

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



May 17, 2024

Via E-mail and U.S. Mail

Mr. John Spomer, Senior Counsel
California Independent System Operator Corporation
250 Outcropping Way
Folsom, CA 95630

Re: Combined Subpoena for General RA information necessary for the CPUC to evaluate Resource Adequacy program and policies

Dear Mr. Spomer:

The California Public Utility Commission ("CPUC"), pursuant to its duties to establish and administer California's Resource Adequacy requirements for load serving entities under the CPUC's jurisdiction, subpoenas information and data in the possession of the California Independent System Operator ("CAISO"). The attached subpoena requests certain data and information necessary for the CPUC to evaluate the Resource Adequacy program and policies as detailed in Exhibit A.

This letter confirms that all confidential information contained in any documents produced by the CAISO in response to the above-referenced subpoena will be treated in accordance with the terms of the Confidentiality Letter Agreement between the Commission and the CAISO, dated April 28, 2004. If you have any questions or concerns, please feel free to contact me at (415) 703-5090.

Sincerely,

Aaron Jacobs-Smith

Aaron Jacobs-Smith
Attorney

cc: Eric Dupre, Analyst, Electric Market Design Section, Energy Division, CPUC
Jaime Gannon, Supervisor, Electric Market Design Section, Energy Division, CPUC
Natalie Guishar, Analyst, Electric Market Design Section, Energy Division, CPUC
Alex Intluxay, AGPA, Retail Choice Section, Energy Division, CPUC
Dina Mackin, Supervisor, Retail Choice Section, Energy Division CPUC

PUBLIC UTILITIES COMMISSION
STATE OF CALIFORNIA
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102

PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Re: Combined Subpoena for General RA information necessary for the CPUC to evaluate Resource Adequacy program and policies	SUBPOENA OR SUBPOENA DUCES TECUM (Cal. Pub. Util. Code § 311)
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THE PEOPLE OF THE STATE OF CALIFORNIA,

**TO: The Custodian of Record for the California Independent System Operator Corporation,
250 Outcropping Way Folsom, CA 95630**

1. Pursuant to section 311(a) of the Public Utilities Code, you are ordered to appear before the California Public Utilities Commission, located at 505 Van Ness Avenue, San Francisco, California, 94102 to testify as a witness in this matter unless your appearance is excused as indicated in box 2c below or you make an agreement with the person named in item 4 below.
2. You are:
 - a. ☐ Ordered to appear in person.
 - b. ☐ **Ordered to appear in person and produce the documents described in Exhibit A. The personal attendance of the custodian or other qualified witness and the production of the original records is required by this subpoena.**
 - c. ☒ Not required to appear in person if you produce copies of the documents described in Exhibit A to the persons named in item 4, below, and in Exhibit A, prior to the dates and times set forth in Exhibit A.
3. If you have been subpoenaed as a witness, you are entitled to witness fees and mileage actually traveled, as provided by law. You may request one day's witness and mileage fees for travel to and from the place you are required to appear. You may demand these fees at the time of service from the process server or from the party or attorney requesting the subpoena. If they are not paid or tendered at that time, or unless the subpoena was obtained by the Commission staff, you are not required to appear (Public Utilities Code Section 1791).
4. IF YOU HAVE ANY QUESTIONS ABOUT THIS SUBPOENA OR YOU WANT TO BE CERTAIN WHETHER YOUR PRESENCE IS REQUIRED, CONTACT THE FOLLOWING PERSON:

Name: Aaron Jacobs-Smith

Telephone: (415) 703-5090

DISOBEDIENCE OF THIS SUBPOENA MAY BE PUNISHED AS CONTEMPT BY THIS COMMISSION

By Order of the Public Utilities Commission of the State of California.

Dated this 16th day of May 2024.

Rachel Peterson

By: Rachel Peterson
Title: Executive Director

DECLARATION IN SUPPORT OF SUBPOENA DUCES TECUM

I, Aaron Jacobs-Smith, declare as follows:

1. I am an attorney duly licensed to practice in the State of California and am employed as a staff attorney for the California Public Utilities Commission (hereinafter “CPUC”). My business address is 505 Van Ness, San Francisco, California. Good cause exists for the production of the documents requested in the Subpoena Duces Tecum issued by the CPUC to the California Independent System Operator Corporation (“CAISO”), as set forth with particularity in Exhibit A attached to the Subpoena Duces Tecum.

2. It is my understanding and belief that the documents requested are in the custody, control and/or possession of the CAISO.

Executed under penalty of perjury under the laws of the State of California, on this 17th day of May 2024, at San Francisco, California.



Aaron Jacobs-Smith

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



**Exhibit A to
Subpoena for data and information necessary to evaluate the Resource Adequacy program,
reliability procurement, and integrated resource planning policies.**

INSTRUCTIONS AND DEFINITIONS

The following instructions and definitions apply to each Request for Production of Documents ("Request") herein, and each Request is to be responded to as if these instructions and definitions were set forth in full, with regard to it.

Each Request calls for all documents responsive to that Request that are in your possession, custody, or control, including documents in the possession of your attorneys, investigators, representatives, or others acting on your behalf or under your direction or control. You must make a diligent search of your records and of other papers and any materials in your possession or available to you or to persons subject to your influence and control.

If you claim privilege as to any documents, state the nature of the privilege, all facts that support the claim of privilege, the person claiming the privilege and a full and complete description of the document, including its title, date, author, nature, the job titles of the document's author(s), recipients(s), and persons copied (e.g., "cc" or "bcc"), form (e.g., letter, memorandum, etc.), subject matter and the name and address of the present custodian of the original or any copies of the document known to you.

The singular number and masculine gender as used herein also mean the plural, feminine or neuter, as is necessary to give the broadest possible scope to each Request.

The following definitions apply to each Request herein:

"DOCUMENT" means any written, printed, typed, recorded, magnetic, punched, copied, graphic or other tangible thing in, upon, or from which information may be conveyed, embodied, translated, or stored, including, but not limited to, papers, records, books, telegrams, telexes, dictation or other audio tapes, video tapes, computer tapes, computer disks, diskettes, CD ROMs, computer printouts, microfilm, microfiche, laser disks, diaries, calendars, photographs, charts, viewgraphs, drawings, sketches and all other writings or drafts thereof, as well as any other writings as defined in California Evidence Code Section 250. This definition expressly includes, without limitation, all originals, drafts, non-conforming copies, reproductions, facsimiles of written, typed or printed material of any kind, books, letters, contracts, minutes of meetings, memoranda, notes on desk calendars and appointment books, canceled checks, invoices, correspondence, telegrams, telex messages, intra-office communications, electronic mail messages, photographs and films, art work and information stored on tape, computer disk or any other type of data storage device. If copies of a document are not identical by reason of hand notations, initials,

identification marks or any other modification, each such non-identical copy is a separate document within the meaning of this definition.

"PERSON" means any natural person and any other cognizable entity, including without limitation, corporations, proprietorships, partnership, joint ventures, consortiums, Limited Liability Company, clubs, associations, foundations, governmental agencies or instrumentalities, societies, and orders. As used in the Requests, the acts and knowledge of a "person" are defined to include the acts and knowledge of that person's directors, officers, members, employees, licensees, representatives, agents, and attorneys.

"RESPONDENT" and "CAISO" or "ISO" refer to the California Independent System Operator Corporation (CAISO), its officers, directors, employees, agents, representatives, and attorneys, responding party(ies), their predecessor(s) and successor(s) in interest, their agents, employees, servants, officers, representatives, counsel, and anyone else acting on its behalf or at its request.

"RELATE" and "RELATING TO" mean consisting of, summarizing, identifying, explaining, reflecting, describing, discussing, pertaining to, containing, mentioning, concerning, illustrating, referring to, alluding to, responding to, commenting on, in respect of, about, regarding, discussing, involving, analyzing, constituting, or referring to in any way.

"ANY" includes and encompasses "all" and "all" includes and encompasses "any". "Or" includes and encompasses "and" and "and" includes or encompasses "or." Each of these terms shall be interpreted to give the broadest possible scope to each Request.

MATERIALITY

Currently, the CAISO provides the California Public Utilities Commission (CPUC) with ongoing access to the CAISO Outage Management System (OMS) Web Client and to the CAISO Daily Outage Report, pursuant to a CPUC subpoena dated September 30, 2003. As described in that subpoena, the CPUC developed General Order 167 ([GO 167](#)) to meet its obligations under California Public Utilities (PU) Code Section [761.3](#), which requires the CPUC to, among other things, implement and enforce maintenance and operation standards for electric generating facilities. The CPUC's Safety and Enforcement Division (SED) accesses OMS daily to obtain scheduling and outage information regarding individual generators.

