DOCKETED	
Docket Number:	24-IEPR-02
Project Title:	Electricity Resource Plans
TN #:	258177
Document Title:	Supply Forms Instructions
Description:	N/A
Filer:	Pam Fredieu
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	7/30/2024 11:09:25 AM
Docketed Date:	7/30/2024

DOCKETED	
Docket Number:	23-IEPR-02
Project Title:	Electricity Resource Plans
TN #:	258144
Document Title:	Supply Forms Instructions
Description:	N/A
Filer:	J Padilla
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	7/29/2024 2:51:18 PM
Docketed Date:	7/29/2024

CALIFORNIA ENERGY COMMISSION

California Energy Commission

COMMISSION REPORT

Forms and Instructions for Submitting Electricity Resource Plans and Transmission Information

Prepared in Support of the *2025 Integrated Energy Policy Report*

Gavin Newsom, Governor

August 2024 | CEC-200-2024-008

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ABSTRACT

These are forms and instructions for load-serving entities to report their electricity resource plans for forecast years 2024 through 2033 and historical years 2022 and 2023. Load-serving entities in California are required to submit plans showing how demand for energy and their annual peak load will be met by specific supply resources. These forms and instructions will be considered for adoption by the California Energy Commission at a business meeting in August 2024.

Keywords: Electricity resource plans, supply forecasts, resource adequacy, forms and instructions, California load serving entities, *2025 Integrated Energy Policy Report*

Use the following citation for this report:

Kennedy, Robert and Gutierrez, Julio. 2024. *Forms and Instructions for Submitting Electricity Resource Plans: Prepared in Support of the 2025 Integrated Energy Policy Report.* California Energy Commission. Publication Number: CEC-200-2024-002

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EXECUTIVE SUMMARY

This report describes information for electricity planning that is needed by the California Energy Commission (CEC) to prepare the *2025 Integrated Energy Policy Report*. This report also provides forms with instructions that show how load serving entities, such as a utility company or energy service provider, account for reliability by planning to meet future electricity capacity and generation requirements. This planning process is defined as the electricity resource plan and procurement information that must be submitted using common terms and conventions. The forms and instructions described in this report will be considered for adoption at the CEC's August 2024 business meeting.

California Public Resources Code Sections 25300–25323 direct the CEC to regularly assess all aspects of energy demand and supply. These assessments will be included in the *2025 Integrated Energy Policy Report* or in supporting reports and will provide a foundation for policy recommendations to the Governor, Legislature, and other agencies. The broad strategic purpose of these policies is to conserve resources, protect the environment, ensure energy reliability, advance renewable energy development, promote energy efficiency, support research innovation, and protect public health and safety.

To carry out these energy assessments, the CEC is authorized to require California market participants to submit historical data, forecast data, and assessments. California Public Resources Code Sections 25216 and 25216.5 provide broad authority for the CEC to collect data and information "on all forms of energy supply, demand, conservation, public safety, research, and related subjects."

These electricity planning assessments will form the basis for recommendations in the *2025 Integrated Energy Policy Report*. Resource plans from publicly owned utilities may also serve as system resource plans for the California Public Utilities Commission (CPUC), helping to align procurement plans with local area reliability needs. Resource plans by load-serving entities, individually and collectively, are expected to inform controlled grid studies by the California Independent System Operator (California ISO) and other regional balancing authorities.

CHAPTER 1:
General Instructions

The forms for the collection of data and assessments for the Integrated Energy Policy Report have been revised from previous versions, and, as a result, users should always submit the most recently adopted version. The most significant change to the forms in this reporting cycle is the request for transmission information, interconnection queue codes,[1] and technology subtypes. California Energy Commission (CEC) staff made minor changes to simplify report preparation. These changes are explained below.

Who Must File What by When

In adopting these forms and instructions, the CEC specifically requires load-serving entities (LSEs) other than investor-owned utilities (IOUs) to file certain electricity resource planning information by Friday, November 15, 2024, to be available for analysis during the *2025 IEPR*.[2],[3] IOUs are required to file resource planning information by Friday, November 22, 2024. This requirement is a change from previous reporting cycles, where supply forms were submitted during the IEPR year. Except for files clearly marked as confidential, the data submitted will be docketed to the Integrated Energy Policy Report (IEPR) service list.

LSEs that require additional time may request an extension by submitting a written request to the executive director, as described in the California Code of Regulations (CCR), Title 20, Section 1342. A copy of the request must be sent to Robert Kennedy at Robert.Kennedy@energy.ca.gov.

The electricity supply resource plan information to be provided by LSEs is identified on the following forms, which are included with these instructions:

- CEC Form S-1 Capacity/Energy Procurement Requirement Form
- CEC Form S-2 Capacity/Energy Supply Resources Form

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[1] A queue code or queue number is assigned by the California ISO to establish the order of projects relative to all other pending valid interconnection requests.

[2] A Load Serving Entity (LSE) is defined as an entity responsible for securing energy to meet the demand of its customers. LSEs include investor-owned utilities, publicly owned utilities, electric service providers, and community choice aggregators.

[3] An Investor-Owned Utility (IOU) is a private electric utility company that is owned by shareholders.

- CEC Form S-2A Addendum Monthly Data
- CEC Form S-3 2021 Small Publicly Owned Utility Hourly Loads
- CEC Form S-5 Bilateral Contracts and Power Purchase Agreements
- CEC Form T-1 Transmission Form

Electricity supply forms are required from every utility that has electric end-use customers in California. Utilities are organized into two groups:

- Large utilities with annual peak loads equal to or more than 200 megawatts (MW) in either 2022 or 2023.
- Small utilities with annual peak loads less than 200 MW in both 2022 and 2023.

Transmission form T-1 is required for all transmission owners with projects 100 kV or greater or projects that meet the National Electric Reliability Corporation's definition of facilities that are part of the bulk electric system.

As in recent IEPR cycles, five organizations are requested to file certain forms either for others or themselves, even though they are not required to file.

1. The Northern California Power Agency (NCPA) is requested to file on behalf of the 10 LSE members of the NCPA Pool.[4] The 10 NCPA members are:
    a. Alameda Municipal Power.
    b. City of Biggs.
    c. City of Gridley.
    d. City of Healdsburg
    e. Lodi Electric Utility.
    f. City of Lompoc.
    g. City of Palo Alto.
    h. Plumas-Sierra Rural Electric Cooperative.
    i. Port of Oakland.
    j. City of Ukiah.

[4] The Northern California Power Agency (NCPA) is a public agency made up of several city-run electric companies in Northern California. These member utilities work together through NCPA to achieve common energy goals. NCPA is a cooperative organization that helps its members with different aspects of managing and developing energy resources.

2. The California Department of Water Resources
3. The City of Vernon
4. The City and County of San Francisco (even though its firm end-use customer peak load did not exceed 200 MW in 2022 or 2023)
5. The Western Area Power Administration (WAPA) has requested to file for publicly owned distribution utilities that rely on WAPA.[5] Doing so enables WAPA to meet its full requirements to these customers.

Filing Electricity Resource Plans with the Energy Commission

LSEs are required to submit electricity resource plans electronically using the CEC's e-filing system. A user's guide to the e-filing system is posted at http://www.energy.ca.gov/e-filing/. After logging in as a registered user, select the proceeding (24-IEPR-02) for the Electricity Forecast.

Include the LSE's name in all file names. Attachments and cover letters should be submitted as separate files and clearly identified. Cover letters that identify documents that are part of the filing are unnecessary.

Files are required in these formats:

- Numerical data on specified forms using Microsoft® Excel®
- Narratives and cover letters in Microsoft Word® or Adobe Acrobat®

Table 1 provides form filing requirements and requests by LSE type and size.

Requesting Confidentiality

If requesting confidentiality for any parts of a filing, read and follow the instructions in **Appendix A**.

For confidentiality applications that require document signatures, the words "Original signed by" and the signee's typed name can serve in lieu of a wet signature. Yellow fill should be used to highlight cells for which the LSE is requesting confidentiality. CEC staff will use color coding to track requests and protect data determined to be confidential.

Use the New Forms

[5] The Western Area Power Administration (WAPA) is a federal agency within the U.S. Department of Energy tasked with managing and distributing electric power from federal hydroelectric projects. WAPA plays a critical role in providing reliable and affordable electricity to customers throughout the western United States.

The data forms have changed since the *2023 IEPR* cycle. Do not update old forms from the last cycle — previous versions will not be accepted.

New templates for the data forms are available either on the CEC website at https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=24-IEPR-02 under the 24-IEPR-02 Docket, or from Robert Kennedy at Robert.Kennedy@energy.ca.gov or (916) 891-8548.

Upon submission, CEC staff will incorporate filed forms into a database. Following these spreadsheet guidelines facilitates the process of entering the information into the database:

- Do not delete any columns.
- Do not delete any rows.
- Do not change headers.
- Do not reorder the rows.
- Where more than one item is requested in the same cell, use a semicolon to delimit the data. Other delimiters, such as commas, are not accepted by the database.
- Additional rows may be inserted in the same category. For example, under Total Renewable Contract Supply, rows inserted below line 6b will have the same formatting as line 6b.
- If a row is not used, leave the cells blank to simplify database entry.

Table 1: Energy Commission Forms Filing Requirements and Requests

LSE Type and Size	Peak Load Years to Determine Size	Load and Resource Data Years	Capacity/Energy Procurements Requirement Table (S-1)	Capacity/Energy Supply Resources Table (S-2) with Addendum	Small Publicly Owned Utility Hourly Loads Table (S-3)	Bilateral Contracts and/or Power Purchase Agreements (S-5)	Transmission Forms (T-1)
IOU - Large	2022 or 2023	2022-2033	**Required**	**Required**	**Not Required**	**Required**	**Required**
IOU - Small	Not Applicable	Not Applicable	N/A	N/A	N/A	N/A	**Required**
POU - Large	2022 or 2023	2022-2033	**Required**	**Required**	N/A	**Required**	**Required**
POU - Small	2022 or 2023	2022-2024	**Required**	**Required**	**Required**	N/A	**Required**
ESP - Large	2022 or 2023	2022-2028	**Required**	**Required**	N/A	**Required**	N/A
ESP - Small	Not Applicable	Not Applicable	N/A	N/A	N/A	N/A	N/A
CCA - Large	2022 or 2023	2022-2033	**Required**	**Required**	N/A	**Required**	N/A
CCA	Not Applicable	Not Applicable	N/A	N/A	N/A	N/A	N/A
Transmission Owners	Not Applicable	Not Applicable	N/A	N/A	N/A	N/A	**Required**
Requested to File							
NCPA (for 10 LSEs)	Not Applicable	2022-2033	Requested	Requested	Requested	Requested	Requested
California DWR	Not Applicable	2022-2033	Requested	Requested	Requested	Requested	Requested
City of Vernon	Not Applicable	2022-2033	Requested	Requested	Requested	Requested	Requested
San Francisco	Not Applicable	2023-2033	Requested	Requested	Requested	Requested	Requested
WAPA*	Not Applicable	2022-2024	Requested	Requested	Requested	Requested	Requested

* **For publicly owned distribution utilities that rely on WAPA, WAPA's assistance is requested to enable its full requirements for publicly owned distribution utility customers to submit Forms S-1, S-2, S-3, S-5, and T-1 including load and resource data for 2022 through 2024.**

Source: Data Integration Branch, California Energy Commission.

