and Gil Wong (gil.wong@pge.com)~~.
   - SCE: Jay Bhakta (jay.bhakta@sce.com), Yi "Louie" Liu (yi.liu@sce.com), and Jake J. Hoffman (jake.1.hoffman@sce.com).
   - SDG&E: Kyle Kettler (kkettler@sdge.com)~~Lizzette Garcia-Rodriguez (lgarcia-rodriguez@sdge.com)~~.

2. A reference load measured at the premise level should attempt to establish a causal relationship between a load reduction and the dispatch of a DR event.[51]

3. If estimates are needed for scenarios that differ from those that have already occurred, refer to the guidance on alternative methods and explain them.[52]

4. ~~Current (2025 and beyond)~~Beginning with the 2026 RA compliance year, RA "measurement hours" are 5-10 PM (Hour Ending [HE] 18-22) in all months except June-October, which are 4-9 PM (HE 17-21) in prevailing (wall) time. To convert to universal (standard) time, the hours for March through October move back one hour.[53]

   a. The chart below depicts the RA measurement hours and peak hour in prevailing time and universal time for RA year 2027.

[51] For example, an energy dispatch from a storage device could be responding to time-of-use management, instead of a DR event. Alternately, a premise's load may increase, which would reduce the portion of the load measured from the storage device. In either case, direct metering would not be able to establish causality.

[52] Protocol 16, Section 6.1.

[53] D.25-06-048, OP 5. The decision modified CPUC's RA Measurement Hours to align with CAISO's Availability Assessment Hours. ~~CPUC's RA "Measurement Hours" were modified to align with CAISO's "Availability Assessment Hours."~~

AAH in Prevailing Time			PST	PST	PDT	PDT	PDT	PDT	PDT	PDT	PDT	PDT	PST	PST
(with Daylight Savings)		HE	January	February	March	April	May	June	July	August	September	October	November	December
DST is from Mar 8-Nov 1 2026	2pm	HE 15												
PST and PDT	3pm	HE 16												
Peak Hour	4pm	HE 17												
	5pm	HE 18												
	6pm	HE 19												
	7pm	HE 20												
	8pm	HE 21												
	9pm	HE 22												
	10pm	HE 23												
	11pm	HE 24												

AAH in Universal Time			PST	PST	PST	PST	PST	PST	PST	PST	PST	PST	PST	PST
(without Daylight Savings)		HE	January	February	March	April	May	June	July	August	September	October	November	December
Only PST	2pm	HE 15												
Peak Hour	3pm	HE 16												
	4pm	HE 17												
	5pm	HE 18												
	6pm	HE 19												
	7pm	HE 20												
	8pm	HE 21												
	9pm	HE 22												
	10pm	HE 23												
	11pm	HE 24												

5. 24-Hour Slice-of-Day Requirements: Ex-ante load impacts must include at least four consecutive hours within the Availability Assessment Hours (AAH) on the "worst day" of each month. If the DR resource is required by contract or tariff to be capable of responding to longer dispatches, the ex-ante estimates must include all hours of the AAH window. ~~A four consecutive hour dispatch is required in ex ante within Availability Assessment Hours (AAH) on the "worst day"[54] of each month unless the DR resource is required by contract or tariff to be capable of dispatching for more than four hours (if more than four, ex ante must include all of AAH)~~.[55]
   a. The value of DR resources will vary by hour based on the resources' ~~capabilities~~capability~~,~~ on the worst day of the month under the 1-in-2 planning framework. ~~and the~~ LSEs ~~will~~ must show DR ~~availability~~ resources for RA in the same hours that were used in the ex-ante LIP filing.[56]
   b. Snapback effects must be included in the ex-ante LIP filings but will not be reflected in RA capacity counting.[57]
   c. Average ex-ante values per month in table generator should be over a 4-hour window within the CAISO AAH adjusted to universal time.

6. Distribution Loss Factor (DLF) adder will be retained and used during the 2024 RA test year and beyond.[58] Because the DLF is retained, the NQC for DR resources is grossed up to add back the effect of this adder.

~~[54] Per D.22-06-050, Appendix A, at 1: "The "worst day" is defined as the day of the month that contains the hour with the highest coincident peak load forecast."~~
[55] D.23-04-010, OP 11.
[56] *Ibid*.
[57] *Ibid*.
[58] D.23-04-010, OP 12.