PU Code [Section 380](#) requires that the CPUC, in consultation with the CAISO, establish resource adequacy (RA) requirements for all load serving entities within the CPUC's jurisdiction. Per [Section 380](#), RA requirements must facilitate the development of new generating capacity, equitably allocate the cost of generating capacity, and minimize enforcement requirements and costs. The CPUC's RA program annually establishes minimum capacity obligation requirements for CPUC jurisdictional load serving entities (LSEs) on a one year-ahead basis at both the system and local level, accounting for a planning reserve margin. CPUC Decision ([D.](#) [05-10-043](#)) established system RA requirements and [D.06-06-064](#)

established local RA requirements. The CPUC also adopted a flexible RA capacity requirement in [D.13-06-024](#). The CPUC requires all LSEs to demonstrate compliance with RA program requirements by entering capacity contracts with generators on a year-ahead (YA) and month-ahead (MA) basis, and in specific local areas. The CPUC's Energy Division (ED) administers the RA program, reviews all RA-related compliance filings, and advises the presiding Administrative Law Judge (ALJ) in the ongoing RA proceeding(s). In the current CPUC RA proceeding, [R.23-10-011](#), the CPUC is studying how internal transmission congestion may impact resource deliverability.

Additionally, as required by [AB 2514 \(Skinner, 2010\)](#), the CPUC opened [R.10-12-007](#) to consider the adoption of procurement targets for viable and cost-effective energy storage systems. Under that rulemaking, the CPUC issued [D.13-10-040](#), which established an energy storage target of 1,325 MW for Pacific Gas & Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company to be procured by 2020 and installed by the end of 2024. The decision also adopted an Energy Storage Procurement Framework and Design Program (Appendix A to [D.13-10-040](#)) that articulates grid optimization, renewable integration, and greenhouse gas (GHG) emissions reductions as the three guiding purposes of the CPUC's energy storage procurement policy.

At the heart of the study is an analysis of actual operations to date, including analyses of performance and operating behavior, market participation, and various monetized, quantified, and/or qualitative benefits towards the CPUC's guiding purposes of grid optimization, renewable integration, and GHG emissions reductions. To conduct this study, the study team and its consultants require accurate and detailed information about energy storage resources participating in the CAISO marketplace, as well as other CAISO system and market information relevant to assessing the performance of energy storage resources. The data requested in this subpoena will be used to inform modeling and analysis. The data may also be used to design or implement future CPUC studies regarding energy storage, distributed energy resources, or grid planning, and to draft future data requests or subpoenas (if needed).

Additionally, the CPUC, along with the California Energy Commission ([CEC](#)), the [CAISO](#), and the Governor's Office of Business and Economic Development ([GO-Biz](#)), is tasked by the [Governor's Emergency Proclamation of July 30, 2021](#) to work with the state's LSEs to accelerate plans for the "construction, procurement, and rapid deployment of new clean energy and storage projects to mitigate the risk of capacity shortages and increase the availability of carbon-free-energy at all times of day." The [Tracking Energy Development \(TED\) Task Force](#) determined that it would prioritize reliability projects that are expected to be online by 2023, along with the expansion of projects that can be online by 2026. The TED Task Force requests information on developers and projects in the interconnection queue in order to meet its objectives of addressing project barriers and supporting the state's reliability needs. Moreover, the information on developers and projects in the interconnection queue will be used by the CPUC in fulfilling its requirement under [SB 887](#) (Becker, 2022), now PU Code Section [454.27](#), which requires the CPUC to

provide “transmission-focused guidance to the CAISO about resource portfolios of expected future renewable energy resources and zero-carbon resources,” based on the technical feasibility and commercial interest of projects in each region.

With the passage of [Senate Bill \(SB\) 350 \(De León, 2015\)](#) and the subsequent PU Code Sections [454.51](#) and [454.52](#), the CPUC administers the Integrated Resource Planning (IRP) program ([R.20-05-003](#)) that among other things, requires the CPUC to “Identify a diverse and balanced portfolio of resources needed to ensure a reliable electricity supply that provides optimal integration of renewable energy in a cost-effective manner.”

This subpoena requests critical data and information to allow the CPUC to evaluate the success of the RA program on an annual and monthly basis, and to determine whether program modifications could improve the CPUC’s ability to fulfill its statutory duties in future program years. ED staff also requests the data in support of the IRP proceeding, in addition to the TED Task Force, and other modeling efforts. Specifically, ED staff uses plant-specific information for generators that are dispatched to serve CAISO and other California electricity demand in simulating their dispatch over hourly and potentially sub-hourly time steps. Calculating, predicting, and planning for reliability, cost, and GHG impacts related to IRP and energy storage procurement in the future, requires ED staff to have accurate and complete resource-specific operating characteristics of generating facilities. If ED staff needs to broaden the use of the requested data for additional purposes in accordance with PU Codes Sections [311](#), [380](#), [454.27](#), [454.51](#), [454.52](#), and [701](#), it will notify and confer with the CAISO on the scope of use for the data at issue.

As such, this subpoena is meant to be an inclusive subpoena, renewed annually. The subpoena requests that the CAISO deliver data to the CPUC at scheduled intervals, to reflect the availability of the data at the CAISO. The CPUC requests data in thirty-five (35) broad categories: (1) RA Import Allocations, (2) Supply Plans Filed and Monthly Supply Plan Validations for RA Resources, (3) [Item left intentionally blank], (4) Economic Bids and Self-Schedules, (5) CAISO Settlement Quality Meter Data (SQMD), (6) Access to the OMS Application, (7) Monthly Masterfile Data, (8) Flexible Capacity Needs Assessment Data and Allocations, (9) Access to CAISO Customer Interface for RA (CIRA), (10) Energy Management Systems (EMS) Data, (11a) Capacity Procurement Mechanism (CPM) and Capacity Solicitation Process (CSP) Results, (11b) Capacity Procurement Mechanism (CPM) Settlement Data, (11c) Reliability Must Run (RMR) Cost Data, (12) Reliability Event Reports Sent to the Western Electricity Coordinating Council (WECC), (13) Energy Market Settlement Data for Demand Response (DR) and Energy Storage Resources (PDR/RDRR/PDR-LSR, NGR/LESR/DDR, Pumped Storage Hydro, Hybrid), (14) CPUC Jurisdictional LSE Annual and Monthly Deficiency Notices, (15) Local Capacity Technical Study Data, (16) Local Residual Analysis, (17) CPM and RMR Designation Capacity Costs and Costs Allocations, (18) Notices of Intent to Retire, Mothball, or Return to Service, (19) CEC Subpoena Data, (20) RA Availability Incentive Mechanism (RAAIM) Data, (21) DR Registration System (DRRS) Information,

(22) Price Taker Export Analysis Underlying Data, (23) Use Limited Resource Information, (24) Wheeling Transactions, (25) Counting Firm Load as Contingency Reserves by Investor-Owned Utilities, (26) [Item left intentionally blank], (27) Generation Resource PNODE Longitude/Latitude, (28) Ancillary Services Market Settlement Data for DR and Energy Storage Resources (PDR/RDRR/PDR-LSR, NGR/LESR/DDR, Pumped Storage Hydro, Hybrid), (29) Identification of Co-located Energy Storage and Hybrid Resource Configurations, (30) Meter Data for Hybrid Energy Storage with a Variable or Intermittent Component, (31) Proxy Demand Response Commitment Cost Offers, (32) Data on Projects in the Interconnection Queue, Interconnection Customers, Deliverability Allocations, and Project Status, (33) Path 26 Historic Actual Flows and Path 26 Total Transfer Capability, (34) Market Bid Cap Data, and (35) Maximum Import Bid Price (MIBP) Data.

The schedule for delivery of requested information is presented in Table 1. The field names and date formats in the data files shall not be changed over the course of the year, or from one year to the next. CPUC requests that all data and notifications identified in this subpoena be sent to the following e-mail addresses: RAFiling@cpuc.ca.gov, aaron.jacobs-smith@cpuc.ca.gov, dina.mackin@cpuc.ca.gov, jaime.gannon@cpuc.ca.gov.

DESCRIPTION OF DATA REQUESTED

1. RA Import Allocations

The CPUC now has access to CAISO's CIRA application and no longer needs the CAISO to provide this Import Allocation file. However, if CIRA becomes inaccessible or if the data contained therein becomes inaccurate, CAISO will provide the import allocation information as detailed under Appendix D, under the schedule provided in Table 1.

2. Supply Plans Filed and Monthly Supply Plan Validations for RA Resources

The CPUC currently has access to supply plan validation files through the CIRA application. However, if CIRA becomes inaccessible or if the data contained therein becomes inaccurate, CAISO will provide to the CPUC information as detailed under Appendix D, under the schedule provided in Table 1.