Electricity Resource Planning Forms: Administrative Information

Preparer

The first tab on the file provides information about who prepared the forms, when they were completed, and contact information.

Name of LSE

This is the legal or business name of the LSE. Entries on this tab will auto-populate to subsequent tabs.

Name of Resource Planning Coordinator

For larger utilities, this is the person responsible for responding to this data submittal requirement and transmitting the forms.

Name and Title of Persons Who Prepared Supply Resource Forms

The person responsible for the accuracy and completeness of the forms.

Contact Information

Accurate contact information facilitates the review of the filing.

Date Completed

The date the form was completed.

Date Updated by LSE

This line is for subsequent updates or revisions that may be provided by the LSE.

CHAPTER 2:
Forms S-1 and S-2, S-2A Addendum

Introduction

Form S-1 is the Capacity/Energy Requirement Form used by the LSE to project expected peak loads in MW. It also shows the LSE's forecast of total annual energy demand in gigawatt-hours (GWh). The time frame of the projection is from 2024 through 2033. It also shows actual load for 2022 and 2023.

Form S-2 is the Capacity/Energy Supply Resources Form to provide the types of resources and, where known, the specific resource, such as a solar generation plant. The time frame of the projection is from 2024 through 2033. It also shows actual supply for 2022 and 2023.

There is one important difference with how capacity and energy are treated in Form S-2 for 2022 and 2023. For capacity, LSEs are to show capacity supply resources that were available to meet the actual peak load. For energy, LSEs are required to show actual amounts of energy supply that were procured to meet energy requirements in Calendar Years 2022 and 2023.

The S-2A Addendum is included to show monthly changes in available capacity and energy output for a particular resource.

Form S-3 applies to small, publicly owned utilities (POUs) only and is a simplified version of the demand form. By filing Form S-3, small POUs are not required to file any of the demand forms. They are required to report hourly historical loads for the previous calendar year according to language in Section 1346 on Electricity Resource Adequacy (CCR, Title 20, Division 2, Chapter 3, Article 2).

Form S-5 is for Bilateral Contracts and Power Purchase Agreements (PPAs). This information is used to assess characteristics of statewide supply and demand balances related to contracts with in-state and out-of-state capacity, whether the supplier has control of a resource or will in the future, and circumstances of resource unavailability during peak hours. In Form S-5, general terms are listed that explain how a contract may provide qualifying capacity for LSEs serving loads within the California ISO's Balancing Authority Area (control area) or provide dependable capacity for LSEs serving loads in other control areas.

Forms S-1 and S-2

General Instructions for Forms S-1 and S-2

Form S-1 and Form S-2 demonstrate how the LSE expects to serve end-use loads and meet other firm obligations. Form S-1 shows an LSE's requirements in terms of energy and capacity. Form S-2 shows how an LSE may meet its requirements through resources, contracts, and market purchases.

LSEs are expected to have increasingly large open positions for capacity and energy during the later years of the reporting period due to existing resources retiring, contracts and PPAs expiring, and renewable resources that have yet to be procured to meet an increasing Renewables Portfolio Standard (RPS).

While an LSE's planning efforts may have resulted in a preferred scenario in which certain generic resources are developed, the LSE is not required to demonstrate how it will fill these positions, absent a strong likelihood that resources of a particular fuel type will be procured. Such resources, if part of the LSE's submitted resource plan, should be identified as "generic." Further discussion of this topic can be found in **Appendix B**.

Instructions Specific to Form S-1

In the S-1 Capacity/Energy Requirement Form, LSEs are required to enter estimates of peak load capacity requirements (in MW) as well as annual energy needs (in GWh).

On a separate table below the main body of Form S-1 (lines 19–25), LSEs are required to report actual peak loads in Calendar Years 2022 and 2023.

Instructions Specific to Form S-2

In the S-2 Capacity/Energy Supply Resources Form, LSEs are required to list resources and estimate how much capacity in MW is needed to serve calendar year annual peak retail customer load, plus reserves and other obligations. The table to the right pertains to energy (in GWh) rather than capacity and shows how much energy is expected to come from the same electricity supply resources listed.

Form S-2 shows how much capacity is expected to be available to meet an LSE's annual peak load using either net qualifying capacity (NQC) or peak dependable capacity as appropriate for the LSE. Form S-2 should include all LSE-owned or controlled resources and all planned resources. Generic resources should be identified as such. The distinction between planned and generic resources is discussed in **Appendix B**.

After listing the resource, input the CEC Plant/Unit Identifier (CEC ID) number in the appropriate column. Out-of-state resources are identified with an Energy Information Administration identification (EIA ID) number. If available, also input

the California ISO ID resource identification code (Resource ID) for resources that are within the California ISO service territory. See the instructions below on how to obtain the correct identifier number.

Values reported on Form S-2 should be consistent with year-ahead resource adequacy filings.[6] Do not use or report values for installed capacity or California ISO-defined maximum power capacity on Form S-2.

Plant/Unit Identifiers: CEC ID, California ISO Resource ID, EIA Number

The rapid proliferation of small resources (1 MW to 5 MW) providing wholesale energy has made it increasingly difficult to compile and maintain data on California's generation fleet and how it is used to serve LSE loads and resource adequacy needs. Assigning identifying text strings to generation resources simplifies the accurate identification of generation plants and units. There are three such text strings that are commonly assigned to power plants: the CEC ID, the Resource ID, and the EIA ID. The LSE is to provide at least one identifier for each power plant specified in the contract, preferably the CEC ID.

Generation resources interconnected to California balancing authorities, other than California ISO, or dynamically scheduled into them, are assigned a CEC ID, which may be found in the Energy Commission Power Plant ID Cross Reference Table at https://www.energy.ca.gov/media/7924.

Generation resources interconnected to the California ISO (or dynamically scheduled into the California ISO control area) are assigned a Resource ID by the California ISO. If the contract specifies such a resource or resources, this identifier should be provided here. California ISO Resource IDs are contained in the California ISO's Generator Interconnection Resource ID Report, which can be found at https://www.caiso.com/generation-transmission/generation/generator-interconnection.

Generation resources that are planned or under construction in California will not have an assigned CEC ID. Those in the California ISO may or may not have an assigned Resource ID. If neither identifier has been assigned, enter "none."

Generation resources located in balancing authorities other than those in California (and not dynamically scheduled into a California balancing authority) will not have a Resource ID or a CEC ID. Existing out-of-state resources will have an EIA number, which can be found at https://www.eia.gov/electricity/data/eia860/.

6 For 2024, the list of NQC values has been posted at the California ISO website at http://www.caiso.com/planning/Pages/ReliabilityRequirements/Default.aspx.

For questions regarding these identifiers, contact Michael Nyberg at Michael.Nyberg@energy.ca.gov or (916) 931-9477.

Queue Number

For resources that have yet to come on-line and have not been assigned a plant/unit identifier, please insert the queue number if known. For resources within California ISO service territory, please use the queue code found on the following list: The ISO Generator Interconnection Queue. For those resources that reside outside California ISO service territory, please use a queue code found here: Generator Interconnection Resource ID Report.

Hybrid Resource

List the resource name and ID codes for a hybrid resource as you would for other resources. In the drop-down list for Fuel Type, select Hybrid. Do not list any more information for this resource.

Follow these instructions for each technology type associated with this particular hybrid resource: In the next line down, indent and then list one technology type for this resource. Select the appropriate fuel type for this technology. Proceed to fill in information on nameplate capacity, control area, latitude, and longitude. If the Resource ID code is provided, it is not necessary to fill in latitude and longitude information. Fill out the capacity and energy data for this technology as would be done for any resource. If applicable, check the monthly data and incremental capacity addition box and follow instructions for both instances. Repeat for each additional technology for the hybrid resource.

Resource Capacity and Adequacy

The capacity of each resource, whether existing or planned, is a fundamental aspect of an LSE's electricity supply portfolio. For IEPR electricity resource purposes, there are two ways of measuring capacity — dependable capacity and net qualifying capacity (NQC). LSEs that provide end-use electrical services in the California ISO control area are required to report and use current NQC values for existing resources and to project these values through the end of the forecast period. Other LSEs should use dependable capacity values for current and projected resources.

Net Qualifying Capacity and Dependable Capacity

LSEs that provide end-use electrical services in the California ISO's control area are required to use current NQC values. These values are determined annually and used by the CEC, the California Public Utilities Commission (CPUC), California ISO, and others for resource adequacy requirements and other uses.

LSEs serving end-use loads in other control areas are to use the dependable peak power capacity values they use for planning. Dependable capacity is the amount of capacity from each generation source that is considered firm and

reliable for meeting load forecasts occurring during the annual peak hour. This amount would be measurable at the busbar.[7] For variable energy resources without flexible dispatch (such as solar and wind), dependable capacity estimates should reflect the expected availability of energy from these resources at the time of the annual peak and the variable nature of this supply. Capacity values should not be adjusted for expected forced outage rates.

Resource Adequacy

Resource adequacy[8] is another aspect of an LSE's electricity supply portfolio. These resources provide additional electrical generation that can be called upon during periods when other resources in the portfolio are not available, demand exceeds the regular resources of the portfolio, or both. California LSEs are typically required to maintain a portfolio of resources that is 115 percent[9] of their expected annual peak load. One example of a resource adequacy requirement that a resource must meet is the ability to operate four consecutive hours for three consecutive days.

Resources used for resource adequacy, as shown in the forms, should count only insomuch as the capacity of these resources can be relied upon to perform. For contractual resources, an LSE must use the capacity that is expected to be available to meet annual peak loads (either NQC or peak dependable capacity) depending on whether they are inside or outside the California ISO's control area. In addition, these resources must be available to the LSE throughout the forecast period.