7. The Transmission Loss Factor (TLF) and PRM adders were eliminated starting in the 2024 RA compliance year.[59]

~~7.~~8. To receive RA credit, all DR resources must be available a minimum of four hours per day over three consecutive days.[60]

~~8.~~9. All DR resources, except Reliability Demand Response Resources (RDRR), must be available on all days on which the CAISO calls a Flex Alert, through the last day for which the CAISO has issued a Grid Warning, Alert, or Notice, or the Governor's Office has issued an emergency notice. The resource must be available for the duration of any Alert, Warning, or Notice issued prior to the 10 AM Day-Ahead market bid deadline. LSEs are required to implement these requirements in their contracts with DR providers.[61]

New DR Resources

1. If submitting a study on new DR resources, the filing party may reference the available data that best approximates the anticipated performance of the new resources, either published data or the historical performance of similar resources operated by the filing party.[62]

2. When proposing new market integrated DR resources, a preferred practice is for the DRP to conduct pilots or participate in a Utility program as an aggregator to establish market dispatch history that is specific to California.

3. Day matching and regression methods are preferred over engineering analysis, especially if there is sufficient ex-post data. "[E]ngineering analysis is much less useful for estimating the impacts associated with most DR resources because impacts are driven much more by consumer behavior than by technology implementation."[63]

Data Quality Considerations

1. If no data exists, follow the guidelines on how to turn unobservable characteristics into observable ones.[64]

2. When sufficient data from the DR resource for the LIP filing doesn't exist, considerations as to whether alternative data planned to be use are "reasonable."

[59] D.23-06-029, OP 27: "The Transmission Loss Factor adder and the Planning Reserve Margin adder for demand response resources are removed beginning with the 2024 Resource Adequacy compliance year and for the 2024 slice-of-day test year."
[60] OPs 20 and 21 in D.11-06-022.
[61] OP 30 in D.23-06-029.
[62] Protocol 17, Section 6.1: "Whenever possible, ex ante estimates of DR impacts should be informed by ex post empirical evidence from existing or prior DR resource options. Evidence from resource options and customer segments most relevant to the ex-ante conditions being modeled should be used, regardless of whether they come from the host utility or some other utility. If ex post estimates or models are not used as the basis for ex ante estimation, an explanation as to why this is the case shall be provided."
[63] Protocols 10-11, Section 4.2.2, at 77.
[64] Protocol 16, Section 6.2.2.

a. California data should be used unless all other options are exhausted.

b. Only like-for-like comparisons should be made. E.g., a resource previously performing under a BIP tariff is unlikely to have the same performance in a CBP-like program.

3. If, per the evaluator's determination, the existing data is not sufficient, document the differences and explain why the estimation was not possible.[65]

4. Ideally, to establish confidence in a DR resource's ability to meet the minimum RA requirements: 1) the ex-post data should include evidence of load impacts sustained over multi-hour events, multiple times per year, under different conditions, including performance over RA measurement hours and three consecutive days, with 2) ex-ante data that includes fatigue considerations.

5. In building the ex-ante regression model from the ex-post data, a weighted regression model should be used which weights events with much larger sample sizes and smaller confidence intervals over events with small sample sizes.

6. Ideally, a performance track record of DR resources should be developed through the LIP reports over the years, so that subsequent LIP filings can more accurately project future performance.

    a. When possible, the report should discuss how discrepancies between prior ex-ante forecast submitted two years ago and last year's actual performance reported in the current filing are being addressed to increase confidence in the latest ex-ante projection in the current filing.[66]
    b. When the current resource portfolio is substantially different (such as, enrollment, end use load type, total capacity achieved) from that assumed in the prior ex-ante projection, the current LIP filing should explain these differences.

Third-Party DRP Contract and Market Participation

1. DRPs may enter into a contract with an LSE that is not subject to the Central Procurement Framework[67] for three years of Local Resource Adequacy based on the Qualifying Capacity (QC) assigned to them for the first year.[68]

2. Consistent with the Energy Division Guidance on applying LIPs to IRP Solicitations released on February 18, 2020, LIPs for the DR resources being bid into the solicitation need not be completed prior to the solicitations. However, subsequent to the solicitation, all contracted RA capacity on the year ahead and month ahead CPUC RA filings must be supported by Energy Division-

[65] Protocol 17, Section 6.1.
[66] Per Protocol 26 at 146.
[67] D.20-06-002 in R.17-09-020, "Decision on Central Procurement of the Resource Adequacy Program."
[68] The three-year forward Year Ahead local Resource Adequacy requirement was adopted in D.19-02-022. This ~~capacity is granted~~capacity granted in the first year is based on the DRP's LIP Final Report filing on April 1, 2020.

approved QC values established for the contracted year (N) via a completed LIP process in the prior year (N-1).