3. [Item left intentionally blank]

4. Economic Bids and Self-Schedules

In order to evaluate Demand Response programs in the CAISO market, verify compliance with the CPUC Flexible, Local, and System RA compliance obligations, evaluate net qualifying capacity of combined heat and power (CHP) and biomass resources, assist staff in evaluating energy procurement and scheduling patterns, and enable staff to assess the interaction between market outcomes and reliability, the CPUC requests that the CAISO provide resource-specific hourly economic or self-schedule bid data for every generator and load, including: generators, RDRR, PDR, NGRs, imports, exports, and load that participate(s) in the CAISO electricity market. CPUC staff must assess patterns in bidding or scheduling of import and export energy as staff develops import and export assumptions about future load and resource balance for IRP modeling. In addition, to better assess market outcomes, CPUC staff must be able to assess demand bids in the CAISO markets.

Specifications of data: The following data can be provided in a single file. For bid segment data, the CPUC is requesting the max bid segment. On a case-by-case basis, however, the CPUC may request additional bid segments for a subset of information. These data allow the CPUC to analyze each individual generator, import or export energy resource, DR program, load, and aggregate quantities either economically bid or self-scheduled in the CAISO. All files will be in .csv format.

Generator and Demand Response (PDR/RDRR) – Information is requested for all of 2024 beginning on January 1, 2024, and continuing for each month through December 31, 2024, according to the timeline in Table 1.

Imports – The CPUC requests the following information for import energy resources that participate in the CAISO electricity market starting from January 1, 2024, through December 31, 2024, according to the timeline in Table 1. The CPUC will use the requested data to assess patterns in resource bidding and scheduling to enhance IRP modeling. CPUC will also use this data to adequately evaluate the current RA import rules (including qualifying capacity and Must Offer Obligation).

Exports – The CPUC requests the following information for exports from the CAISO electricity market starting from January 1, 2024, through December 31, 2024, according to the timeline in Table 1. CPUC will use these data to assess patterns in resource bidding and scheduling.

Load – The CPUC requests the following information for bid-in load in the CAISO electricity market starting from January 1, 2024, through December 31, 2024, according to the timeline in Table 1. CPUC will use this data to assess demand bidding patterns and to better understand market outcomes.

Multiple bid segments are noted below as “segment [X].”

<u>CPUC Field Name</u>	<u>ISO Native Field Name</u>
Unit Type	UNIT_TYPE
Resource ID	RESOURCE_NAME
Scheduling Coordinator ID	SCID
Trade Date	TRADE_DATE
Trade Hour	TRADE_HOUR
Real Time Market Dispatch Quantity	RTM_DISPATCH_QUANTITY
Real Time Market Dispatch Price	RTM_DISPATCH_PRICE
Real Time Bid Segment [X] Quantity	RTM_BID_QUANTITY
Real Time Bid Segment [X] Price	RTM_BID_PRICE
Real Time Market Self-Schedule Capacity (MW)	RTM_SELFCHEDMW
RUC Dispatch Quantity	RUC_DISPATCH_QUANTITY
Day Ahead Market Dispatch Quantity	DAM_DISPATCH_QUANTITY
Day Ahead Market Dispatch Price	DAM_DISPATCH_PRICE
Day Ahead Bid Segment [X] Quantity	DAM_BID_QUANTITY
Day Ahead Bid Segment [X] Price	DAM_BID_PRICE
Day Ahead Market Self-Schedule Capacity (MW)	DAM_SELFCHEDMW

Definition of each field name:

- a. **Unit Type** – To help differentiate generator, demand response, or import energy.
- b. **Resource ID** – The Resource ID for each unit
- c. **Scheduling Coordinator ID** – The four letter SCID that represents the SC for the resource.
- d. **Trade Date** – Please include every day of the month.
- e. **Trade Hour** – Please include all 24 hours each day.
- f. **Real Time Market Dispatch Quantity**– Please provide the hourly integrated MW quantity at which the resource was dispatched during the hour in the real time market.
- g. **Real Time Market Dispatch Price** – Please provide the hourly integrated dollar value dispatch price paid to the resource in the real time market.
- h. **Real Time Bid Segment [X] Quantity** – Please provide the MW range of each individual real time bid segment for the given hour in a separate field (replace “[X]” with “1,” “2,” etc.). If the resource does not bid, leave this field blank. Do not enter 0. The default request is for the max bid. On a case-by-case basis, the CPUC may request additional bid segments for a subset of information.
- i. **Real Time Bid Segment [X] Price** – Please provide the price of each individual real time bid segment for the given hour in a separate field (replace “[X]” with “1,” “2,” etc.). If the resource does not bid, leave this field blank. Do not enter 0. The default request is for the max bid. On a case-by-case basis, the CPUC may request additional bid segments for a subset of information.
- j. **Real Time Market Self-Schedule Capacity (MW)** – Please provide the MW quantity scheduled into the RTM if scheduled. If the resource bids and does not self-schedule leave this field blank. Do not enter 0.
- k. **RUC Dispatch Quantity** – Please provide the hourly MW quantity committed for this resource via the RUC process. If CAISO did not commit capacity via the RUC process for the resource in a given hour, leave this field blank. Do not enter 0.
- l. **Day Ahead Market Dispatch Quantity** – Please provide the hourly integrated MW quantity at which the resource was dispatched during the hour in the day ahead market.
- m. **Day Ahead Market Dispatch Price** – Please provide the hourly integrated dollar value dispatch price the resource received in the day ahead market.

- n. **Day Ahead Bid Segment [X] Quantity** – Please provide the MW range of each individual day ahead bid segment for the given hour in a separate field (replace “[X]” with “1,” “2,” etc.). If the resource does not bid, leave this field blank. Do not enter 0. The default request is for the max bid. On a case-by-case basis, the CPUC may request additional bid segments for a subset of information.
- o. **Day Ahead Bid Segment [X] Price** - Please provide the price of each individual day ahead bid segment for the given hour in a separate field (replace “[X]” with “1,” “2,” etc.). If the resource does not bid, leave this field blank. Do not enter 0. The default request is for the max bid. On a case-by-case basis, the CPUC may request additional bid data for a subset of information.
- p. **Day Ahead Market Self-Schedule Capacity (MW)** – Please provide the MW quantity scheduled into the IFM if scheduled. If the resource bids and does not self-schedule leave this field blank. Do not enter 0.

5. CAISO Settlement Quality Meter Data (SQMD)

CPUC requests provision of SQMD from all generators and load resources that participate in the CAISO electricity market. CPUC staff requires access to these data to properly evaluate performance of LSE contracted generation, develop NQC for CHP and biomass resources in the RA program, develop accurate production profiles for non-dispatchable resources in IRP and RA modeling, properly assess patterns of import and export to validate hourly modeling in the RA and IRP proceedings, and better understand and analyze market outcomes. CPUC staff are also evaluating patterns of energy flow and dispatch to inform long term procurement guidelines for LSEs and to inform our comments related to CAISO market design.

Resources covered: All generator types including (but not limited to) wind, hydro, solar, geothermal, biomass, and cogeneration; import resources; demand response; non-generating resources; and hybrid resources. Also include load in, imports to, and exports from the CAISO market.

Time period of data requested: For 2024 data, the CPUC requests provision of the T+12B and T+70B Settlement Quality Meter Data from January 1, 2024, through December 31, 2024, for all resources. A detailed schedule is described in Table 1.

Specifications of data: The CAISO is requested to prepare either one or two settlement files, depending on whether supply and load settlement data must be reported separately in CAISO’s system. (If not, one file is acceptable.) Supply settlement data should contain hourly (8,760 entries per year or 8,784 entries in a leap year) actual settlement quality meter data reported by all Resource IDs. Load settlement data should also contain hourly (8,760 entries per year or 8,784 entries in a leap year) actual settlement data for all loads. Each current supply and load Resource ID should be reported separately. Data should be listed using the current (*i.e.*, applicable in 2024) Resource ID; previous Resource IDs are not needed.

Data should be sent in a comma separated value (.csv) file. Six columns are needed:

- a. **Scheduling Coordinator ID** – the four letter SCID that represents the SC for the resource.
- b. **Res_ID** - Resource ID
- c. **Date** - The standardized date in the format MM/DD/YYYY
- d. **Hour** - The hour in which the MWh to be reported was generated. All hours should be in the hour-ending (1 through 24) format. For example, a data field with the number “4” will represent all the MWh produced in the hour from 0300 through 0359.59. There should be no adjustment for Daylight Savings Time. A year is presumed to have 8,760 hours occurring in it, except for leap years, which would have 8,784 hours.
- e. **MWh** - The total MWh metered (either positive for generation or negative for demand response) in the 60 minutes for the hour being reported. Missing data should be represented as a blank cell and periods of no generation should be marked as a zero.

- f. **Tie** – For imports and exports, report the intertie or scheduling point.

Description of intended use -The CPUC intends to use the requested data primarily for the purpose of preparing and posting to its website the following reports:

- a. Annual Net Qualifying Capacity Report for the subsequent compliance year: The CPUC or the CEC on the CPUC's behalf will use the settlement quality meter data to compute Qualifying Capacity values for intermittent resources subject to the CPUC counting conventions and will post the Net Qualifying Capacity totals on the CPUC website.
- b. Oversight of the DRAM Pilot: CPUC staff will use this data to oversee general DR program activities including the DRAM pilot.
- c. Assessment of market outcomes and reliability, which requires settlement data for all resources (including imports) and for both sides of the market (including exports and load settlements).
- d. The CPUC may retain this data and use it for other analytical purposes, although the CPUC will not publicly disclose the data in any other way without prior ISO notification and consultation.