7 A system of electrical conductors in a generating or receiving station on which power is concentrated for distribution.

8 Having sufficient power resources available when needed to reliably serve electricity demands across a range of reasonably foreseeable conditions.

9 Planning reserve margins may vary depending on the LSE.

Form S-1 and Form S-2 Line-by-Line Instructions

Form S-1 Capacity/Energy Requirement Form

Instructions That Apply to Both Tables on This Form (One table is below the other on this form.)

POUs are required to include service to new bundled customers in developing areas where POU and IOU service territories overlap, such as the Merced Irrigation District. For the Modesto Irrigation District, this amount will be listed in the migrating load forecast on Demand Form 1.3.

IOUs are instructed to include all the results of migrating load forecasts as listed in Demand Form 1.3.

All LSEs are to include the effects of customer-owned generation that reduces their procurement obligations. (See instructions for lines 6e, Renewable Distributed Generation [DG], and 7f, Nonrenewable DG on the Form S-2.)

Impacts from committed nondispatchable programs should be reflected on lines 1 and 12 in the Form S-1.[10]

Update any automated formula cell if additional rows are added to list contracts or resources.

10 Nondispatchable programs are not activated using a predetermined threshold condition but allow the customer to make the economic choice of whether to modify its usage in response to ongoing price signals. All LSEs are asked to assume a reasonable level of effectiveness for price-responsive demand-response programs that may or may not correspond with adopted targets. One of these assumptions includes fixed time-of-use tariffs that result in demand reductions.

Line 1: Enter the Forecast Peak-Hour 1-in-2 Demand

All LSEs are required to forecast their total demand during their **noncoincident peak** hour for each year in the forecast period. The *noncoincident peak* is the peak load of an LSE that occurs at a different time than the system peak load. This number, in MW, must include all power needed to serve end-use loads, along with the power needed to deliver supplies to these loads. This amount includes transmission losses, distribution losses, energy needed to serve station loads of utility-controlled resources, and unaccounted for energy. Do not include generator station loads. For these 1-in-2 end-use customer load forecasts, LSEs are required to use their best estimates about future customer loads. These estimates may be greater than or less than the current obligation to serve end-use customers.

Large LSEs such as IOUs should focus on the above activity as it pertains to bundled customers. Large LSEs may have smaller LSEs (such as a CCA) within their service territory. By focusing on peak-hour demand for bundled customers, the occurrence of double-counting is greatly reduced since smaller LSEs shall be submitting their own electricity resource plans.

Line 12: Enter the Forecast Total Energy Demand/Consumption

All LSEs are to forecast total calendar year annual energy consumption, including demand by all retail customers. This total includes transmission losses, distribution losses, energy needed to serve station loads of utility-controlled resources, and unaccounted for energy. This total also includes energy consumption for utility use and by municipal self-supply end-use loads.

Lines 2a Through 2e and 13a Through 13e (Both Tables)

Line 2a and 13a ESP Demand: Existing Customer Contracts

Electric service providers (ESP) are required to identify how their expected demand is divided between new and renewing customers and to indicate the obligations to serve existing customer demand, including contracts that have future start dates.

Line 2b and 13b ESP Demand: New and Renewed Contracts

All ESPs are required to estimate demand from new customers, plus future contract renewals or extensions to serve existing customers. This forecast should be the most likely case as judged by the ESP. The likely share of contract renewals and extensions should closely follow historical patterns, unless such a difference is warranted by a business model, forecast, or announcement that has been disclosed publicly. For ESPs, the sum of values on line 2b and line 2a should equal the number entered on line 1. Likewise, the sum of values on line 13b and line 13a should equal the number entered on line 12.

Lines 2c and 13c: ESP Demand in Pacific Gas and Electric Service Area

S-1 Capacity Procurement Requirement Table and Energy Procurement Requirement Table: Instructions That Apply to Both

The amounts on lines 2c, 2d, and 2e should equal the total shown on line 1. The amounts on lines 13c, 13d, and 13e should equal the total shown on line 12.

S-1, Line 2c

ESPs are required to estimate total energy demand during their noncoincident peak hour.

S-1, Line 13c

ESPs are required to estimate annual energy demand.

Line 2d and 13d ESP Demand in Southern California Edison Service Area

S-1, Line 2d

ESPs are required to estimate total energy demand during their noncoincident peak hour.

S-1, Line 13d

ESPs are required to estimate annual energy demand.

Line 2e and 13e ESP Demand in San Diego Gas and Electric Service Area

S-1, Line 2e

ESPs are required to estimate total energy demand during their noncoincident peak hour.

S-1, Line 13e

ESPs are required to estimate annual energy demand.

Line 3 and 14 Additional Achievable Energy Efficiency (Both Tables)

IOUs, community choice aggregators (CCAs), and POUs are directed to estimate median values (stated as negative numbers) for cost-effective and achievable savings from future programs that are reasonably expected to be developed but are not yet implemented or funded. Enter this value as a negative number.

For large LSEs, this estimate of additional achievable energy efficiency should match the amount shown on Demand Form 3.2. Do not include the effects of energy efficiency programs that are already embedded in the LSE load forecast (Forms S-1, lines 1 and 12). Reported savings should include those that are expected to be achieved in pursuit of goals established by regulatory agencies for which final program design details have not yet been established. Enter the amount of additional achievable energy efficiency (in terms of energy or

capacity, depending on the table) in parenthesis and it will appear as a red, negative number.

Lines 4 and 15 Demand Response/Interruptible Programs (Both Tables)

LSEs are required to enter the demand reduction amounts that are expected to be available from all dispatchable programs that reduce demand or interrupt nonfirm demand.[11] Enter this value as a negative number.

Demand response (DR) encompasses a variety of programs, including traditional direct control (interruptible) programs counted as supply-side resources and price-responsive programs that are accounted for in the demand forecast. Only interruptible load programs subject to LSE or balancing authority dispatch should be counted on line 4. As stated above, impacts from committed nondispatchable programs should be reflected on lines 1 and 12. Price-sensitive DR goals for the IOUs were established in CPUC D.03-06-032 (p. 10). These amounts are 5 percent in 2011 and thereafter.[12]

LSEs serving loads in the California ISO control area are required to use the CPUC-adopted standards for counting DR qualifying capacity. This standard for year-ahead resource adequacy capacity should be applied to projected DR resources throughout the forecast period. Enter the Demand Response/Interruptible Program values (in MW and GWh) in parenthesis on lines 4 and 15. These values will appear as negative numbers and in red for enhanced visibility.

Lines 5 and 16 Adjusted Demand: End-Use Customers (Form)

Line 5 automatically calculates the forecast demand of an LSE's end-use customers. It is the sum of lines 1, 3, and 4. Likewise, line 16 is the sum of lines 12, 14, and 15.

Line 6 Coincidence Adjustment — Capacity Procurement Requirement Table Only

S-1, Line 6

Here an LSE uses an adjustment factor to its noncoincidence peak load to determine its contribution to the system peak load (coincident peak-hour

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11 *Dispatchable programs* are defined here as programs with triggering conditions that the customer does not control and cannot anticipate, such as direct control, interruptible tariffs, or demand bidding programs. Programs with triggering conditions are deemed dispatchable whether they have a day-of or day-ahead trigger, and whether the trigger is economic or physical. All price-response programs that have specified triggering conditions should be treated as dispatchable. These conditions include critical peak pricing and real-time pricing.

12 It was further established in D.04-06-011 that interruptible and emergency programs do not qualify to satisfy these price-responsive demand goals.

demand). Enter this coincidence adjustment factor value as a negative number in MW. This factor is provided to LSEs by the CEC in July. For LSEs under CPUC jurisdiction, this coincidence adjustment promotes methodological and regulatory consistency between the near-term resource adequacy filing requirements and these long-term 10-year resource plans. ESPs and CCAs may use the August coincidence adjustment factors in filings related to resource adequacy compliance. For questions regarding coincidence adjustment, contact Miguel Cerrutti at Miguel.Cerrutti@energy.ca.gov or (916) 237-2510.

Line 7 Coincident Peak-Hour Demand (Capacity Procurement Requirement Table Only)

S-1, Line 7

This line automatically calculates the forecast coincident peak-hour demand of an LSE's end-use customers. It is the sum of lines 5 and 6.

Line 8 Required Planning Reserve Margin (Capacity Procurement Requirement Table Only)

S-1, Line 8

IOUs, CCAs, ESPs, and most POUs are to enter an amount that the LRA-defined planning reserve margin percentage of line 7. Under D.23-06-029, IOUs, CCAs, and ESPs are required to meet a 17 percent month-ahead planning reserve margin. The year-ahead resource adequacy showing summer months (May through September) is due September 30 in the year before (or as specified by the CPUC).[13] By extending this requirement to the entire forecast period, IOUs, CCAs, and ESPs are required to show how much capacity will be needed to reliably serve expected load obligations.

If a POU uses a planning reserve margin other than 15 percent for its resource planning, that value should be used to calculate line 8. For example, the Los Angeles Department of Water and Power (LADWP), Burbank, and Glendale plan and procure for a reserve margin based on single or multiple contingency criteria, and this contingency reserve (in MW) is higher than 15 percent of forecast peak load. Manually change the percentage inside the calculated cell to the planning reserve margin percentage that is applicable. Copy this cell with new reserve margin percentage for all cells in the forecast period.

Line 9 Credit for Imports That Carry Reserves (Capacity Procurement Requirement Table Only)

S-1, Line 9

Some LSEs have firm imports or other contractual resources that carry their own reserves with a specified delivery point. All such resources should be identified

13 Meeting this reserve requirement in 2008 was directed in R.04-04-003.

with a reference in the notes section (or with information on Form S-5). For these resources, LSEs should show a capacity credit on Form S-1, line 9 equal to 5 percent of that firm capacity. For example, a capacity credit includes LSEs with an "all requirements" contract with WAPA or the Bonneville Power Administration. Enter this value as a negative number.

An LSE with a firm import supply does not need to procure additional resources to cover planned and forced outages from a specific generating resource. The combined planned and forced outage rate is assumed to be about 5 percent. An LSE with a 15 percent planning reserve margin will still need to procure enough supply over forecast peak load to cover an operating reserve margin (roughly 6 percent) and cover normal forecast errors (roughly 4 percent).

Lines 10 and 17 Firm Sales Obligations (Both Tables)

List total amounts of firm wholesale electricity supply that the LSE has contracted to deliver to other parties, both within and outside the LSE's service territory. Include line losses, station load, and 15 percent reserves for the share of sales obligations for which reserves are required. Exclude any sales amounts to other entities having a peak load of 200 MW or more — as these entities will submit their own electricity resource plans.