Parties offering DR resources into current and future solicitations are advised to complete their LIPs in anticipation of any future solicitations of interest.

3. While the Energy Division is providing the above guidance, it is each DRP's responsibility to ensure that its potential countersigners or partners are aware of potential risks associated with the outcome of the LIP process.

   During the RA compliance year, a DRP must not shift resources required to meet ~~DRAM and~~ IOU program commitments to meet non-LSE capacity commitments.

Third-Party DRP Public vs. Confidential Information

The LIP Simplification WG has asserted there is an unequal playing field between third-party DRPs, as there could be different interpretations of the below requirement established in D.20-06-031.
"The Load Impact Protocol (LIP) reports and qualifying capacity values from a demand response provider's LIP results shall be posted publicly to the maximum extent allowable, while protecting customer privacy and market sensitive information of demand response providers by adhering to the Commission's existing confidentiality policies,"[69]

To create a standard reporting of information across providers Commission staff clarifies that the following information shall be made publicly available:[70]

1. Current customer base: both by industry and load type for ex-post.

The following information can be redacted from the public report:[71]

1. Customer forecast scenarios and concomitant rationale, and
2. All existing confidential information from previous CPUC and California State Decisions and Laws.

CPUC Rule 1.1

In terms of various compliance obligations of LIP report filers and DR providers, the following points are notable:

- In the creation and submission of the LIP report, the CPUC expects filers to follow Title 20, Division 1, Chapter 1: Rules of Practice and Procedure, Article 1, Rule 1.1: "Any person who signs a pleading or brief, enters an appearance, offers testimony at a hearing, or transacts business with the Commission, by such act represents that he or she is authorized to do so and agrees to

[69] D.20-06-031, OP 17, at 95.
[70] These clarifications by ED staff do not supersede any previous confidentiality decisions and state laws, including but not limited to Civ. Code §§ 1798 et seq.; Govt. Code § 6254; Public Util. Code § 8380; D.14-05-016; D.04-08-055; D.06-12-029; Civ. Code §§3426, et seq.; Govt. Code §§ 6254, et seq., e.g., 6254(e), 6254(k), 6254.15; Govt. Code § 6276.44; Evid. Code §1060; D.11-01-036; Civ. Code §§ 1798 et seq.; Govt. Code § 6254; 42 U.S.C. § 1320d-6; General Order (G.O.) 77- M; Govt. Code §§ 6254(k), 6254.15; D.11-01-036; and Govt. Code § 6255(a).
[71] Confidential information can be accessed by Joint Staff (CPUC—both ED and Public Advocates—and CEC Staff).

comply with the laws of this State; to maintain the respect due to the Commission, members of the Commission and its Administrative Law Judges; and never to mislead the Commission or its staff by an artifice or false statement of fact or law." ~~https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/administrative-law-judge-division/documents/rules-of-practice-and-procedure-may-2021.pdf~~

- When utilizing the RA-eligible QC (and the associated enrollment basis) determined through the LIP process for supply plans and CAISO market participation, DR providers are expected to follow CAISO Rules of Conduct 37.3.1.1: "Market Participants must submit Bids for Energy, RUC Capacity and Ancillary Services and Submissions to Self-Provide an Ancillary Service from resources that are reasonably expected to be available and capable of performing at the levels specified in the Bid, and to remain available and capable of so performing based on all information that is known to the Market Participant or should have been known to the Market Participant at the time of submission."[72]

[72] CAISO Rules of Conduct 37.3.1.1

IV. Filing Schedule for LIP Reports

Beginning in 2022, all filing deadlines are the same for IOUs and third-party DRPs.