6. Access to Outage Management Systems (OMS) Application

CPUC requests online access to transmission and generation outage information contained in the OMS application.

7. Monthly MasterFile Data

The CPUC requests the CAISO to provide monthly updates of data entered by generators into the MasterFile database so as the CPUC can maintain an up-to-date version of the MasterFile to monitor generator performance, reliability, and compliance with GO 167; to monitor PDR and RDRR resources; and to implement key features of the RA Program related to system physical and operational needs. The CPUC is responsible for directing the construction of sufficient generating facilities and market-integrated demand response to meet the CPUC's established reliability criteria in both the RA proceeding and the CPUC's Integrating Resource Planning (IRP) Proceeding. As more of the physical and operational needs of the system reflect specific performance qualities of specific plants (e.g., ancillary service capabilities, ramp rates, minimum start times etc.) for purposes of renewable integration, once-through cooling mitigation, and general IRP system needs assessments, the CPUC will need to monitor the quality and level of operational flexibility particular to each plant and across the generation fleet in general.

The CPUC seeks access to all listings by all Scheduling Coordinator IDs (SCIDs). In particular, the CPUC requests data corresponding to all fields listed in (1) the "Intertie RDT - RESOURCE" tab and (2) the "Generator RDT - RESOURCE" tab in the most recent "GRDT and IRDT Definitions" table.¹ CPUC also requests SEGMENT data corresponding to the fields listed in Appendix B, referring also to the "GRDT and IRDT Definitions" document.

Energy Division will use these data for purposes of reliability modeling as well as other purposes of procurement and demand response program oversight. The CPUC will publish a limited range of unit-specific data to its website to allow for stakeholders to understand the inputs to reliability modeling. The CPUC will maintain confidentiality of the MasterFile data.

Specifications of data: Please provide these files in .csv format. The CAISO is requested to submit data to the CPUC via the Commission's SFTP application, accessible via the link here:
<https://cpucftp.cpuc.ca.gov/>

¹ GRDT and IRDT Definitions file posted to the CAISO website here: <http://www.caiso.com/Documents/GRDTandIRDTDefinitions.xls>

8. Flexible Capacity Needs Assessment Data and Allocations

The CPUC requests that the CAISO provide the CPUC with the following information:

- a. Complete LSE responses to the CAISO data request made pursuant to Tariff section 40.10.1.2, asking for information on each wind, solar, and behind the meter resources owned, in whole or in part, by the LSE or entity under contractual commitment to the LSE for all or a portion of its capacity.
- b. Work papers used to add together wind, solar and behind-the-meter resources contained in the LSE data request responses.
- c. The time-shifted minute-by-minute variable energy output profiles used to calculate variable energy profiles. Please indicate which, if any, actual facilities are taken as models for the output data.
- d. Work papers used to scale the production data.
- e. The time-shifted 2023 minute-by-minute load data used to calculate the flexible capacity requirement.
- f. Work papers used to develop the monthly ISO minute-by-minute forecast from the CEC Integrated Energy Policy Report (IEPR) 1-in-2 monthly peak load forecast (Mid Demand Scenario, with mid AAEE) and/or from the CEC hourly load forecast (Mid Demand with mid AAEE and mid AAFS).
- g. The ISO's simulated minute-by-minute forecast of net load curves for the time frame of the annual study.
- h. Work papers used to calculate the minute-by-minute net load curves.
- i. The monthly peak load ratios used in the Flexible need equation.
- j. Work papers used to calculate the Seasonal Percentages Needed in each Category.
- k. Work papers used to allocate the CPUC its Flex RARs.
- l. Any new or additional data or workpapers in the 2025 assessment process that are not identified above and that would be considered necessary for Energy Division to review.

Specifications of data: Please provide the data listed above in .xlsx or SAS file format and include any additional information that would enable CPUC to understand and replicate the underlying calculations in the spreadsheets or data files.

9. Access to CAISO Customer Interface for RA (CIRA)

CPUC staff requests live access to the CIRA database for a limited number of CPUC staff. This access is necessary (as opposed to periodic data reports) to enable coordination with the CAISO Reliability Requirements process and to enable CPUC enforcement of RA program rules. Due to the complexity of the RA program, and differing submission requirements and formats, CPUC staff needs to verify the form and content of information submitted to the CAISO and to review automated or manual communication between the LSE and CAISO through the CIRA system.

Specifications of Data:

CPUC staff requests the ability to do the following actions:

1. Log securely into the CIRA system as needed throughout the month.
2. Review and export uploaded RA Filing data (both year ahead and month ahead) from all SCs that submit RA Plan data to CAISO (both CPUC jurisdictional and non-jurisdictional) on as needed basis by CPUC staff.

3. Review and export supply plan data submitted by all SCs that submit supply plans for RA compliance to CAISO whether the LSE being supported is CPUC jurisdictional or non-jurisdictional.
4. Review and export CEC forecasts uploaded by CEC staff for all LSEs whether CPUC jurisdictional or non-jurisdictional. Review of all calculations performed in CIRA to calculate RA obligations for LSEs.
5. Review and export any filing status, cross validation results, error logs, or communication/compliance logs developed by CIRA pertaining to RA plan data submitted by any SC for an LSE to CAISO.
6. Review hourly RA availability and curtailments.

Time period of data requested:

CPUC staff expects the CAISO to provide ongoing access to CIRA.

10. Energy Management System (EMS) Data

The CPUC requests the CAISO provide the CPUC with monthly actual hourly EMS load data for each month of 2024.

Specification of the Data:

The monthly files should include actual hourly EMS load data for the subareas used in the CAISO internal load forecast process, including the following fields. Data will be provided in .xlsx format. Please do not include commas in the load data.

<u>CAISO Data Field</u>	<u>Description</u>
Dates	Date and time as mm/dd/yyyy hh:00
Date	Date as mm/dd/yyyy
HR	Hour ending, as integer
PGE-BA w/o Pump Ld	PG&E Bay Area load without pump load
PGE-BA Pump Ld	PG&E Bay Area pump load
PGE-NBA w/o Pump Ld	PG&E non-Bay Area load without pump load
PGE-NBA Pump Ld	PG&E non-Bay Area pump load
SCE w/o Pump Ld	SCE load without pump load
SCE Pump Ld	SCE pump load
SDGE	SDG&E load
VEA	VEA load
CAISO Total	Total CAISO area load

11a. Capacity Procurement Mechanism (CPM) and Capacity Solicitation Process (CSP) Results:

The CPUC now has access to CAISO's CIRA application and does not need the CAISO to provide this CSP result. However, if CIRA becomes inaccessible or if the data contained therein becomes inaccurate, CAISO will provide the CSP information to the CPUC at a time mutually agreeable by the parties. The details of the information requested can be found under Appendix D; the schedule under which this information is to be provided can be found under Table 1.

11b. Capacity Procurement Mechanism (CPM) Settlement Data:

Please provide the CPUC with the following information for all CPM designations for 2024 in .xlsx format:

Trade_DATE – In this data set, the only use of the Trade_DATE is to track the month and year.

Charge_Name – Has the following three categories:

BA_MTH_RSRC_CPM_CAP_HRLY_AVG_DESIGNATED@QUANTITY – The MW quantity.

BA_MTH_RSRC_CPM_CAP_PMT@PRICE – The CPM price (\$/MW-year)

BA_MTH_RSRC_CPM_STLMT@AMOUNT – Total payment (price x quantity), expressed as a negative number.

Attribute1 - Business Associate ID (for CAISO Settlements use)

SC_ID - SC Short Name that corresponds to Attribute1 (Business Associate ID)

Attribute2 - Resource Name

Attribute17 - Bill Period Start Date

Attribute18 - Bill Period End Date

Attribute22 – CPM Type

Interval_Total – The total quantity, amount or price associated with Charge_Name

11c. Reliability Must Run (RMR) Cost Data:

The CPUC requests fixed and variable cost information related to all new RMR designations for 2023 and 2024. The CAISO does not have settlement data disaggregated in a way that currently meets the CPUC's request. The CPUC and CAISO staff will continue to discuss how to meet the CPUC's request.