Lines 11 and 18 Firm LSE Procurement Requirement

This line automatically calculates the resource procurement requirement to meet firm demand by adding lines 5, 8, 10, 6, and 9. Line 22 is calculated by adding lines 16 and 17.

Lines 19 to 25

All LSEs are required to calculate and report their actual noncoincident peak loads during Calendar Years 2022 and 2023. This annual peak-hour load for prior years includes all metered deliveries to the LSE's customers, plus firm and nonfirm wholesale supply obligations. By definition, historical peak-hour load is all energy delivered to end-use customers, including energy used by the utility (such as pumped storage), distribution losses, and unaccounted-for energy, and may or may not include transmission losses.

Each LSE is required to show its annual noncoincident peak-hour load. Do not include a planning reserve margin or an operating reserve margin. Do not include an adjustment for coincidence in the balancing authority area. The 10 members of the NCPA Power Pool are asked to report the annual peak loads for each LSE and the coincident peak loads for the pool.

Line 19 Annual Peak Load/Actual Metered Deliveries

Actual metered deliveries are the value commonly reported by many LSEs as their noncoincident annual peak load. For LSEs in the California ISO control area, this value for actual metered deliveries does not include transmission losses.

For this purpose, line 19 amounts for prior-year loads includes long-term firm sales obligations (more than 91-day duration) but should not include short-term sales or spot market sales that may have been negotiated for that hour.

Line 20 Date of Peak Load for Annual Peak Deliveries

Report the date in numeric format, such as 9/8/23 (for September 8, 2023).

Line 21 Hour Ending for Annual Peak Deliveries

Report the hour during which average energy load was higher than any other hour that year. For example, show "16" for the 16th hour of the day that ends at 4 p.m. For summer days, report the hour using Pacific Daylight Savings Time. (This convention matches popular reporting in public media, though hourly metered load reports on Demand Form 1/Supply Form 3 use Pacific Standard Time for the entire year.)

Line 22 Interruptible Load That Was Called on During That Hour (Plus)

Show a positive number for the amount of air conditioner cycling and other interruptible load that was curtailed during the hour when actual metered deliveries were at annual peak.

Line 23 Self-Generation and Distributed Generation Adjustments

Show amounts of peak-hour supplies from customers with self-generation and DG[14] resources. Amounts of DG supply that were available during the peak hour can be estimated for all utilities. Also, count any utility-owned DG that was in use during the peak hour. These local supplies (on line 23) are in addition to metered deliveries from the high-voltage grid, as shown on line 19.

Line 24 Adjustments for Major Outages

Estimate loads that were not served during the peak hour because of significant outages in the distribution system. Corrections or adjustments deemed necessary for a reasonably accurate calculation of annual peak load may also be recorded.

Line 25 Adjusted Annual Peak Load

The sum of lines 19, 22, 23, and 24 is calculated automatically.

14 Distributed generation employs small-scale technologies, such as solar or wind technologies suitable for both residential and commercial applications, to produce electricity close the end users of power.

Form S-2 Capacity/Energy Supply Resources Form

Instructions That Apply to Both Tables on This Form (Tables Are Side by Side on This Form)

The table on the left denotes the amount of dependable capacity expected to be available during the peak hour in MW. The table to the right in orange heading denotes forecasted total resource supply annually in GWh. Unless specifically noted, all instructions below apply to both tables. Where applicable, state the plant name and unit number(s), state the appropriate identifier ID, and then select the fuel type from the drop-down menu to the right. When selecting the fuel type from the drop-down menu, select the option with the most known detail. For example, if the resource is solar PV and more details are known, then select the appropriate type of solar PV. Otherwise, if additional details on the solar PV resource are not known, then only select "solar PV." Then insert the nameplate capacity for existing resources and, if known, for future resources. Use the drop-down menu to select the balancing authority that the existing resource resides in. If known, select the intended balancing authority area for future resources. The following balancing authorities will appear in the drop menu:

- AZPS — Arizona Public Service Company
- BANC — Balancing Authority of Northern California
- BPAT — Bonneville Power Administration Transmission
- CAISO — California Independence System Operator
- CENACE — Centro Nacional de Control de Energía
- GRID — Gridforce Energy Management (NAES)
- GWA — NaturEner Power Watch LLC
- IID — Imperial Irrigation District
- LDWP — Los Angeles Department of Water and Power
- NEVP — Nevada Power
- PACE — PacifiCorp East
- PACW — PacifiCorp West
- PNM — Public Service Company of New Mexico
- SPPC — Sierra Pacific Resources
- SRP — Salt River Project
- TIDC — Turlock Irrigation District
- WALC — Western Area Lower Colorado
- N/A
- Other

Insert latitude and longitude values for existing and, if known, future resources. If the CEC, EIA, or California ISO Resource ID or a combination is known for the resource, then the latitude and longitude for the resource is not required. An error message will result and will instruct you to reinput latitude and longitude information should you input a value that is out of range. For energy storage systems, input the storage duration hours in the corresponding column. A focus should be to include latitude and longitude information for resources that reside outside California.

If forecasted monthly data are available for an existing or future resource or both, then check the Monthly Data box and proceed to input monthly data on the S-2 Addendum Monthly tab. See instructions for S-2 Addendum Monthly in the next section below. At any point throughout the forecast period, if it is known that physical capacity upgrades will be made to an existing or future resource, check the incremental capacity addition box. Then, starting on Excel line 56 in the notes section toward the bottom, list the name of the resource, the year in which the capacity addition is being made, and the capacity upgrade amount that is being added to the existing resource capacity.

Line 1a Total Fossil Fuel Supply (Both Tables)

This section requires forecast data on fossil resources that the LSE owns or controls, with NQC or dependable peak capacity being provided on the Capacity Supply Resources table and annual energy on the Energy Supply Resources table. Line 1a automatically calculates the sum of individual fossil resources listed on subsequent lines.

Line 1b Fossil Unit 1

Beginning on line 1b, submit one row of forecast data for each utility-owned or utility-controlled fossil plant on both tables.

A listing of individual generating units may be provided but is not required. Multiple units may be combined according to utility preference and convention, such as LADWP Haynes 8, 9, and 10 combined cycle.

Use separate lines if one generating unit is expected to retire or be repowered, and if multiple new units are expected to come on-line in different years.

Leave this line blank if the LSE has no fossil resources. Line 12b is needed for the formulas on line 12a to work.

Line 1c Fossil Unit 2

Add lines to Form S-2 as needed for every utility-owned or utility-controlled fossil resource.

Line 1d Fossil Units

List planned fossil resources after listing existing resources. This should be a specifically planned and named resource with an identified location even if permitting or financing is not yet complete. Denote this resource as planned when stating the resource name.

The capacity and energy associated with generic fossil resources should be included on line 13 (generic non-renewable resources), with an entry in the notes section identifying what resources are included on line 13. A generic fossil resource differs from a planned fossil resource in that the LSE is committed to procurement of the latter and the location and type (for example, combined-cycle or peaker) are known. Should the LSE prefer to include one or more generic fossil resources on line 1, it should follow the existing and planned resources, be identified as generic in the plant name, and not be included on line 13.

Line 2a Total Nuclear Supply

This line automatically calculates the sum of nuclear resources listed on subsequent lines.

Line 2b Nuclear Unit 1

Beginning on line 2b, submit one row of forecast data for each nuclear generating unit owned or controlled.

Leave this line blank if the LSE has no nuclear resources. Line 2b is needed for the formulas on line 2a to work.

Line 2c Nuclear Unit 2

Utilities may add lines to list each nuclear generating unit.

Line 3a Total Hydroelectric Supply

This line automatically calculates the sum of line 3b and line 3c.

List individual hydroelectric plants. Add lines as needed.

If individual LSEs use a significantly different definition of rated or dependable capacity, provide an explanation in the Notes section of Form S-2.

Except for Hoover Dam capacity, use 1-in-5 dry year hydrological conditions for those plants where capacity is affected by year-to-year variations in rainfall and snowpack. If historical data are used as a proxy, use generation numbers that were exceeded in 4 of the last 5 years, or 16 of the last 20 years, or some similar series considered appropriate.

Line 3b Hydro Supply From Plants Larger Than 30 MW

Capacity Supply Resources Table, Line 3b

Provide the 1-in-5 dependable capacity of utility-owned and utility-controlled hydroelectric resources that are larger than 30 MW nameplate. This distinction follows Federal Energy Regulatory Commission definitions of large and small hydroelectric facilities.

The United States Bureau of Reclamation (USBR) publishes 24-month forecasts of capacity and energy from hydroelectric plants on the Lower Colorado River. LSEs with Hoover, Davis, and Parker entitlements should use the latest USBR forecast for 2022 and 2023, followed by 1-in-5 dry year estimates for 2024 and beyond.

Energy Supply Resources Table, Line 3b

On line 3b, provide the 1-in-2 estimate of all utility-owned and utility-controlled hydroelectric resources that are larger than 30 MW nameplate.

On lines 3b and 3c, energy production estimates should use median (1-in-2) hydrological conditions, with one exception. LSEs with Hoover, Davis, and Parker entitlements should use the latest USBR forecast for 2024 and 2025, followed by 1-in-2 estimates for 2026 and beyond.

For hydroelectric facilities with reversible turbines, only include estimates of energy production. Energy consumed during pumping operations should be included in demand forecasts.

Line 3c Hydro Supply From Plants 30 MW or Less

Capacity Supply Resources Table, Line 14c

Provide the listing for hydroelectric capacity under 1-in-5 dry year hydrological conditions for all hydroelectric resources that are each equal to or less than 30 MW nameplate. Add lines as needed.

Energy Supply Resources Table, Line 3c

For each hydroelectric capacity, input the hydroelectric energy production under 1-in-2 year hydrological conditions from all LSE-owned or utility-controlled hydro resources equal to or less than 30 MW nameplate. Add lines as needed.

Line 4a Total Utility-Controlled Renewable Supply

This line automatically calculates the sum of individual resources listed below. This section requires forecast data on renewable resources that are under LSE ownership or control (other than small hydro).

Line 4b Renewable Plant 1

List each utility-owned or utility-controlled generating plant using renewable fuel starting on line 4b. Select the fuel type first (for example, geothermal, solar,

wind) followed by the plant or project name. Listings of individual generating units may be provided but are not required. Use separate lines if multiphase projects will come on-line in different years.

List peak dependable or NQC values for each plant, project, or utility-controlled program. An example would be a greater than 1 MW nameplate power plant.