Table 1: ~~Schedule for Obtaining~~ DR QC LIP Process and Schedule ~~Through the LIP Review Process~~

Filing Requirement (Third-Party DRPs and/or LSEs[73])	Requirement Deadline for Filing Year N (RA Year N+1)[74]
1. Draft Evaluation Plan distribution to Joint Staff (IOU evaluation plans must also be sent to the DRMEC.[75,76]).	COB December 31 (Filing Year N-1)
a. Joint Staff and Public Advocates Office comment on Draft Evaluation Plan directly to filing parties and ED staff	15 days after submission of Item 1
b. Filing Party files a summary of comments from the DRMEC, Joint Staff, and Public Advocates Office, if applicable, and how the comments are addressed to Joint Staff.[77]	Second week of March[78]
2. Final LIP Report due (including responses to comments[79]) via service lists.,[80] ~~to the DRMEC,[81] and~~ LoadImpactProtocolsInfo@cpuc.ca.gov~~.~~ Reports must be filed into the CALMAC database via the website.[82]	April 1

[73] Load Serving Entities including Investor-Owned Utilities (IOUs).

[74] CPUC Rule 1.15: "When a statute or Commission decision, rule, order, or ruling sets a time limit… including the last day. If the last day falls on a Saturday, Sunday, holiday or other day when the Commission offices are closed, the time limit is extended to include the first day thereafter."

[75] The email address for the Demand Response Measurement and Evaluation Committee is drmec@calmac.org.

[76] Protocol 27, Section 10.1.

[77] The party filing the evaluation plan is responsible for publishing a small summary of comments received and how or if they were incorporated into the final evaluation plan for each load impact study. The final evaluation plan will be made available to Joint Staff upon request. (LIP 27, Section 10.1.3, at 147. Updated in D.24-12-003, Appendix C, at 11.)

[78] D.24-12-003, Appendix C. Protocol 27, 10.1.5 at 11: "Responses to the evaluation plan comments are required by filing parties that have received comments from DRMEC, Energy Division, Public Advocates Office, California Energy Commission, or other reviewing party. Updated methods sections specifically addressing the comments made by reviewers are due by the second week of March or as determined by Energy Division."

[79] Protocol 27, Section 10.2.

[80] Reports should be sent to the service lists for ~~R.21-10-002, A.17-01-012, and~~ the DR and RA proceedings current to the LIP filing year (RA: R.25-10-003, DR: R.25-09-004) as well as the most recent proceedings (RA: R.23-10-011, DR: A.22-05-002, et al.). Reports should also be sent to the Demand Response Measurement and Evaluation Committee (drmec@calmac.org) and the LIP information email (LoadImpactProtocolsInfo@cpuc.ca.gov).

~~[81] The email address for the Demand Response Measurement and Evaluation Committee is drmec@calmac.org.~~

[82] Protocol 27, 10.2: "Copies of the final load impact report should be filed on the CALMAC website." To do this, go to the Administration page of the CALMAC website and click on "Create a CALMAC ID". A study ID will be issued to you by the software.

a. ~~Host IOU LIP Report workshop~~ IOU Executive Summary Tables OPTIONAL IOU Executive Summary Report due	~~First week of May~~April 22
~~b. Host DRP and SCE LCR LIP Report Workshop~~	~~Within 1-2 weeks after first workshop~~
~~3.~~ LIP Report Workshop 1: IOU Programs ~~Joint Staff begins review of LIP filings~~ ~~4.~~3.	First week of May~~May~~
4. LIP Report Workshop 2: DRP/RA Contracts	Within 1-2 weeks after first workshop
5. Energy Division ~~finalizes~~ issues Final IOU QC assignments	May
6. Energy Division ~~DR Section finalizes~~issues Final DRP QC values~~assignments~~	August
~~7. Third Party DRPs submit names of capacity buyers and associated MWs to Energy Division RA and DR Sections~~	~~October~~
~~8.~~7. LSEs submit RA Year-Ahead compliance filing for the 24-hour slice-of-day framework to the Energy Division RA and DR Sections	September~~October 31~~

V. Quarterly Testing Requirements

All DR resources must abide by the testing requirements set in D.14-06-050. These testing results should be included in the ex-post data that is used to make ex-ante projections.[83] In D.23-06-029, the Commission more explicitly tied the quarterly testing results to the annual RA QC value~~award~~s.[84]

Beginning with 2021, D.20-06-031 established specific testing requirements for third-party DR resources procured by all non-IOU LSEs.[85] D.22-06-050 expanded the applicability of the testing requirements to third-party DR resources procured by all LSEs (IOU and Non-IOU) in addition to other clarifications starting in RA year 2023.[86] The testing requirements do not apply to:

(1) third-party DR resources procured via investor-owned utility (IOU) programs, such as the Capacity Bidding Program and Base Interruptible Program, and/or contracted by an IOU under Commission-approved contracts prior to June 23, 2022.