12. Reliability Event Reports Sent to the Western Electricity Coordinating Council (WECC)

The CPUC requests that CAISO send to the CPUC the following three reliability event reports based on the specific event types listed for each:

- (a) Appendix C: Brief Template sent to WECC for all CPUC jurisdictional PTOs.
- (b) EOP-004 event reports sent to WECC for the following specific event types:
 - 1. BES Emergency requiring public appeal for load reduction.
 - 2. BES Emergency requiring manual firm load shedding.
 - 3. BES Emergency resulting in automatic firm load shedding.
 - 4. Loss of firm load
 - 5. System separation (islanding)
 - 6. Generation loss
- (c) OE-417 report sent to WECC when initiated by the CAISO (rather than a single PTO) or if the event impacts more than one PTO for the following specific event types:
 - 1. Uncontrolled loss of 300 Megawatts or more of firm system loads for more than 15 minutes from a single incident.
 - 2. Load shedding of 100 Megawatts or more implemented under emergency operational policy
 - 3. Loss of electric service to more than 50,000 customers for 1 hour or more
 - 4. Fuel supply emergencies that could impact electric power system adequacy or reliability.

Specifics of data: The completed event report sent to WECC following a reliability event.

13. Energy Market Settlement Data for Demand Response and Energy Storage Resources (PDR/RDRR/PDR-LSR, NGR/LESR/DDR, Pumped Storage Hydro, Hybrid):

The CPUC requests energy market settlement data related to demand response and energy storage resource performance covering 2024. The CPUC requests a summary file of any resource payment or charge with these specifications.

Resources covered by this item: Broad market participation models and resource types reflecting demand response and energy storage resources include the PDR and NGR models (PDR/RDRR/PDR-LSR and NGR/LESR/DDR), pumped storage hydro, and hybrid resources. Please include resources under those categories -or- under specific market participation models and resource types used by demand response and energy storage resources.

For 2024 data, the CPUC requests provision of the T+12B data from 1/1/24 through 12/31/24 for the prescribed resources. The CPUC also requests provision of the T+70B data for 07/01/24 through 10/31/24 only for Demand Response resources (PDR/RDRR/PDR-LSR). Files will be provided in .csv format. To save space, if a resource has not cleared at all in a day (a) for a given settlement type (d), the field will be omitted from the data file.

14. CPUC Jurisdictional Load Serving Entity (LSE) Annual and Monthly Deficiency Notices

The CPUC currently has access to CIRA as a Local Reliability Authority (LRA), which allows the CPUC to see LSE deficiencies directly after the submission deadlines. CPUC also receives direct notification of deficiencies, although the CAISO and the CPUC continue to coordinate which CPUC e-mail addresses should receive these notifications. If CIRA becomes inaccessible (or the data within CIRA become inaccurate) and if the direct notification functionality becomes inoperative, CPUC requests that CAISO notify CPUC of any LSE RA deficiencies as indicated in Table 1 and in Appendix D at the end of this document.

15. Local Capacity Technical Study Data

Access to the following data requires executing a separate non-disclosure agreement for eligible individuals. To better evaluate the results of CAISO's annual Local Capacity Technical (LCT) Study, the CPUC requests that the CAISO send dispatched base case PSLF files used for each local area and sub-area. This will include flat files of the generators and MW being dispatched in the power flow study to mitigate the N-1 and N-1-1 (or other studied) contingencies for each local area and sub-area in the draft and final studies. These files should be sent for the draft LCT study and the final LCT study, according to the schedule in Table 1. The term "LCT Study" incorporates all timeframes for which CAISO assesses local capacity. Other files can be provided in SPSS .sav format.

16. Local Residual Analysis

Access to the following data requires the execution of a separate non-disclosure agreement for qualified individuals. If the CAISO executes an annual year-ahead CPM, then the CPUC requests the CAISO provide the base case or proof of need for the impacted local area or sub-area within one calendar week of posting CPM designation report . Data format will be determined at the time of request.

17. Capacity Procurement Mechanism (CPM) and Reliability Must Run (RMR) Designation Capacity and Costs Allocations

Please provide the CPUC with the following information for all CPM and RMR resource adequacy credits for 2024 and year-ahead 2025, if any, that were not provided pursuant to the 2023 Subpoena:

- 1.) RA capacity allocations for each month of the designation.

CPUC requests allocations for individual jurisdictional LSEs for use in the RA compliance process.

CPUC believes that to fully analyze relative allocations and ensure fairness for California ratepayers, it is also necessary to have access to individual allocations for non-jurisdictional LSEs. CPUC and CAISO agree that they will continue to discuss a resolution to this request.

18. Notices of Intent to Retire, Mothball, or Return to Service

From time to time, the CAISO receives notices from generating resources about the planned retirement or mothballing of certain resources. The CAISO posts a list of these resources pursuant to its Generator Management Business Practice Manual. The list provides stakeholders with information regarding requests to change a resource status from active to retired, mothballed, or otherwise unavailable to the grid. In addition, there is an RSS feed available to the public which provides automatic notification when the list is updated. This is available at: <http://www.caiso.com/Pages/GlobalRSS.aspx>.

Under Section 41.2.1 of the CAISO Tariff, as approved by FERC on September 27, 2019, an intent to retire or mothball must be documented by a notarized affidavit (e.g., *Notice of Generating Unit Retirement or Mothball Including Rescission of Retirement or Mothball*) that provides the reason for the change in status, among other information. The CPUC requests these notarized affidavits as described in Table 1 at the end of this document.

Upon request by the CPUC, the CAISO will also provide the CPUC with copies of all letters or other notifications received from generating resources or the owners of generating resources related to the intent to retire the resource(s), mothball the resource(s), or return the resource(s) to service. This information will allow CPUC to remain apprised of market conditions affecting RA capacity as they arise.

19. California Energy Commission (CEC) Subpoena Data

Please provide the CPUC with all files sent to the CEC pursuant to the latter's subpoena of CAISO. This information will allow the CPUC to monitor CEC development of the RA load forecast, by ensuring the CPUC has access to the same data.

20. Resource Adequacy Availability Incentive Mechanism (RAAIM) Data

Please provide the CPUC with a list of resource adequacy availability incentive mechanism (RAAIM) Availability Incentive Payments and Non-Availability Charges assessed in 2023 and 2024.² The list should identify the month of the Availability Incentive Payments and Non-Availability Charges, the resource penalized or rewarded, and the amount of the Availability Incentive Payments and Non-Availability Charges. Data will be provided in .xlsx format.

The format of the data should include the following fields (but omit fields where the data is zero):

- a) SCID
- b) Resource ID
- c) Month
- d) Availability Incentive Payments or Non-Availability Charges

21. Demand Response Registration System (DRRS) Information

Energy Division seeks to better understand DR registration activity, particularly the frequency of movement of individual service accounts between Resource IDs. DR registration activity will assist in verifying the registration status of individual service accounts for incentive programs such as the Self-Generation Incentive Program Heat Pump Water Heater Program (SGIP HPWH). This information will also aid in determining Net Qualifying Capacity values and in assessing total available capacity within a given month and between months.

The format of the data should include the following required and optional fields, if available:

- | | |
|-----------------------------------|--------------------------|
| • DR Registration ID | • Service Account Number |
| • Resource ID | • UDC |
| • DRP ID | • LSE |
| • DRP SC | • Sublap |
| • DR Registration Start Date/Time | • Address |
| • DR Registration End Date/Time | • Zip Code |
| • Status | • Device Type |

The data is to be provided in .csv format monthly.

22. Price Taker Export Analysis Underlying Data

² Most of the 2023 data was delivered pursuant to the prior year's subpoena but since the last delivery falls into the next year, including 2023 data on this 2024 subpoena request to ensure completeness.

CPUC requests the underlying data for analyses that the CAISO conducts regarding the resources supporting Price Taker (PT) exports. This information will enable CPUC to assess market conditions and identify potential concerns regarding export activity. Please provide this data upon request according to the schedule in Table 1. This information will be provided in .xlsx format, to the extent possible.

23. Use Limited Resource Information

CPUC requests information associated with the “Use Limited Resource” flag in the MasterFile, for each resource that has this tag. This information will enable Energy Division to better understand the use limitations of resources and will also aid in refining the Maximum Cumulative Capacity Buckets. The data will be provided in .csv format.

24. Wheeling Transactions

CPUC requests information regarding wheeling transactions through the CAISO Balancing Authority Area, which will enable CPUC to better understand imports and exports. Please provide in .xlsx format the following information, according to the schedule in Table 1.

This request is divided into three parts.

Part a: Identifying wheeling transactions in settlements data.

The import and export legs of a wheel are already provided under item #5: Settlement Quality Meter Data. However, the import and exports pairs are not evident. The CPUC requests that the CAISO provide information that will identify the import and export legs of a wheel through the CAISO Balancing Authority Area, as well as transactions that are provided wheel through priority. This data will be provided in an .xlsx format.

Part b: Identifying priority wheels.