For dual-fuel power plants that can burn natural gas or biomethane (or biogas), list the same plant in both sections for fossil fuel and renewable resources, with the capacity and energy allocated to the two fuel types.

Leave line 4b blank if there are no utility-controlled renewable resources.

Line 4c Renewable Project 2

Add lines as needed for each renewable energy resource or project under utility ownership or control.

Line 4d Renewable Project N

List contracts for planned renewable projects last. This should be a specific, named renewable project with an identified location(s), even if permitting or financing are not yet completed. Denote in the name of the planned renewable project name that this is a contract.

Should one or more generic utility-controlled renewable resources be included on line 4, it should follow the existing and planned resources, be identified as generic in the plant name, and not be included on line 12.

Line 5a Total Qualifying Facility Contract Supply

Both, Line 5a

This line automatically calculates the sum of individual resources listed below. This section refers to supply contracts for capacity from qualifying facilities (QFs), as defined by the Public Utilities Regulatory Policy Act (PURPA).

For consistency with supply forms submitted in prior years, IOUs may continue to include in the QF categories listed below those generating facilities for which the PURPA purchase requirement has been terminated, and the facility continues as a supply resource according to new standard offer PPA, newly negotiated contracts, or CPUC-approved settlement agreements.

Capacity Supply Resources Table, Line 5a

IOUs are required to indicate the NQC expected from QFs through 2033. As existing contracts expire, many of these generating resources will likely remain available to IOUs under new contract terms.

Energy Supply Resources, Line 5a

IOUs are required to indicate the annual energy expected from QFs through 2033. As existing contracts expire, many of these generating resources will likely remain available to IOUs under new contract terms.

Line 5b Biofuels

IOUs are required to provide expected NQC and annual energy supply from QF resources powered by biofuels. This is a generic term including landfill gas, forest products, almond shells, dairy waste, and so forth.

Line 5c Geothermal

Provide the expected NQC of, and annual energy from, geothermal QF resources.

Line 5d Small Hydro

Capacity Supply Resources Table, Line 5d

Provide the expected dependable capacity of and annual energy from small hydroelectric QF resources, meaning only those plants rated 30 MW nameplate or less. Provide a derated qualifying capacity[15] total showing what can be expected in a 1-in-5 dry year.

Energy Supply Resources Table, Line 5d

Provide the expected annual energy from small hydroelectric QF resources, meaning only those plants rated 30 MW nameplate or less. Provide an estimate of energy expected in the current year and for 1-in-2 median hydrological conditions in future years.

Line 5e Solar

Provide the total supply from solar QF resources. Include only the output of solar QF facilities injected into distribution or transmission systems that will serve annual IOU peak loads. Do not include solar generation that only reduces end-use demand.

Line 5f Wind

Provide the total supply from existing wind QF resources. New wind resources are not expected to have QF contracts.

Line 5g Natural Gas

Provide the total supply from all QF resources powered by natural gas.

15 The effective capacity that can be expected from this resource as determined by methods prescribed by the California Public Utilities Commission.

Line 5h Other

Provide a total for all other nonrenewable generating resources under QF contracts, if any. This total may include resources that had QF eligibility according to PURPA but now supply capacity and energy under new standard-offer PPAs, newly negotiated contracts, or CPUC-approved settlement agreements.

Line 6a Total Renewable Contract Supply

This line automatically calculates the sum of contractual renewable supply resources listed below it. Contracts with durations longer than three consecutive months should be named and listed on separate lines beginning with line 18c. Renewable contracts that provide less than 1 MW of supply may be aggregated by fuel type.

Line 6b Renewable DG Supply

LSEs are required to show amounts of existing and expected renewable DG supply that is surplus to customer consumption during the peak hour. Do not include DG output that is produced and consumed on the customer side of the meter. Include only amounts of DG injections that would otherwise be supplied by the LSE.

Show only renewable DG amounts that include procurement of renewable attributes from the end-use customer. If the customer retains ownership of renewable attributes, the DG supply should be listed on line 7f.

DG supply is listed here with other renewable contractual supplies as a matter of convenience. LSEs may use other lines for specifically named renewable DG programs or projects.

Line 6c Renewable Contract 1

List individual renewable energy contracts, selecting the fuel type (geothermal, solar, wind, and so forth), then the contract name. It may be useful to add the supplier's name, if different. The contract name (or acronym) entered will automatically populate a matching listing on Form S-5.

Contracts that individually provide less than 1 MW may be aggregated. These contracts do not require a corresponding entry on Form S-5.

Line 6d Renewable Contract 2

Select the fuel type and state the contract name. Add lines as needed.

Line 6e Renewable Contract 3

List any planned renewable contracts last. Select the fuel type, then state that this is a planned renewable contract with its name. This should be a specific,

named renewable project with an identified location or supplier, even if permitting or financing are not yet completed.

Should the LSE prefer to include one or more generic renewable contracts on line 6, it should follow the existing and planned renewable contracts, be identified as generic in the contract name, and not be included on line 12.

Some renewable energy supply contracts will expire during the forecast period. If the contract is renewed or renegotiated with the same party, it is appropriate to list specific capacity values on the same line. Enter the expiration date of the contract in the contract expiration date column of Form S-5. Indicate in the notes column that renewal or renegotiation is expected.

Line 7a Total Other Bilateral Contract Supply

This line automatically calculates the sum of supply resources listed below it.

Line 7b Nonrenewable DG Supply

Provide total amounts of existing and expected nonrenewable DG supply that is surplus to the amount the DG customer consumes. Include only amounts of DG output injected into the distribution system for other end-use customers, amounts that would otherwise be supplied by the LSE.

Line 7c Other Bilateral Contract 1

Use line 7c to list bilateral contracts and PPAs with durations longer than three consecutive months. List supplies that are not reported in other sections. Each bilateral contract should be named and listed on a separate line. It may be useful to add the supplier's name, if different, in parentheses.

The contract name (or acronym) entered on Form S-2 will automatically populate a matching listing on Form S-5. If this is a capacity-only contract for resource adequacy, enter zero for the energy amounts on the energy supply resources table. If this is a contract that does not provide firm capacity during the peak hour, enter the resource supply name on the capacity supply resources table and enter zero for the capacity amounts under the years covered by the contract.

Contracts that provide less than 1 MW may be aggregated. These contracts do not require a corresponding Form S-5.

Line 7d Other Bilateral Contract 2

Capacity Supply Resources Table, Line 7d

Enter the contract name and the appropriate capacity under the years covered by the contract.

Energy Supply Resources Table, Line 7d

Enter the contract name and the appropriate energy amounts under the years covered by the contract.

Line 7e Other Bilateral Contract 3

Add lines as needed.

List planned contracts for planned resources last. Denote that this is a planned contract when listing the name. Select the projected fuel type. For new or repowered generating facilities, this should be a specific, named project with an identified location and supplier, even if permitting or financing is not yet completed.

Should the LSE prefer to include one or more generic bilateral contracts for energy or capacity from nonrenewable resources on line 7, it should follow the existing and planned contracts, be identified as generic in the contract name, and not be included on line 13.

Many bilateral supply contracts will expire during the forecast period. If the LSE expects to renew or renegotiate a particular contract with the same party, it is appropriate to continue listing specific capacity values on the same line. Enter the expiration date of the contract in the contract expiration date column of Form S-5, with the Notes column indicating that the LSE expects to renew or renegotiate the contract upon expiration.

Line 7g Running Total of Unbundled Renewable Energy Certificates

Starting on line 7h in the energy table only, list the resulting number of Renewable Energy Certificates (also known as renewable energy credits or RECs) available at the end of the year. Insert this amount for the applicable year. The units should be in GWh. During a calendar year, numbers of RECs may be expended or sold or purchased. Please add this net number to the previous year's total to get the number of RECs available at the end of the year. Input the running number for each year in the forecast period for which the running total number of RECs is known.

Unbundled RECs are certificates without any associative power provided with it. These certificates are stand-alone entities. These RECs will provide insight to how resources are planned for and dispatched in meeting reliability and renewable portfolio standards.

Line 8 Short-Term and Spot Market Purchases (and Sales)

Both, Line 8

Forecast values for short-term and spot market purchases (and sales) on both tables should represent an expected reliance on such resources, and not merely entered to "eliminate" open positions. Where integrated resource planning or reliability studies have resulted in a "preferred scenario" in which specific amounts (MW) of generation capacity using a specified technology or fuel type are procured (for example, a gas-fired combined-cycle to replace an expiring coal contract), but the new plant is otherwise unidentified, the LSE may include this

as a generic resource with capacity and energy included in line 12 or 13 (or enter it on line 1, 4, 6, or 7, as appropriate). In general, the LSE is encouraged to leave the position open, indicating that there is uncertainty about which resource(s) will fill it.

If there are contracts shorter than 91 days that contribute to meeting peak-load requirements, these contracts can be aggregated and placed in this category. For example, short-term and day-ahead contracts that are acquired to help meet peak load may be aggregated and placed here (for both energy and capacity tables).

Exclude sale amounts to other entities with peak loads of 200 MW or more as these entities will submit their own electricity resource plans.

Capacity Supply Resources Table, Line 8

List capacity the LSE expects to procure during the forecast period through short-term or spot market purchases. Short-term purchases are defined here to include all procurement of more than two days' duration and fewer than 92 consecutive days. Spot market purchases are defined here to include all procurement that are two days or fewer in duration.

For 2022 and 2023, include capacity procurement amounts to serve annual peak loads that were open positions one month (or more) prior to the peak month in each year.

Energy Supply Resources Table, Line 8

Net surplus (or need) is expected to equal zero GWh for 2022 and 2023. That is, actual energy procurement should equal the energy requirement for each prior year. To reach that result, LSEs should enter positive or negative values for short-term and spot-market purchases in 2022 and 2023. Negative values represent sales were greater than purchases in this broad category. If the LSE purchased renewable energy and sold null power, the sales should be included in line 8 on the energy supply resources table even if the sales agreement extended beyond 92 days.

Line 9 Total: Existing and Planned Supply

The sum on line 9 is calculated automatically from existing and planned electricity supply resources entered in earlier sections: line 1a (fossil fuel dependable capacity), 2a (nuclear), 3a (hydroelectric), 4a (utility-controlled renewables), 5a (QF capacity), 6a (renewable energy contracts), 7a (other bilateral contracts), and 8 (short-term and spot-market purchases).

Line 10 Firm LSE Procurement Requirement

The sum on line 10 from the capacity supply resources table is automatically repeated from line 11 in the capacity procurement requirement table. The sum

on line 10 from the energy supply resources table is automatically repeated from line 22 in the energy procurement requirement table.