The testing requirements for all other third-party DR resources procured by all LSEs include:

1. The DR resource must dispatch for four consecutive hours during the Resource Adequacy (RA) measurement hours in every quarter of the delivery year.[87]

2. The test must be done at the resource ID level and all resources within the same sub-Load Aggregation Point must be dispatched concurrently. If qualifying capacity values vary by month, within each quarter, the test shall be done in the month with the highest qualifying capacity for each sub-Load Aggregation Point.[88] When possible, ED staff recommends all resources within a DRP's portfolio to be dispatched concurrently, to provide stronger evidence of available capacity.

[83] Per D.20-06-031, at 38: "All test results would be provided to the Commission and be used to determine QC values."
[84] Per D.23-06-029, OP 32: "Beginning with the capacity awards granted through the LIP process for the 2024 Resource Adequacy compliance year, test performance failures will be considered when making capacity awards to non-investor-owned utility demand response (DR) resources procured by third-party DR providers under the Load Impact Protocols (LIPs). Derates will be applied so that they correspond to performance during test events for the most recently available quarterly test results at the time of the award for the relevant quarter. The average performance results of each quarter will inform the capacity awarded through the LIPs for the respective sub-load aggregation point."
[85] Per D.22-06-050, OP 12 (testing requirements) and 13 (submitting results of test). OP 12(a): "The DR resource must dispatch for four consecutive hours during the Resource Adequacy measurement hours in every quarter of the delivery year." OP 12(b): "The test must be done at the resource ID level and all resources within the same sub-Load Aggregation Point must be dispatched concurrently. If qualifying capacity values vary by month, within each quarter, the test shall be done in the month with the highest qualifying capacity for each sub-Load Aggregation Point." OP 13(a): "The scheduling coordinator shall submit the test results to the DR buyer, DR provider, Energy Division, and the California Independent System Operator by the end of the quarter following the quarter in which the test dispatch occurs." OP 13(b): "Third-party DR providers shall submit the test results in their Load Impact Protocol analysis and reports submitted to the Commission."
[86] Per D.22-06-050, OP 12: "The testing requirements do not apply to: (1) third-party DR resources procured via investor-owned utility (IOU) programs, such as the Capacity Bidding Program and Base Interruptible Program, or contracted by an IOU under Commission-approved contracts prior to the effective date of this decision; and (2) third-party DR resources in the 2023 Demand Response Auction Mechanism pilot."
[87] Per D.22-06-050, OP 12(a).
[88] Per D.22-06-050, OP 12(b).

3. The testing requirement can be fulfilled either through a CAISO market dispatch or an out-of-market test with a preference for market dispatches.[89]
4. Performance must be averaged over the four consecutive hours for each day.[90]
5. The third party DRPs must include the performance results of the 4-hour dispatches in an hourly format in the LIP Reports submitted to the CPUC.[91]
6. The Scheduling Coordinator (SC) must submit the performance result for the quarterly dispatch to the DR buyer, DR provider, Energy Division, and the CAISO by the end of the quarter following the quarter in which the dispatch occurs.[92]
    a. Please submit quarterly dispatch results and/or documentation of efforts to acquire the supporting data to Energy Division at LoadImpactProtocolsInfo@cpuc.ca.gov.
    b. If awarded RA QC in a given year but not in every quarter, the SC is requested to email Energy Division by the end of the following quarter.
7. All DR resources belonging to a third party DRP for which results are not timely provided will be ineligible for RA showings until the complete results are submitted. If the DRP is unable to provide results by the appointed date due to inability to access the required meter data, they may submit documentation showing efforts to acquire the supporting data.[93]
8. All quarterly dispatch reports should use the template available on the LIPs page here.

[89] Per D.20-06-031, at 40.
[90] Per D.20-06-031, p.41.
[91] Per D.22-06-050, OP 13(b).
[92] Per D.22-06-050, OP 13(a).
[93] Per D.20-06-031, p.41.

VI. Process for Updating DR Resource QC During RA Compliance Year

Beginning with 2021, two opportunities are available *during* the RA compliance year to update the QC values for DR resources qualified through the LIP process in the previous year:[94] ~~,[95]~~

- April 1 (for delivery beginning in July of the RA compliance year)
- July 1 (for delivery beginning in September of the RA compliance year)

The update process is described below and summarized in Table 2.