Based on CAISO’s Transmission Service and Market Scheduling Priorities Phase 2 policy approved in 2023 and implemented in 2024 for effective date June 1, 2024, forward, scheduling coordinators are able to support priority wheeling through transactions with available transmission capacity (ATC) in the monthly and daily timeframes with confirmation that the scheduling coordinator has a firm power supply contract with an external load serving entity. This information will identify priority wheeling-through transactions in the CAISO Balancing Authority Area. The CPUC requests a copy of (1) the priority wheeling throughs awarded at each of the interties, including the scheduling coordinator awarded capacity at each of the interties, the export location, as well as the MW quantity awarded in the monthly and daily timeframe, (2) if available, any terminations or modifications of firm power supply agreements underlying monthly or daily wheel-through priorities, including the import and export location, and MW quantity terminated or modified in the monthly and daily timeframe for the current month and following month. Please provide this data monthly by the last day of the month.

This data will be provided in .xlsx format.

Part c: Request for analysis backup

CPUC requests the underlying data for public analyses that the CAISO conducts regarding wheeling transactions. Please provide this data upon request according to the schedule in Table 1. This information will be provided in .xlsx format to the extent possible.

25. Counting Firm Load as Contingency Reserves by Investor-Owned Utilities

CPUC requests information regarding instances in which CAISO directs the investor-owned utilities to count firm load as contingency reserve under emergency conditions, after verifying the firm load shed is available within 10 minutes. This will enable CPUC to better understand market conditions during system

contingencies. Please provide an .xlsx file with the following information upon CPUC request, according to the schedule in Table 1.

Please provide a separate record for each investor-owned utility in each instance when one or more investor-owned utilities were directed to count firm load as contingency reserve.

IOU: Investor-owned utility that received the notice.

EVENT_START: Date and time of notice to start counting firm load as contingency reserve (mm/dd/yyyy hh:mm)

EVENT_END: Date and time of notice to stop counting firm load as contingency reserve (mm/dd/yyyy hh:mm)

MW: Amount of firm load that investor-owned utility was directed to count as contingency reserve, in megawatts

CPUC also requests CAISO filings submitted to NERC and WECC information regarding instances in which CAISO directs the investor-owned utilities to count firm load as contingency reserve under emergency conditions, after verifying the firm load shed is available within 10 minutes.

26. [Item left intentionally blank]

27. Generation Resource PNODE Longitude/Latitude

CPUC requests monthly updates of latitude/longitude information on all generation resource PNODES in the CAISO balancing area for which this data is available. This information will aid in understanding geographic capacity development patterns and in evaluating potential weather and environmental stressors affecting the availability of resource capacity. The data will be provided in .xlsx format and should include the following:

- a.) RES_ID (resource or PNODE)
- b.) LATITUDE_FF
- c.) LONGITUDE_FF.

28. Ancillary Services Market Settlement Data for Demand Response (DR) and Energy Storage Resources (PDR/RDRR/PDR-LSR, NGR/LESR/DDR, Pumped Storage Hydro, Hybrid)

CPUC requests ancillary services settlement data related to demand response and energy storage resource performance covering 2024. CPUC requests a summary file of any resource payment or charge with these specifications. Along with energy settlements in item #13 this information will aid in understanding market participation use cases, how they may affect the availability of RA capacity during grid-constrained periods, and trends in capacity resources' reliance on CAISO market revenues.

Resources covered by this item: Broad market participation models and resource types reflecting demand response and energy storage resources include the PDR and NGR models (PDR/RDRR/PDR-LSR and NGR/LESR/DDR), pumped storage hydro, and hybrid resources. Please include resources under those categories -or- under specific market participation models and resource types actually used by demand response and energy storage resources.

Specifications of settlement data file

The format of the data should include the following fields:

- a.) TRADE_DATE
- b.) BA_ID
- c.) RES_ID
- d.) RES_TYPE
- e.) ED_TYPE
- f.) MSS

- g.) ENTITY_TYPE
- h.) CHARGE_NAME including:
 - a. Day-ahead Spinning Reserve
 - b. Day-ahead Non-Spinning Reserve
 - c. Day-ahead Regulation Up Capacity
 - d. Day-ahead Regulation Up Mileage
 - e. Day-ahead Regulation Down Capacity
 - f. Day-ahead Regulation Down Mileage
 - g. Real-time Spinning Reserve
 - h. Real-time Non-Spinning Reserve
 - i. Real-time Regulation Up Capacity
 - j. Real-time Regulation Up Mileage
 - k. Real-time Regulation Down Capacity
 - l. Real-time Regulation Down Mileage
 - m. Flexible Ramp Up Uncertainty
 - n. Flexible Ramp Down Uncertainty
 - o. Flexible Ramp Forecast Movement
 - p. Black Start
 - q. Voltage Support
 - r. Uplift Payments for Exceptional Dispatch
 - s. Bid Cost Recovery
- i.) CHARGE_DESC
- j.) NUM_INTERVALS
- k.) INTERVAL_TOTAL
- l.) INT001–INT300

Files will be provided in .csv format. To save space, if a resource has not cleared at all in a day (a) for a given settlement type (h), the field will be omitted from the data file.

29. Identification of Co-located Energy Storage and Hybrid Resource Configurations

CPUC requests information necessary to identify energy storage resources as part of co-located and hybrid resource configurations participating in the CAISO market. This information will help the CPUC to understand the advantages and disadvantages of co-located batteries and hybrid resources to provide grid reliability and grid services compared to standalone energy storage resources. This information will also help the CPUC establish and validate resource adequacy qualifying capacity values and validate operational parameters for resources in co-located and hybrid configurations.

The CPUC requests a mapping of all Resource IDs to points of interconnection (POI). POI will help to identify co-located and hybrid resources. The data will be provided in .xlsx format and should include the following:

- a. Resource ID
- b. POI
- c. POI MW

30. Meter Data for Hybrid Energy Storage with a Variable or Intermittent Component

CPUC requests operational data necessary to understand the performance of energy storage configured as part of a hybrid resource participating in the CAISO marketplace. This information will help the CPUC to understand the realized advantages and disadvantages of hybrid batteries to provide grid reliability and grid services compared to standalone and co-located energy storage resources.

The CPUC requests five-minute meter operational data for each battery component of a hybrid resource with a variable/intermittent component, reported by market participants to the CAISO. The data fields should be submitted in .csv format and should include:

- a. Trade date
- b. (hybrid) Resource ID
- c. Component IDs
- d. FUEL_TYPE (corresponding to component ID)
- e. Meter data for intervals 1–300

31. Proxy Demand Response Commitment Cost Offers

On a monthly basis, the CPUC requests information on the commitment cost offers for both start-up and minimum load associated with Proxy Demand Response Resources (PDR) starting from January 1, 2024, through December 31, 2024, according to the timeline in Table 1. The CPUC requests information on both capped and pre-capped commitment cost offers for PDR resources, as available. Consequently, the CPUC needs the full scope of this data to assess all PDR costs considered by the market in order to evaluate costs throughout the market process. The data should be provided in .csv format.

32. Data on Projects in the Interconnection Queue, Interconnection Customers, Deliverability Allocations, and Project Status

On a quarterly basis, the CPUC requests information on project name, project queue numbers, planned online date, resource status, and proposed or confirmed resource ID for active projects in the interconnection queue. The CPUC is requesting resource status and planned online date in order to gain a better understanding of phased projects and whether projects are fully online. Data fields should include information on the following, until otherwise publicly available. The data will be submitted on the 15th day of the month following the reporting quarter. The data will be provided in .xlsx format and should include:

- a. Project Name
- b. Interconnection Customer Legal Entity Name
- c. Interconnection Customer Legal Entity Parent Company, if available
- d. Primary Contact Information (including e-mail or phone number, if available) of Interconnection Customer
- e. Queue Number
- f. Transmission Plan Deliverability Status (If PCDS, include percent or MW of status)
- g. Active Material Modification (Y/N)
- h. Project location if available (latitude/longitude)

33. Path 26 Actual Flows and Path 26 Total Transfer Capability

The CPUC requests information on actual flows across Path 26 between July and September for the years 2021-2023 and for the same period in 2024. The CPUC also requests historic Total Transfer Capability (TTC) for these same periods. The historic data should be provided in .csv format by July 15, 2024, for the 2021 – 2023 data and by November 14, 2024, for the 2024 data.

34. Market Bid Cap Data

The CPUC requests information on day-ahead and real-time energy market bid caps. The CAISO began to post real-time market bid caps on OASIS starting July 1, 2023. The CPUC requests both real-time and day-ahead market bid cap data for relevant intervals where the market bid cap increased above \$1,000/MWh since the CAISO implemented [FERC Order 831](#) Phase 1 provisions and on a monthly basis going forward. Historic day-ahead and real-time market bid cap data for relevant intervals (real-time data before July 1, 2023) should be provided by 6/30/2024. The data should be provided in .csv format.

35. Maximum Import Bid Price (MIBP) Data

The CPUC requests information on the day ahead and real-time MIBPs. The CPUC requests day ahead and real-time MIBP data since the CAISO implemented [FERC Order 831](#) Phase 1 provisions, and on a monthly basis going forward. Historic day ahead and real-time MIBP data should be provided by June 30, 2024. The data should be provided in .csv format.