Line 11 Net Surplus (or Need)

Both, Line 11

The difference between line 9 and line 10 is calculated automatically. A negative number indicates a net-open position and will appear in red. A positive number on line 11 indicates a net-surplus position.

Capacity Supply Resources Table, Line 11

Capacity values shown for 2020 and 2021 represent actual values.

Energy Supply Resources Table, Line 11

Line 11 is expected to equal zero GWh for 2022 and 2023, as actual energy procurement would equal the firm LSE procurement requirement in prior years. (In this context, the firm LSE procurement requirement expos would include nonfirm day-ahead energy sales and other short-term contractual agreements.) Adjustments to line 8 may be needed for the result in line 11 to equal zero GWh in 2022 and 2023.

Line 12 Generic Renewable Supply

Enter the aggregate capacity (dependable capacity or NQC) and energy that is expected from any renewable resources that have yet to be procured and whose exact location is unknown, but whose likely addition to the LSE's portfolio is, for example, indicated by recent resource planning.

The capacity value for generic renewable resources on the capacity supply resources table should correlate with the forecast of generic renewable energy procurement shown on the energy supply resources table. Both entries should be explained in the notes section.

The capacity and energy of generic resources included in lines 4 or 6 are not included here.

Approved programs designed to procure, for example, 25 MW of small-scale wholesale solar photovoltaic under a feed-in tariff, but where not all of the capacity has been identified or procured, should be treated as planned resources.

Line 13 Generic Nonrenewable Supply

Enter the capacity (dependable or NQC) and energy the LSE reasonably expects from any nonrenewable resources that have yet to be procured and whose exact location is unknown, but whose likely addition to the LSE's portfolio is, for example, indicated by recent resource planning. As on line 12, the capacity value for on the capacity supply resources table should correlate with the forecast of

energy shown on the energy supply resources table. Both entries should be explained in the Notes section.

The capacity and energy of generic resources included on lines 12 or 19 should not be included here.

Line 14 Specified Planning Reserve Margin (Capacity Supply Resources Table Only)

Every LSE serving load in the California ISO has adopted a year-ahead planning reserve margin stated as a percentage of forecasted peak loads. On line 14, state the percentage (such as 15 percent) if the LSE has adopted a percentage number as its planning reserve margin. This is the number that was used to calculate the actual amount of capacity on line 8 (from S-1 capacity procurement requirement table) and does not include a reduction for coincidence. This cell does not influence the value in any other cell. For most LSEs, this number will be a constant for the planning horizon. If a different percentage is used, the calculating cell can be adjusted as needed.

If the LSE's planning reserve margin is a MW value based on a contingency reliability criteria (such as N minus 1), enter this number. Burbank, Glendale, and LADWP in the LADWP Balancing Authority Area have adopted a contingency-based planning reserve margin that would still provide for adequate operating reserves (under 1-in-10 load probabilities), even with the loss of the largest generation or import (transmission) resource.

S-2A Addendum Monthly

If the Monthly Data box was checked on the S-2 Supply form for a particular resource, then this form should be filled out. Identify the checked resource on the Addendum with the resource name and any or all of the pertinent ID codes. Proceed to fill out the forecasted contracted GWh for the resource. This can be contracted energy amounts or forecasted energy an LSE can reasonably expect to receive from this resource. List the same resource name and ID information on the next line down and then proceed to fill in NQC MW capacity data for this resource. List capacity that can be reasonably expected from the resource.

Use the following guidelines when filling in data for both capacity and energy: If this is a future resource and a contract has not yet been established, then list the forecasted contract GWh that is expected in accordance with the resource plan. If there is no contract in place and there is no expectation in accordance with the resource plan, then leave months blank. Fill in data for as much of the forecasted years and months as the data allow. If there are no data available, then leave the year-month cell blank. Continue to fill in data if the data do not change from month to month. If it is known that a resource is will not provide power or

capacity or both, then insert zero. Insert rows going down as needed for additional resources.

CHAPTER 3:
Form S-3: 2023 Small Publicly Owned Utility Hourly Loads

Scope and Purpose of Regulatory Oversight

Prior requests to POUs elicited narrative information about their strategies and plans to remain resource adequate. From these filings, the CEC reported on elements that have become standard and explicit, along with elements that are significantly diverse or implicit.

All POUs, without regard to the control areas in which they serve load, are directed by Public Utilities Code section 9620(a) to "… prudently plan for and procure resources that are adequate to meet its planning reserve margin and peak demand and operating reserves, sufficient to provide reliable electric service to its customers." This statute recognizes that locally managed public electric utilities have some variability and discretion about what constitutes reliable and affordable electric service for their local customers. This relatively autonomous responsibility includes decisions about what planning strategies and procurement options are appropriate for implementing a desired level of customer service.

Small POUs (those with annual peak loads less than or equal to 200 MW in either 2022 or 2023) are required to report hourly historical loads for the previous calendar year according to Section 1346 on Electricity Resource Adequacy (California Code Regulations, Title 20, Division 2, Chapter 3, Article 2). Form S-3 is a simplified version of Demand Form 1.6a. By filing Form S-3, small POUs are not required to file any of the demand forms.

Large LSEs (with annual peak loads greater than 200 MW) are required to provide 10-year resource plans covering 2024 through 2033. The 10-year resource plans from large POUs are compatible and comparable in all respects with the year-ahead resource adequacy filings from small POUs. In effect, the first-year projections can be summarized to provide a statewide snapshot of all POU loads and resources for 2024, along with some long-term assessments of supply trends for the large POUs.

Actual hourly demand (average energy consumption over the hour) should be reported in MWh. Begin with the hour that ended at 1:00 a.m. on January 1, 2023. The time basis should be Pacific Standard Time throughout the year. Show the load measured at the control area take-out point. WAPA should report hourly load for each LSE separately (Trinity Public Utility District, Lassen Municipal Utility District, and others) for its total requirements in the California ISO control area.

Demand Form 1.6a requires larger distribution utilities to report distribution system losses, historical outages, and demand response/interruptible resources that were called on in each hour. Small POUs are not asked to report these data categories with due consideration for the size of loads, utility staffing levels, and the relative importance on system assessments and reliability planning.

More specific questions about resource adequacy may be directed to Robert Kennedy at Robert.Kennedy@energy.ca.gov or (916) 891-8548.

CHAPTER 4:
Form S-5: Bilateral Contracts

Scope and Purpose

The information on Form S-5 is needed to assess the following characteristics of statewide supply and demand balances:

- Does the contract encumber in-state capacity or is it likely to do so?
- Does the contract encumber out-of-state capacity for service to California loads?
- Is the supplier in control of a physical resource or likely to be?
- Under what circumstances, if any, may the energy or capacity associated with the contract be unavailable during peak hours?
- Under what general terms does the contract provide qualifying capacity for LSEs serving loads within the California ISO control area or provide dependable capacity for LSEs serving loads in other control areas?

Relationships With Other Forms

Form S-5 uses information from Form S-2, lines 6b through 6d and 7b through 7e, as the starting point.

Information Format Requirements

LSEs with existing bilateral contracts or PPAs are required to submit applicable information on Form S-5 unless they are exempt as shown in **Table 1**. Some of the required information is categorical or descriptive, and some is numeric. Information is needed for each bilateral contract supplier (or seller in a PPA) that provides capacity in amounts greater than 1 MW.

LSEs requesting confidentiality for certain information must be sure the specific data cells or information categories are clearly marked and identified with yellow highlight. An ESP may have many procurement contracts with the same supplier; these different contracts may specify a small MW share of output from the same generating unit (or firm supply from unspecified generation). ESPs may aggregate such contracts for reporting on Form S-5 even if delivery periods and specific terms will vary among the contracts.

Use "Not Specified," "None," or "Not Applicable (N/A)," as appropriate to the contract terms.

Contracts Covered and Not Covered by This Requirement

LSEs are required to provide a few standard types of information regarding existing bilateral contracts or PPAs that have been signed with suppliers of capacity and/or energy. A current contract or PPA is one that commenced on January 1, 2024, or by the date of resource plan submittal to the CEC. This reporting requirement includes signed contracts for supplies that are not yet being delivered or from generating facilities that are not yet on-line. This reporting requirement includes each contract and agreement in effect for at least 92 consecutive days. Do not include short-term contracts with durations of 91 days or fewer. Aggregations of supply contracts that individually are less than 1 MW are acceptable.

For every bilateral contract that specifies a supply to the LSE of energy or capacity (1.0 MW or larger) and lasting more than 91 days, LSEs must provide the information described below as a line item on Form S-5. There are five exceptions to this requirement:

1. QF contracts, which may be aggregated by fuel type
2. Aggregations of supply contracts, each of which is less than 1 MW
3. Contracts that expired prior to January 1, 2022
4. Supplemental or related contracts for the shaping and/or firming of wholesale energy delivered to the LSE
5. Contracts for the purchase of tradable RECs without energy

Line-by-Line Instructions

Lines 6b Through 6d and 7b Through 7e

Use information from the corresponding lines in Form S-2 to fill in lines 6b through 6d and lines 7b to 7e in the S-5 form. The contract name (as entered on Form S-2) will automatically populate to Form S-5. For all other listed contractual supplies, enter the Form S-2 line number and contract name or add an appropriate formula to enter the data.

Contract Name

Provide the name given to the bilateral contract or PPA as shown on Form S-2.

On the Form S-5, select the fuel type information from the drop-down menu in Column C.

For hydroelectric resources under contract that are aggregated with total hydroelectric supply on line 3a of Form S-2, enter the contract name on a new line. These resources include Hoover entitlements, Parker-Davis, and shares of the federal Central Valley Project hydroelectric generation that are marketed by WAPA. If this supply is entirely from hydroelectric plants larger than 30 MW, enter "3b" in Column A. If this supply is entirely from hydroelectric plants 30 MW or less, enter "3c" in Column A. Otherwise, leave Column A blank for this line on Form S-5.

Supplier/Seller

Name the contracted supplier, producer, or seller of capacity or energy or both, which may be identical to the contract name. The supplier or seller's name is usually the counterparty name on the contract or agreement. If the name of the supplier/seller is confidential, the contract name should be different as it appears on the S-2 and S-5 forms to promote public disclosure and cross-referencing among these forms.

If there is an intermediate party that may have had a role in development or procurement, such as the Southern California Public Power Authority, list the generator name as the actual supplier of capacity or energy.