For third-party DRPs and IOUs:

1. An update filing during the RA compliance year is *required* when the current capacity of the DRP's DR program falls below either the threshold of 20% below or 10 MW less than the QC value of the program assigned through the prior year LIP process, whichever is greater.[96]

For third-party DRPs:

2. An update filing is also *required* during the RA compliance year when:
   a. The current capacity of the DRP's DR program increases above either the threshold of 20% or 10 MW greater than the assigned QC value, whichever is greater, ***and***
   b. The DRP plans to sell the incremental capacity to an LSE during the same RA compliance year.

3. An update filing is *optional* when:[97]
   a. The current capacity of the DRP's DR program increases above either the threshold of 20% or 10 MW greater than the assigned QC value, whichever is greater, ***and***
   b. The DRP has no plans to sell the incremental capacity to an LSE during the same RA compliance year.

For IOUs:

4. An update filing is *optional* when:[98]

[94] OP 15 D. 20-06-031: "The following clarifications to the Load Impact Protocol (LIP) process for third-party demand response (DR) resources are adopted: (b) Mid-year updates are permitted to reflect changes in customer enrollment if the change is reasonably large. In the compliance year, on a biannual basis, Energy Division shall update qualifying capacity (QC) values based on the actual customer enrollment volume associated with that resource in the California Independent System Operator's Demand Response Registration System. LIP results will be updated if QC values vary by more than 20 percent, or 10 MW, whichever is greater."

~~[95] "Program-specific" impacts are those attributed to the program being analyzed where double-counting of customers is not removed. "Portfolio-adjusted" impacts are those attributed to the program being analyzed where double-counting of customers is removed.~~

[96] The threshold for the QC update should be calculated using the portfolio-adjusted impacts for each program.

[97] If a DRP decides not to file, the DRP must still notify ED staff and loadimpactprotocolsinfo@cpuc.ca.gov of their increased capacity.

[98] If an IOU decides not to file, the IOU must still notify ED staff and loadimpactprotocolsinfo@cpuc.ca.gov of their increased capacity.

a. The current capacity of the LSE's DR program increases above either the threshold of 20% or 10 MW greater than the assigned QC value, whichever is greater, ***and***
b. The IOU has no plans to increase the RA allocation assigned to the DR resources in the RA compliance year.

For All DR Providers (IOUs and third-party DRPs):

5. An update filing must utilize the "QC Update" standardized template and include the following information:
   a. Average per-customer ex-ante load impact for each sub-Load Aggregation Point (sub-LAP) from the last approved LIP results for the applicable RA delivery months.
   b. Current customer enrollment in the CAISO Demand Response Registration System (DRRS) at the time of QC update request (in aggregate and by sub-LAP).
   c. The ex-ante enrollment forecast from the last approved LIP results for the applicable RA delivery months.
   d. Updated enrollment forecast, including all active and inactive locations as indicated by the CAISO DRRS.

6. The QC update request for the applicable RA delivery months shall be made as follows:
   a. Updated QC (in RA month N) = Actual customer enrollment (from CAISO DRRS in month of request) + Projected enrollment growth (for RA month N, per the last approved LIP results)) x Average *ex-ante* load impact per customer (from the last approved LIP results).
   b. Updated QC allocation aggregated by sub-Load Aggregation Point (sub-LAP) level, mapped to individual resource IDs.[99]
   c. Indicate the proportion by which the MW value has changed on a ~~program~~ portfolio-adjusted level.

7. Templates for bi-annual updates for qualifying capacity can be found on the LIPs webpage here.

Table 2: Schedule for Submitting Bi-Annual Updates for Qualifying Capacity

Applicable to All IOUs and Third-Party DRPs	**Updates for 202~~6~~7 RA Year**
1. Table of revised information as prescribed earlier, containing changes that meet either an increase or decrease of 20% or 10 MW of a program's QC value.	April 1, 202~~6~~7 (for delivery beginning in July 202~~6~~7)
2. Table of revised information containing changes that meet either an increase or decrease of 20% or 10	July 1, 202~~6~~7 (for delivery beginning September 202~~6~~7)

[99] Per D.20-06-031 at 45. This information is used by CAISO to update its Customer Interface for Resource Adequacy (CIRA) system.