Schedule for Delivery of Requested Information

Please provide the requested information to the CPUC, by the Close of Business (“COB”) according to the following schedule:

Table 1 Submission Dates (effective after the execution of subpoena and the due date for any objections to the production of responsive information has passed)

Item	Delivery Date to CPUC								
1. Resource Adequacy (RA) Import Allocations	If CIRA access is not available or data in CIRA are inaccurate, please provide the data detailed in Appendix D within three business days of the date when CIRA becomes inaccessible, or the data become inaccurate.								
2. Supply Plans Filed by Generators and Monthly Supply Plan Validations for RA Resources	<p>If CIRA access is not available or data in CIRA are inaccurate, please provide data as detailed in Appendix D, under the following timelines:</p> <p>Monthly supply plan files and initial validation files within three calendar days of the RA Filing due date. Please provide final validation files no less than four calendar days before the start of the compliance (trade) month.</p> <p>For annual supply plans and supply plan validations, provide files at the following times:</p> <p>(1) within 10 calendar days after the annual RA submission filing due date, and</p> <p>(2) within 10 calendar days after the CAISO due date for revisions to annual supply plans.</p>								
3. [Item left intentionally blank]	[Item left intentionally blank]								
4. Economic Bids and Self-Schedules	<p>For 2024 economic bids and self-schedules, please provide data for all CAISO resources, including all generation, load, imports, and exports on a monthly basis, by the last day of the month (or the next business day) following the reporting month. Data will be provided in .csv format.</p> <p>On a case-by-case basis, the CPUC may request additional bid information, such as full bid segments during specified seven-day-twenty-four-hour periods. Delivery dates for such a request will be negotiated separately pursuant to the request.</p>								
5. CAISO Settlement Quality Meter Data (SQMD)	<p>Please provide data monthly, according to the schedule below. Data will be provided in .csv format.</p> <table><tr><th>Trade Date</th><th>Resource</th><th>Publication date</th><th>Delivery date</th></tr><tr><td>1/1/2024 – 12/31/2024</td><td>CAISO generators, imports, exports, DR, load</td><td>T+12B</td><td><p>End of following month (or the next business day). For example:</p><ul style="list-style-type: none">First delivery: Jan 2024 Trade Dates by Mar 1, 2024</td></tr></table>	Trade Date	Resource	Publication date	Delivery date	1/1/2024 – 12/31/2024	CAISO generators, imports, exports, DR, load	T+12B	<p>End of following month (or the next business day). For example:</p> <ul style="list-style-type: none">First delivery: Jan 2024 Trade Dates by Mar 1, 2024
Trade Date	Resource	Publication date	Delivery date						
1/1/2024 – 12/31/2024	CAISO generators, imports, exports, DR, load	T+12B	<p>End of following month (or the next business day). For example:</p> <ul style="list-style-type: none">First delivery: Jan 2024 Trade Dates by Mar 1, 2024						

				<ul style="list-style-type: none">• Last delivery: Dec 2024 Trade Dates by Jan 31, 2025												
	1/1/2024 – 12/31/2024	CAISO generators, imports, exports, DR, load	T+70B	<p>Three months in arrears, by the end of the month or the next business day. For example:</p> <ul style="list-style-type: none">• First delivery: Jan 2024 Trade Dates by May 31, 2024• Last delivery: Dec 2024 Trade Dates by May 1, 2025												
6. Access to Outage Management System (OMS) Application	Ongoing, immediately.															
7. Monthly MasterFile Data	Please provide the MasterFile monthly, in .csv format. Specifically: <table><tr><td>January 25</td><td>July 26</td></tr><tr><td>February 26</td><td>August 23</td></tr><tr><td>March 25</td><td>September 24</td></tr><tr><td>April 24</td><td>October 25</td></tr><tr><td>May 24</td><td>November 22</td></tr><tr><td>June 24</td><td>December 27</td></tr></table> <p><i>Dates are aligned between items 7, 23, and 24b.</i></p>				January 25	July 26	February 26	August 23	March 25	September 24	April 24	October 25	May 24	November 22	June 24	December 27
January 25	July 26															
February 26	August 23															
March 25	September 24															
April 24	October 25															
May 24	November 22															
June 24	December 27															
8. Flexible Capacity Needs Assessment Data and Allocations	Please provide all data relative to the draft analysis (all items in Item 9) within 12 business days of posting the draft assessment. Please provide all data relative to the final assessment (all items in Item 9 that were modified since the draft assessment) within five business days of posting the final assessment. Data will be provided in .xlsx or SAS file format.															
9. Access to CAISO Customer Interface for RA (CIRA)	Ongoing, immediately.															
10. Energy Management System (EMS) Data	The monthly 2024 data should be provided to the CPUC by the 25 th of each month for the prior month. Data will be provided in .xlsx format. Please do not include commas in load data.															
11a. Capacity Procurement Mechanism (CPM) and Capacity Solicitation Process (CSP) Results	<p>If CIRA access is not available or data in CIRA are inaccurate, please provide the data as detailed in Appendix D, under the following schedule:</p> <p>Provide monthly CSP/CPM data on coming compliance month by the 4th day of each month.</p>															

	Provide annual data by November 14, 2024, for 2025 YA requirements. Provide intra-monthly data on the prior compliance month by the 4 th day of each month.																
11b. Capacity Procurement Mechanism (CPM) Settlement Data	Please provide data quarterly, within 60 calendar days after the quarter. Provide the latest settlement statement available. Data will be provided in .xlsx format.																
11c. Reliability Must Run (RMR) Cost Data	Once CPUC and CAISO staff have resolved how to meet CPUC’s request, please provide data quarterly, within 60 calendar days after the quarter. Provide the latest settlement statement available.																
12. Reliability Event Reports Sent to the Western Electricity Coordinating Council (WECC)	Please provide WECC reliability reports to staff the next business day after delivery to WECC.																
13. Energy Market Settlement Data for Demand Response (DR) and Energy Storage Resources (PDR/RDRR/PDR-LSR, NGR/LESR/DDR, Pumped Storage Hydro, Hybrid)	<p>Please provide monthly by the last day of the month following the reporting month. For 2024 data, the CPUC requests provision of the T+12B data from January 1, 2024, through December 31, 2024, for the prescribed resources. Files will be provided in .csv format. If a resource has not cleared for a given settlement type, the field will be omitted from the data file.</p> <table><tr><th>Reporting Data</th><th>Resource</th><th>Publication date</th><th>Delivery date</th></tr><tr><td>1/1/2024 – 12/31/2024</td><td>DR and Energy Storage (PDR/RDRR/PDR-LSR, NGR/LESR, DDR, Pumped Storage Hydro, Hybrid)</td><td>T+12B</td><td>End of following month (or the next business day). For example:<ul style="list-style-type: none">• First delivery: Jan 2024 Trade Dates by Mar 1, 2023• Last delivery: Dec 2024 Trade Dates by Jan 31, 2025</td></tr></table> <p>The CPUC also requests provision of the T+70B demand response data only for July 1, 2024, through October 31, 2024.</p> <table><tr><th>Reporting Data</th><th>Resource</th><th>Publication date</th><th>Delivery date</th></tr><tr><td>1/1/2024 – 12/31/2024</td><td>DR (PDR/RDRR/PDR-LSR)</td><td>T+70B</td><td>Three months in arrears, by the end of the month (or the next business day). For example:</td></tr></table>	Reporting Data	Resource	Publication date	Delivery date	1/1/2024 – 12/31/2024	DR and Energy Storage (PDR/RDRR/PDR-LSR, NGR/LESR, DDR, Pumped Storage Hydro, Hybrid)	T+12B	End of following month (or the next business day). For example: <ul style="list-style-type: none">• First delivery: Jan 2024 Trade Dates by Mar 1, 2023• Last delivery: Dec 2024 Trade Dates by Jan 31, 2025	Reporting Data	Resource	Publication date	Delivery date	1/1/2024 – 12/31/2024	DR (PDR/RDRR/PDR-LSR)	T+70B	Three months in arrears, by the end of the month (or the next business day). For example:
Reporting Data	Resource	Publication date	Delivery date														
1/1/2024 – 12/31/2024	DR and Energy Storage (PDR/RDRR/PDR-LSR, NGR/LESR, DDR, Pumped Storage Hydro, Hybrid)	T+12B	End of following month (or the next business day). For example: <ul style="list-style-type: none">• First delivery: Jan 2024 Trade Dates by Mar 1, 2023• Last delivery: Dec 2024 Trade Dates by Jan 31, 2025														
Reporting Data	Resource	Publication date	Delivery date														
1/1/2024 – 12/31/2024	DR (PDR/RDRR/PDR-LSR)	T+70B	Three months in arrears, by the end of the month (or the next business day). For example:														