Unit Contingent Contract

LSEs are asked to distinguish between supplies from specifically named generating units ("unit contingent" or "unit contingent with firming"), distinguish those supplies that are from a portfolio of generation resources, or provide system power.

If delivery is contingent upon the availability of a specific unit or units, enter "unit contingent" and provide information regarding the unit(s) in Columns E through I.

If the contract calls for deliveries from a particular unit or units, when available, and requires the seller to provide backup power from unspecified sources, enter "unit contingent with firming" and provide information regarding the unit(s) in Columns E through I. This designation would be appropriate for contracts that identify one or more specific variable energy resources (for example, wind) but require the seller to provide a fixed amount of energy in each hour.

In some contracts, the portfolio of supply resources is known only generally without an obligation to generate from specific power plants, in which case

"portfolio" should be entered. This entry is intended to reflect purchases from a supplier who owns or controls a larger set of generating resources, such as those of California Air Resources Board designated "asset-controlling suppliers" (Bonneville Power Authority [BPA], PowerEx, Tacoma Power), WAPA's Central Valley Project resources, and so forth. Contracts providing energy from a small (two to four) set of specific resources should be treated as unit-contingent, with unit-specific information being provided in Columns E through I.

If the contract does not specify or limit the generating sources to be used, enter "system power."

Generating Unit(s) Specified

If the contract/PPA provides for energy from a specific generation resource or resources, name all power plants or generating units or both identified in the contract. If the supplier will provide energy from a small, defined set of resources, identify each resource, using the notes column if necessary. Where "portfolio" has been entered in the unit-contingent contract column, a description should be entered here, such as "BPA portfolio" or "CVP generation" (for a share of the Central Valley Project hydro generation). Where the contract is for system power, enter "system power," "none," "N/A," or leave the field empty.

Supply Resource(s) Delivery Zone/Point

For contracts that specify the generation resource(s) or portfolio from which energy is to be provided, indicate the control area (or interchange) and, if specified, the California ISO transmission zone or substation or both to which the energy is to be delivered. If there are multiple delivery points, indicate whether buyer or seller has the option.

For contracts for system power, indicate the control area or interchange (and, if specified, California ISO transmission zone or substation or both) at which the buyer takes delivery.

Contract Start Date

State the initial date of availability or delivery for the capacity or energy product(s) or both being purchased. For products from specified generation resources that are under construction or planned, uncertainty may be stressed by indicating that the date is an estimate, for example, "12/31/23 estimated commercial operation date."

Contract Expiration Date

Provide the date of final availability or delivery of the product(s) being purchased. If this date is contingent upon future actions by parties, market conditions, or other future events before the inception of the contract, this should be explained here. An example of a suitable explanation is "Twenty years

from commercial operation date" or any additional context in the Notes column. Information regarding the ability of one party to unilaterally terminate the contract after inception for reasons other than nonperformance should be entered under termination and extension rights column.

Capacity Under Contract (MW)

For each contract or agreement, enter the nameplate or rated capacity under contract. If the capacity under contract changes from one year to another, for example, due to planned phased expansion of the specified generating resource(s), provide the appropriate dates and quantities here or in the Notes column. If the capacity available under the contract varies across the year, this variation should be described in the Notes column.

Contract/Agreement Products

Indicate the commodity and service products for which delivery is being contracted. Examples include as-available energy, tolling agreement, seasonal energy exchange, resource adequacy contract ("resource adequacy only"), and so on.

Contract Type

Indicate the contract type that will yield insight as to how the contract will operate. Some contract type examples are Resource Adequacy, PPAs, or Reliability Must Run.

New Transmission Needed

This check box should be checked if it is anticipated that transmission upgrades or new transmission lines or both will be required to support this contract.

Notes (1) and (2)

Include any clarifying or explanatory statements required or considered appropriate. For example, if power under is received in this contract under firmed and shaped conditions, please note it here.

CHAPTER 5:
Form T-1: Transmission Information

Scope and Purpose

New transmission facilities and upgrades to existing facilities are required throughout California for the state to achieve its decarbonization goals. Delays in transmission projects could also jeopardize or slow compliance with renewable energy standards. The CPUC collects transmission information from Transmission owners (TOs) under its jurisdiction through the Transmission Project Review Process established in Resolution E-5252. Form T-1 is modeled after the data requirements for the Transmission Project Review Process and the San Diego Gas & Electric workbook. The information on Form T-1 will allow the state to track transmission projects throughout California, not just the projects under the jurisdiction of the CPUC.

Relationship With Supply Forms

Form T-1 does not use information provided in Supply Forms S1 to S5. Form S5 does require a simple yes or no if transmission upgrades are required to support a contract. Form T-1 would contain detailed information on these required transmission upgrades.

Information Format Requirements

Transmission owners (TOs) with facilities of 100 kilovolts (kV) and greater or with facilities that meet the North American Electric Reliability Corporation (NERC) for Bulk Electric System are required to file Form T-1.

- Jointly owned projects: For projects owned by more than one transmission owner or utility, project details in Form T-1 need only be filed by the primary or lead owner, in which case other participants in the project would include the name of the project on Form T-1 and a reference to the location of the project details in the notes field.
- Each row should refer to one specific transmission project. Each project should be equal to or greater than 100 kV or is part of the Bulk Electric System as defined by NERC and can include transmission lines, transformers, circuit breakers, or other transmission components.
- Details about the specific data format and type for each column are provided in the workbook in a separate tab and as an attachment to this document.
- Where a column does not apply to a specific transmission project, please use NA rather than leave the cell blank.

- Where more text or detail is required for a specific transmission project than reasonably fits in the workbook format, additional detail should be attached in a Word or PDF format with clear reference to the project name and row number.
- TOs under the CPUC's jurisdiction can submit their latest workbook submitted in the Transmission Project Review Process though they may be requested to submit updates about specific transmission projects later in the IEPR process.
- The Transmission Project Review process is new and likely to evolve over time. CPUC jurisdictional TOs can submit their most recent Transmission Project Review process workbook even if it is not the same as the current form T-1.

Information Submittal Instructions

The information requested on each transmission project is organized into several subject areas. The specifics are located in Table 1 tab of the Form T-1 Transmission Form.

Project Description

The project description section includes information generally on what the project is, where it is located, and why it is needed.

- Description of project including types of upgrades, expected equipment ratings
- Location — latitude and longitude and city and county
- What specific problem the project is designed to address such as generator interconnection or compliance with specific reliability standards

TO, Utility, California ISO, or FERC Approval

This section identifies the status of a project in relation to internal utility approvals and regulator nonenvironmental approval.

Environmental Permitting

Identifies lead agencies for National Environmental Policy Act permitting and California Environmental Quality Act permitting. If CPUC permits are required, identify the type of approval required (Advice Letter, Permit to Construct, Certificate of Public Convenience and Necessity) and approval date.

Cost Information

Detailed project cost information. The forms replicate reporting requirements for CPUC jurisdictional TOs; much of the cost information will not apply to other TOs.

ACRONYMS

ACRONYM	DEFINITION
BPA	Bonneville Power Administration
CEC	California Energy Commission
California ISO	California Independent System Operator
CCA	Community choice aggregator
CCR	California Code of Regulations
CPUC	California Public Utilities Commission
DG	Distributed generation
DR	Demand response
DSM	Demand-side management
GWh	Gigawatt-hour
IEPR	Integrated Energy Policy Report
IOU	Investor-owned utility
LADWP	Los Angeles Department of Water and Power
LRA	Local Regulatory Authority
LSE	Load-serving entity
MW	Megawatt
NCPA	Northern California Power Agency
NQC	Net qualifying capacity
PG&E	Pacific Gas and Electric Company
PPAs	Power purchase agreements
POU	Publicly owned utility/Publicly owned electric utility
PURPA	Public Utilities Regulatory Policy Act
QF	Qualifying facility
REC	Renewable Energy Certificates
SCE	Southern California Edison Company
SDG&E	San Diego Gas & Electric
TO	Transmission Owner
USBR	United States Bureau of Reclamation
WAPA	Western Area Power Administration

APPENDIX A:
Confidentiality Applications

Information submitted to the CEC can be deemed confidential without the need for a new application under CCR, Title 20, Sections 2505(a)(1)(G) and 2505(a)(4) if you file a certification under penalty of perjury that the new information is substantially similar to the previously granted confidentiality.

Repeated Applications for Confidentiality

Your current application will serve as your certification and the designation of confidentiality will be under the same terms as the prior designation. The information will remain confidential under the same terms as the prior designation for the same or comparable period identified by the applicant in the application.

How to Request Confidentiality

The CEC executive director has the responsibility for determining what information submitted with an application for confidentiality will be deemed confidential. Parties who seek such a designation for data they submit must make a separate, written request that identifies the specific information and provides a discussion of why the information should be protected from release, the length of time such protection is sought, and a determination of whether the information can be released in aggregated form. The term of confidentiality is granted on a case-by-case basis.

Certain categories of data provided to the CEC, when submitted with a request for confidentiality, will be automatically designated as confidential and do not require an application. The types of data that are eligible and the process for obtaining this confidential designation are specified in CCR, Title 20, Section 2505(a)(5). The CEC has its own regulations distinct from those governing the CPUC. CPUC determinations on confidentiality are not applicable to data submitted to the CEC.

Parties should be aware that some confidential data may be disclosed after aggregation according to CCR, Title 20, Section 2507(d) or (e). Both historical and forecast energy sales data may be disclosed if reported at the following levels:

- For individual LSEs, data may be aggregated at the statewide level by major customer sector.
- For the sum of all LSEs, data may be aggregated at the service area, planning area, or statewide levels by major customer sector.

- For the total sales of the sum of all electric retailers, data may be aggregated at the county level by major generator, utility, and ESP groups as these groups are defined by the U.S. Census Bureau in its North American Industry Classification System Department of Water Resources tables.

Data not included in these categories, but believed to be confidential by the filer, should be submitted when due along with an application for confidential designation so the CEC executive director can make a determination. To do this, follow the "General Instructions" at the beginning of this document. Due dates are listed there.

What a New or Repeated Confidentiality Application Must Have

Applications for confidentiality and the confidential documents must be uploaded directly to Dockets through the CEC's e-filing system. Paper copies or CDs do not need to be submitted. Links to the e-filing system are provided on each proceeding's web page under "Submit e-filing." Registration is necessary the first time documents are uploaded. Once registration is complete, submit a confidential filing by selecting "Quick Actions" from the Dashboard then selecting "Submit Confidential e-filing" from the drop-down tab. **Upload the application first and then any confidential materials**. The application will then be reviewed by the executive director in consultation with the chief counsel. **Table A-1** shows three *IEPR* subdockets that are applicable to plans and demand forecasts.