MW of a program's QC value since the filing in Item 1.	

VII. Resource Adequacy Year-Ahead Net-Qualifying Capacity (NQC) Filings

Once the Energy Division issues the RA-eligible QC of DR resources to filing parties, it will accompany these QC values~~awards~~ with requests for parties to complete several templates. As part of the process of finalizing the Resource Adequacy ~~awards~~ values in the Year-Ahead timeframe, parties will be asked to complete several templates.

Year-Ahead Filings

Beginning with the ~~2023 transition year to a Slice-of-Day (SoD) framework~~2024 Slice-of-Day (SOD) test year, and on a binding basis since the 2025 compliance year,[100] parties with approved DR qualifying capacity are asked to provide the hourly breakdown of the MW value for each month of the year in which the party is providing DR resources. Specifically, parties are asked to provide the breakdown of the MW value for each hour under the Availability Assessment Hours (AAH):

- Where they are offering local resources, parties are asked to provide the total for the Local Capacity Area (LCA)
- Where parties are providing system resources, they are asked to provide the total for the Transmission Access Charge (TAC) area.
- The total MW value for all IOU TAC areas is not to exceed the monthly values as approved by the Energy Division.
- IOU DR allocations to LSEs are based on monthly peak load ratio shares and apply to all 24 slices. Dispatchable Behind-the-Meter (BTM) LCR preferred resources, plus a DLF, are allocated with the IOU DR LIP allocation.[101]
- For Local RA, the Year-Ahead (YA) local reporting template uses the August DR values for each local area for all 12 months of the year. Only LSEs in the SDG&E TAC area carry an individual Local RA requirement; in the PG&E and SCE TAC areas, the Central Procurement Entity (CPE) is allocated the local requirement, including local DR, for the three-year forward period.[102]
- The Maximum Cumulative Capacity (MCC) DR bucket is retained under the SOD framework, and the DR bucket limit of 8.3 percent is applied equally to each slice. Capacity from supply-side DR resources may not be used to meet an LSE's excess capacity requirement for charging shown storage.[103]

[100] D.22-06-050, Appendix A~~, D.22-06-050~~.
[101] D.23-04-010, Section 4.4.1.
[102] D.20-06-002, OPs 2, 3, and 8(d).
[103] D.23-04-010, Section 5.8.2.

For all files submitted to Energy Division, please indicate where information must be aggregated or redacted because it is confidential, proprietary, or market sensitive. Once submitted, the Energy Division staff will review these files for accuracy and consistency with parties' LIP Final Reports and Energy Division determinations of eligible QC. Once finalized, this information will be integrated into the Resource Adequacy and procurement planning processes.

Please consult the filing year's Demand Response Section of the Resource Adequacy Guide[104] to ensure that all filing requirements are met.

Month-Ahead Filings

Once parties have undertaken the process in the Year-Ahead Filings, they must make monthly submissions to the Energy Division in order to be added to the CAISO NQC list. D.23-04-010 directs the Commission to provide the maximum showing value, the peak showing value, and the greater of the peak hour value and a very small non-zero QC value if the peak hour is zero to CAISO for Demand Response resources under the slice-of-day (SoD) hourly framework.[105] As a result, DRPs are required to submit the DR NQC Monthly CAISO Supply Plan Template with all ~~four tabs filled out~~tabs completed as directed. The monthly NQC template and detailed guidelines on this process can be found in the "Instructions for Adding Demand Response Resource IDs to the Monthly NQC List" on the Resource Adequacy page of the Energy Division website, under the section titled, "2025 Demand Response Net Qualifying Capacity Filings for Demand Response Providers."

~~*CEC CED Peak Forecast Hours*~~

~~The California Energy Commission projects total California Energy Demand (CED), of which the current projections from 24-IEPR-03 project 2024-2040. This CED includes the peak load forecast hours for the CAISO system level, of which DRPs will need to use for their monthly NQC requests given SoD implementation. As a courtesy, ED Staff have compiled the peak load hours to be used for the next few years to be used from the CED 2024 Peak Forecast.[106] DRPs are required to use the most up-to-date hours regardless of the values provided here. For each filing year, the peak hours from only that year should be used for ex-ante LIP filings (ex. For filing year 2026 for RA year 2027, only the CED peak hours for 2027 would be used for all years in the filing).~~