				<ul style="list-style-type: none"> • First delivery: Jan 2024 Trade Dates by May 31, 2024 • Last delivery: Dec 2024 Trade Dates by May 1, 2024
14. CPUC Jurisdictional Load Serving Entity (LSE) Annual and Monthly Deficiency Notices	If CIRA access is not available (or data in CIRA are inaccurate) and if the direct notification functionality becomes inoperative, please provide the data as detailed in Appendix D within five business days following the relevant annual or monthly RA filing deadline.			
15. Local Capacity Technical Study Data	For cases that are in PSLF format, data will be provided within one business day of posting the final draft. For cases that are in other formats, such as .sav (and thus require conversion), data will be provided within 10 business days of posting the final draft.			
16. Local Residual Analysis	Provide information within 1 calendar week of posting CPM designation report. Data format will be determined at the time of request.			
17. Capacity Procurement Mechanism (CPM) and Reliability Must Run (RMR) Designation Capacity Costs and Costs Allocations	<ol style="list-style-type: none"> 1. For the year ahead RMR extension process, the CAISO will provide the resource adequacy credits prior to the annual resource adequacy showing deadline. 2. For new RMR contracts (intra-year), the CAISO will provide the resource adequacy credits four business days after the Federal Energy Regulatory (FERC) filing or effective date, whichever is later. 3. For the year ahead CPM, or any other CPM that is effective a minimum of 90 days or longer, the CAISO will provide the resource adequacy credits prior to the T-45 filing submission deadline for the month in which the credits will be active. 			
18. Notices of Intent to Retire, Mothball, or Return to Service	Please provide a notarized affidavit (e.g., <i>Notice of Generating Unit Retirement or Mothball Including Rescission of Retirement or Mothball</i>) within five business days of receipt by the CAISO Regulatory Contracts group. Upon request by CPUC, please provide other letters or notices to CPUC within five business days of receipt by the CAISO Regulatory Contracts group.			
19. California Energy Commission (CEC) Subpoena Data	Please provide CEC Subpoena files to CPUC on the same schedule as CAISO provides the files to CEC.			
20. RA Availability Incentive Mechanism (RAAIM) Data	Please provide Settlement Quality Meter Data for the remainder of 2023 and full year 2024 per the schedule below. Data will be provided in .xlsx format.			
	Trade date	Publication data	Delivery date	

	1/1/2023 –12/31/2023	T+70B	<p>Five months in arrears, by the end of the month (or the next business day). For example:</p> <ul style="list-style-type: none"> • First delivery: January 2023 Trade Dates by May 31, 2023 • Last delivery: December 2023 Trade Dates by May 1, 2024 <p>[Note: Most of the 2023 data was delivered pursuant to the prior year's subpoena but since the last delivery falls into the next year, we are including 2023 data on this 2024 subpoena to ensure completeness.]</p>
	1/1/2024 –12/31/2024	T+70B	<p>Five months in arrears, by the end of the month (or the next business day). For example:</p> <ul style="list-style-type: none"> • First delivery: January 2024 Trade Dates by May 31, 2024 • Last delivery: December 2024 Trade Dates by May 2, 2025
21. DR Registration System (DRRS) Information	Please provide data monthly in .csv format.		
22. Price Taker Export Analysis Underlying Data	Please provide, upon request, the underlying analysis CAISO used within three business days. The data will be provided in .xlsx format.		
23. Use Limited Resource Information	Quarterly (January 25, May 24, July 26, October 25, 2024). The data will be provided in .csv format. <i>Dates are aligned between items 7, 23 and 24b.</i>		
24. Wheeling Transactions	<p>The following data will be provided in .xlsx format.</p> <p><u>Part a:</u> Identifying wheeling transactions in settlements data.</p> <p>Information pairing the import and export legs of a wheeling transaction will be provided on the same timeline as the settlement data in #5.</p> <p><u>Part b:</u> Identifying priority wheels.</p> <p>For the priority wheeling through framework applicable through the end of May 2024, the CPUC requests the CAISO provide information from scheduling coordinators on the following schedule, which is 5 business</p>		

	<p>days after the T-45 resource adequacy and supply plans are due to the CAISO:</p> <table><tr><th>RA compliance month and year</th><th>Submission deadline to the CAISO.</th><th>Delivery date to the CPUC (5 business days later)</th></tr><tr><td>April 2024</td><td>02/16/2024</td><td>02/23/2024</td></tr><tr><td>May 2024</td><td>03/15/2024</td><td>03/22/2024</td></tr></table> <p>Schedule to continue until a new subpoena is signed.</p> <p><i>Dates are aligned between items 7, 23, and 24.b.</i></p> <p>Starting June 2024, the new Transmission Service and Market Scheduling Priorities Phase 2 policy supersedes the prior priority wheeling through framework. Please provide an update of priority wheeling through transactions on a monthly basis by the end of each month.</p> <p>The CPUC also requests, if available, information on terminations or modifications of firm power supply agreements underlying monthly or daily wheeling through priorities, including the import and export location, and MW quantity terminated or modified in the monthly and daily timeframe for the current month and following month. Please provide this data on a monthly basis by the end of each month, in .xlsx format.</p> <p>Part c: Request for analysis backup.</p> <p>Upon CPUC request, please provide within three business days.</p>	RA compliance month and year	Submission deadline to the CAISO.	Delivery date to the CPUC (5 business days later)	April 2024	02/16/2024	02/23/2024	May 2024	03/15/2024	03/22/2024
RA compliance month and year	Submission deadline to the CAISO.	Delivery date to the CPUC (5 business days later)								
April 2024	02/16/2024	02/23/2024								
May 2024	03/15/2024	03/22/2024								
25. Counting Firm Load as Contingency Reserves by Investor-Owned Utilities	<p>For 2024, upon CPUC request, please provide data within ten business days of any instance in which one or more investor-owned utilities were asked to count firm load as contingency reserve.</p> <p>Data, in .xlsx format, will be provided for January 1, 2023, through December 31, 2023, by May 28, 2024, or within five business days of closing of the period for objections to the subpoena, whichever is later.</p>									
26. [Item left intentionally blank]	[Item left intentionally blank]									
27. Generation Resource PNODE Longitude/Latitude	Please provide monthly by the last day of the month following the reporting month. The data will be provided in .xlsx format.									
28. Ancillary Services Market Settlement Data for DR and Energy Storage Resources (PDR/RDRR/PDR-LSR, NGR/LESR/DDR, Pumped Storage Hydro, Hybrid)	Please provide monthly by the last day of the month following the reporting month. The data will be provided in .csv format.									
29. Identification of Co-located Energy Storage and Hybrid Resource Configurations	Until publicly available, please provide monthly by the last day of the month following the reporting month. The data will be provided in .xlsx format.									

30. Meter Data for Hybrid Energy Storage with a Variable or Intermittent Component	Please provide the data in .csv format on a monthly basis by the last day of the month following the reporting month.		
31. Proxy Demand Response Commitment Cost Offers	Please provide monthly by the last day of the month following the reporting month. The data will be provided in .csv format.		
32. Data on Projects in the Interconnection Queue, Interconnection Customers, Deliverability Allocations, and Project Status	Please provide quarterly. The data will be submitted as two files on the 15 th day of the month following the reporting quarter. The data will be provided in .xlsx format.		
	Reporting Data	Data to Be Delivered	Delivery Date
	Q1	Q1	04/15/23
	Q2	Q1 and Q2	07/15/23
	Q3	Q3	10/15/23
	Q4	Q4	01/15/24
33. Path 26 Actual Flows and Path 26 Transfer Capability	Please provide data for July-September 2021-2023, by July 15, 2024, and the 2024 data by November 15, 2024. The data will be provided in .csv format.		
34. Market Bid Cap Data	Please provide historic day-ahead and real-time market bid cap data (real-time data before July 1, 2023), by June 30, 2024. Going forward, please provide day-ahead market bid cap data by the last day of the month following the reporting month. The data will be provided in .csv format.		
35. Maximum Import Bid Price (MIBP) Data	Please provide the day ahead and real-time MIBP data by June 30, 2024. Going forward, please provide the day ahead and real-time MIBP data by the last day of the month following the reporting month. The data will be provided in .csv format.		

If full production of any information item is not be possible within these time frames, please provide whatever partial information is available, together with a brief explanation of the circumstances preventing full production on that date, identifying the date on which full production of the requested information will be made; please fulfill production of the remaining documents by such date.

PROOF OF SERVICE BY MAIL

I am employed with the California Public Utilities Commission, and I am over 18 years of age. My business address is 505 Van Ness Avenue, San Francisco, California 94102.

On May ☒, 2024 I caused to be sent by email and by U.S. Mail the following document(s):

SUBPOENA DUCES TECUM

by depositing in a U.S. mailbox in stamped sealed envelopes, and by sending via email to the address and email address below.

Mr. John Spomer, Senior Counsel
California Independent System Operator Corporation
250 Outcropping Way, Folsom CA 95630
jspomer@caiso.com

Executed under penalty of perjury under the laws of the State of California, on this ☒ day of May, 2023 at San Francisco, California.

/s/ ☒



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