Table A-1 ***2024 IEPR*** **Subdockets**

24-IEPR-01	General/Scope
24-IEPR-02	Electricity Resource Plans
24-IEPR-03	Electricity Demand Forecast

Source: https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2024-integrated-energy-policy-report-update.

A signed "penalty of perjury certification" must be included in the application. Suggested language is as follows:

> I certify under penalty of perjury that the information contained in this application for confidential designation is true, correct, and complete to the best of my knowledge. I also certify that I am authorized to make the application and certification on behalf of (ABC Utility or Corporation).

For e-filings containing a signature, including submissions into electronic databases requiring a signature as attestation of information, the signature may

be in electronic form and represented as a scanned signature graphic, or "Original Signed By," an "/S/" or similar notation followed by a typewritten name.

What a New or Repeated Confidentiality Application Must Include, in General

A complete application for confidentiality contains:

- Identification of the information being submitted, including docket number, title, date, and size (for example, pages, sheets, megabytes).
- Description of the data or information for which confidentiality is being requested (for example, particular electricity supply contract categories for particular years).
- On forms submitted with prospectively confidential data, identification of specific cells using yellow fills that are consistent with the confidentiality application.
- A clear description of the period for which confidentiality is being sought for each information category (for example, until December 31, 2024).
- An appropriate justification for each confidential data category request, including applicable provisions of the California Public Records Act (Government Code Section 6250 et seq.) or other laws.
- A statement attesting that a) the specific records to be withheld from public disclosure are exempt under provisions of the Government Code, or b) the public interest in nondisclosure of these particular facts clearly outweighs the public interest in disclosure.

What Happens If a New or Repeated Application Is Incomplete?

Applications that have been docketed will be reviewed by CEC staff within 30 calendar days of receipt for clarity, completeness, content, and context. If the application is incomplete or ambiguous in one or more respects, or if the data are incomplete or questionable, staff will contact the filer to resolve uncertainties or obtain additional information.

Applications deemed incomplete may result in a delay in processing until the deficiency is corrected. The filer will be notified by staff about deficient attributes and has 14 calendar days to submit an amended application to the CEC.

Determinations and Additional Information for New Applications

The CEC executive director signs confidentiality determination letters in response to new applications for confidentiality. The applicant has 14 calendar days to appeal the decision.

An applicant can request confidentiality at any time, but once information is publicly released, confidentiality cannot be granted. Information that is public elsewhere cannot be granted confidentiality. The CEC strongly encourages filers to provide data and confidentiality requests concurrently.

More specific questions about confidentiality may be directed to Jared Babula at Jared.Babula@energy.ca.gov or (916) 879-3028.

APPENDIX B:
Data Collection Public Purposes

Definitions

For existing and planned electricity supply resources, all LSEs in California must use reasonably consistent and compatible terms and counting conventions. This consistency is needed to simplify a general evaluation of statewide supply adequacy. This evaluation includes some limited assessments of coincident peak supply needs within specific control areas, primarily those of the California ISO.

Existing DSM programs that are not dispatchable are incorporated into the demand forecast and are not considered supply resources.

Existing resources are generating resources that are on-line and available to the LSE, including all contracts/PPAs.

Under-construction resources under contract to be reported are those for which a contract/PPA has been signed, all regulatory permits and approvals have been obtained, construction has begun, and sufficient financing has been obtained by the developer to enable completion.

Utility-controlled resources are those that an IOU or POU can dispatch or schedule and then integrate in real time. This category includes all forms of ownership and joint powers authority. Resource data about facilities controlled by one LSE but owned by another, such as an irrigation district, should be reported by the controlling utility. LSEs have the reporting responsibility for generating resources owned by non-LSE irrigation and water districts. For example, PG&E should include Placer County Water Agency, Nevada Irrigation District, and other irrigation districts and water agencies with generation that is dispatched or integrated by PG&E.

Planned resources are those that an LSE deems highly likely additions to its portfolio but about which there is uncertainty due to regulatory, financial, or legislative risks. For IOUs, planned resources are those specific facilities and signed PPAs or facility construction contracts that have not yet been formally approved by the CPUC or have been approved but face one or more regulatory or legal hurdles that have delayed the start of construction or brought it to a halt. For other LSEs, planned resources include signed agreements, approved contracts, and supplies for which the LSE has a reasonable expectation of commitment. Reasonable expectation would include the name, fuel type, and location for planned utility-owned resources, and other attributes to be reported on Form S-5 for planned contractual resources.

Generic resources include generating resources needed to serve forecast demand, including utility-owned facilities and PPAs that are not specifically identified at this time by resource type or location. The capacity and energy associated with such resources should be included on lines 12 and 13 of
Form S-2 and discussed in the notes section.

A more complete set of definitions may be found in the CEC's regulations governing data collection for the IEPR (CCR, Title 20, Section 1301 et seq. and 1340 et seq.), regulations implementing the CEC's complaint and investigation process (CCR, Title 20, Section 1230 et seq.), and regulations governing the disclosure of CEC records (CCR, Title 20, Section 2501 et seq.). The definitions are found in Chapter 3, Article 1, Section 1302.

General Purposes, Assumptions, and Considerations

These forms and instructions provide the CEC with a better understanding of LSE planning assumptions and resource adequacy commitments. From this information, the CEC will assess current conditions in electric generation system infrastructure and identify major statewide trends affecting electricity supply and reliability. The CEC may use the supply forms for reliability assessments, production cost modeling, capacity expansion, and so forth.

The CEC has regulatory authority to require long-term supply forecasts from LSEs with annual peak loads greater than 200 MW. In the Title 20 regulations on public utilities and energy, Section 1347 states, "Each LSE shall submit its
10-year resource plan for meeting forecasted demand according to forms and instructions adopted by the Commission." That forecast from each LSE shall include "a description of existing and projected sources of supply, including generation projects and purchases from other utilities or elsewhere." Form S-2 is designed to collect these categorical and quantitative descriptions of forecasted LSE electricity supplies. While Section 1347 refers to "each LSE" being subject to a CEC data request, Section 1350 specifically exempts a small LSE from this requirement "if it provides the information required by section 1346."

For all LSEs not under jurisdiction of the CPUC for resource adequacy, Section 1346 states those LSEs shall submit to "quantitative documentation of its load forecasts and resource plans, and narrative descriptions of its procurement activities that will enable it to have adequate electricity supplies to serve forecasted loads."

Section 1346 also authorizes the CEC to require "for the most recent calendar year, historic hourly loads, and for each month, peak demand and resource utilization to satisfy customer demand, operating reserves, and other planning obligations of that month." Based on this authority, small publicly owned LSEs are required to provide their hourly loads for 2023 on Form S-3. All LSEs are required to report their historical annual peak demand. These data are to be reported on Form S-1 for 2022 and 2023. All LSEs are also required to report on Form S-2 how annual customer demand in 2022 and 2023 was served by the LSE's supply resources. This information will be used to assess (as well as forecast) energy supply as authorized by California Public Resources Code Sections 25303 and 25305, with an emphasis on evaluating the adequacy and availability of existing electricity supplies and identifying progress to date in reducing statewide greenhouse gas emissions.

Needed Capacity, Retirements, and Repowering

All large utilities are required to identify existing and planned capacity that will meet forecasted end-use loads through 2033. The continued need for existing utility-owned generation, along with potential retirement and repowering possibilities, will be part of this demonstration.

Large ESPs are required to identify how their contractual obligations to direct access customers will be met through 2028. ESPs are also required to identify their expected new and renewing customer loads for the next five years, using protocols set by the CPUC.

LSEs are required to enumerate their annual peak loads. Utilities are also required to identify, if applicable, other forecasted loads included within their distribution systems. These load forecasts will help enumerate how the interconnected LSEs will likely serve their local and zonal loads in the coming five years. The supply components of these resource plans will help assess the scope and temporal context of LSE open positions. Some of these open positions are subject to load migration uncertainties. In broad terms, the aggregate of these open positions will indicate where, when, and for whom new physical or contractual resources will be needed.

Planning Reserve Margin Assumptions

These instructions direct IOUs, CCAs, and ESPs to apply the 15 percent planning reserve margin to the entire planning horizon (10 years for IOUs and CCAs, 5 years for ESPs) except for the one option listed below. It is requested that IOUs and CCAs submit a planning horizon of 12 years. The required planning reserve margin is included on the template for Form S-1, line 8. All IOUs, all ESPs, and most POUs have used a 15 percent planning reserve margin in their previous resource plan and resource adequacy filings with the CEC.

Some POUs have adopted a different planning reserve margin based on their portfolio contingencies or reliability goals. POUs are directed to apply either the 15 percent planning reserve margin or their own adopted planning reserve criteria for the entire planning horizon.

None of the ESPs and few utilities have secured all the generating resources needed to meet forecasted loads for the next 10 years. In the resource plans that are due in 2024, most large LSEs will have open positions by 2033 for capacity to meet their annual peak loads. A standardized application of the 15 percent planning reserve margin allows the open positions of LSEs to be compared and summed using common assumptions.

In their month-ahead resource adequacy filings, LSEs under CPUC jurisdiction have been authorized to use a peak coincidence adjustment. This adjustment factor effectively reduces the 15 percent planning reserve margin by about 2.5 percent. For consistency with the resource adequacy filing requirements for LSEs under CPUC jurisdiction, all LSE resource plans may incorporate an adjustment for peak coincidence. A forecast of noncoincident peak-hour demand of end-use customers is required on line 5 of Form S-1. Line 6 of this form allows an LSE to reduce that forecast peak hour demand by a factor that corresponds with a statistically probable LSE share of peak demand during the system coincident peak-hour demand.

Loading Order Considerations

As with data submittal requirements for past *IEPR*s, LSEs are instructed to include realistic estimates of capacity and energy to be achieved from loading order programs. Do not assume that officially prescribed or formally adopted targets will be met precisely on schedule. These estimates affect the calculation of net-short capacity and open energy positions.

The resource plan is meant to be a practical guide based upon reasonable expectations, limitations, and contingencies as known. LSEs are expected to meet service obligations at reasonable cost, generate within environmental permits, and contract for deliveries within prudent risk tolerances. If a deficiency or contract problem with preferred resources has become apparent, the LSE must fill that need from other long-term or short-term procurement options. If specific targets adopted for LSE procurement will likely not be met, the LSE is asked to footnote the S-1 and S-2 forms to flag that discrepancy with some attribution regarding probable cause.