~~*Table 3 - CEC CED 2024 Peak Forecast Hour Endings*~~

~~Year~~	~~Jan~~	~~Feb~~	~~Mar~~	~~Apr~~	~~May~~	~~Jun~~	~~Jul~~	~~Aug~~	~~Sept~~	~~Oct~~	~~Nov~~	~~Dec~~
~~2025~~	~~19~~	~~19~~	~~19~~	~~19~~	~~20~~	~~18~~	~~17~~	~~18~~	~~17~~	~~17~~	~~18~~	~~18~~
~~2026~~	~~19~~	~~19~~	~~19~~	~~19~~	~~20~~	~~18~~	~~17~~	~~18~~	~~17~~	~~17~~	~~18~~	~~18~~
~~2027~~	~~19~~	~~19~~	~~19~~	~~19~~	~~20~~	~~18~~	~~18~~	~~18~~	~~18~~	~~18~~	~~18~~	~~18~~

[104] Section 18, 2026 Resource Adequacy and Slice of Day Guide, R.23~~1~~-10-011~~002~~, Issued September 23, 2025, at 51.
[105] Appendix A, Section B, Requirements of RA Resources on page A-3.
[106] ~~CED 2024 Peak Forecast, https://efiling.energy.ca.gov/GetDocument.aspx?tn=262286~~

2028	19	8	19	19	20	18	18	18	18	18	18	19
2029	8	8	19	19	20	18	18	18	18	18	18	8
2030	8	8	19	19	19	18	18	18	18	18	18	8

Inquiries about the DR Month Ahead NQC Filings may be directed to Natalie Guishar (natalie.guishar@cpuc.ca.gov), Rebekah Daniel (), **Werner Blumer (werner.blumer@cpuc.ca.gov), and LoadImpactProtocolsInfo@cpuc.ca.gov.), Werner Blumer (werner.blumer@cpuc.ca.gov), and LoadImpactProtocolsInfo@cpuc.ca.gov.**

VIII. Using Templates

Protocol 26[107] of the LIPs details the required content of the reports, while Protocols 4-25 describe the output requirements and formats. Tables 4-1 and 9-1 contains a template for ex-post estimation; tables 6-1 and 9-2 displays a template for ex-ante estimates.[108] D.24-12-003 modified tables 4-1, 6-1, 9-1 and 9-2 for the changes approved in the LIP Simplification Report.[109]

The format of ex-post and ex-ante results described below allows for more efficient review of report outputs. A few elements are important to note:

1. The primary "Results" tab displays the underlying data found in the Summary, Lists, Enrollment, and Data tabs.

2. Underlying data tabs that support the primary "Results" tab must be included in the filing.

3. Uncertainty adjusted impact percentiles of 5%, 50%, and 95% are required to be presented in the ex-post and ex-ante tables.[110]

4. Pull-down menu options under each category should show several options:
   - Type of Results: Aggregate or Average
   - Portfolio: Portfolio-adjusted or Program-specific
   - Electric System: Relevant Utility or CAISO
     - Ex-ante projections should include an 'all' or 'CAISO' option
   - Day Type: Monthly System Peak Day, Typical Event Day, and Worst Day (if different than Monthly System Peak Day)[111]
   - Industry Type: Residential, Commercial, Industrial, Data Center, EV Fleet Charging Station
   - Forecast Year: Begins with Resource Adequacy Year (N) and (N+X, where X is each year thereafter for three years [years 1-3])
   - LCA: Relevant Local Capacity Areas for the relevant Utility
   - Sub-LAP: Sub-Load Aggregation Points for the relevant Utility

[107] Per Protocol 26 at 42.
[108] D.08-04-050 Attachment A, at 39 & 143, and 96 & 144, respectively.
[109] D.24-12-003 Appendix C at 1, 5, 7-8, & 8-9 respectively.
[110] D.24-12-003, Appendix C (4), (10), & (20) at 0, 3, and 5, respectively, altered D.10-06-036 Appendix B at 19 & 20.
[111] Per D.22-06-050, Appendix A, at 1: "The "worst day" is defined as the day of the month that contains the hour with the highest coincident peak load forecast." Worst day is required in ex ante projections per D.23-04-010, OP 11.

- Month: Each month of the year

5. All tables should be using kWh/hour for per-customer average and MWh/hour for aggregate customers.[112]

[112] D.24-12-003 Appendix C at 1, 5, and 7-9.