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FINAL STAFF REPORT

FORMS AND INSTRUCTIONS FOR SUBMITTING ELECTRICITY RESOURCE PLANS

Prepared in Support of the *2015 Integrated Energy Policy Report*

CALIFORNIA
ENERGY COMMISSION

Edmund G. Brown Jr., Governor

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ABSTRACT

These proposed electricity resource plan forms and instructions by staff of the California Energy Commission cover forecast years 2015 through 2024 and historical years 2013 and 2014. Load-serving entities in California are required to submit plans showing how demand for energy and annual peak load will be met by specific supply resources.

Keywords: Electricity resource plans, supply forecasts, resource adequacy, forms and instructions, California load-serving entities, *2015 Integrated Energy Policy Report*

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EXECUTIVE SUMMARY

This report describes information for electricity planning that is needed by the California Energy Commission to prepare its *2015 Integrated Energy Policy Report*. This report also provides forms with instructions that define the electricity resource planning and procurement information that must be submitted by load-serving entities, using common terms and conventions.

Public Resources Code Sections 25300-25323 direct the Energy Commission to regularly assess all aspects of energy demand and supply. These assessments will be included in the *2015 Integrated Energy Policy Report* or in supporting reports. These assessments 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, enhance the state's economy, and protect public health and safety. The forms and instructions described in this report are scheduled for adoption by the Energy Commission in December 2014.

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

These electricity planning assessments will provide a foundation for recommendations of the *2015 Integrated Energy Policy Report*. Resource plans from the investor-owned utilities may simultaneously serve as system resource plans to be considered by the California Public Utilities Commission to align long-term procurement plans with local area reliability needs. Many resource plans by load-serving entities, individually and collectively, are expected to inform controlled grid studies by the California Independent System Operator and by other regional balancing authorities.

General Instructions

Reporting requirements are essentially identical to those adopted in December 2012. Using tables instead of individual S-5 supply forms to provide information on bilateral contracts and power purchase agreements is specifically encouraged. Narrative resource planning and procurement information is not being required for this reporting cycle.

Who Must File What by When

In adopting these forms and instructions, the California Energy Commission specifically requires the load-serving entities (LSEs) other than investor-owned utilities (IOUs) to file certain electricity resource planning information by Friday, April 24, 2015; the IOUs are required to file resource planning information by Friday, May 1, 2015. The data do not have to be distributed 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 California Code of Regulations, Title 20, Article 2, Section 1342.

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 Resource Accounting Table
- CEC Form S-2 Energy Balance Accounting Table
- CEC Form S-3 2014 Small POUs Hourly Loads
- CEC Form S-5 Bilateral Contracts and Power Purchase Agreements

Electricity supply forms are required from every publicly owned utility (POU) that has electric end-use customers in California.

POUs with annual peak load less than 200 megawatts (MW) in both 2013 and 2014 must file Supply Forms S-1 and S-2 including load and resource data for calendar years 2013, 2014, and 2015. These "small" LSEs are also required to provide Supply Form S-3. If a small POU has one or more bilateral contracts or purchase power agreements, the S-5 supply form is also required.

POUs with annual peak loads larger than 200 MW in either 2013 or 2014 must file Supply Forms S-1 and S-2 including load and resource data for calendar years 2013 through 2024. If a "large" POU has one or bilateral contracts or purchase power agreements, the S-5 supply form is also required.

Similar requirements apply to an IOU or community choice aggregator (CCA) that had peak loads for its California customers larger than 200 MW in either 2013 or 2014. These large LSEs must file Supply Forms S-1 and S-2 including load and resource data for calendar years 2013 through 2024. Data submittals are not required from small IOUs or small CCAs (those with peak loads less than 200 MW in both 2013 and 2014).

For an electric service provider (ESP) that had peak loads for its California customers larger than 200 MW in either 2013 or 2014, the expected forecast period is shorter by half. These ESPs must file Supply Forms S-1 and S-2 including load and resource data for calendar years 2013 through 2019. Large IOUs, CCAs, and ESPs are also required to provide Supply Form S-5. Data submittals are not required from small IOUs, CCAs, or ESPs.

The City of Vernon is requested to file Supply Forms S-1 and S-2 including load and resource data for 2013 through 2024 comparable to its resource plan submittals in prior years.

The City and County of San Francisco is requested to file Supply Forms S-1 and S-2 including load and resource data for 2013 through 2024, even though its firm end-use customer peak loads did not exceed 200 MW in 2013 or 2014.

Submittal Format Requirements

For all filings, parties are required to submit a brief cover letter or transmittal email. The Energy Commission encourages data filing by email attachment. When naming an attached file of 4 megabytes or less, please include the contact's name or the organization's name. Submittals that do not have a request for confidentiality may be sent by electronic mail to:

- Docket@energy.ca.gov

In the subject line, please include "Docket #15-IEPR-02 [LSE Name] Resource Plan."

If requesting confidentiality for any part of the submittal, please read and carefully follow the instructions in Appendix A. Yellow fill should be used to highlight all cells for which the LSE is requesting confidentiality. Energy Commission staff will use color coding to track these requests and to protect data determined to be confidential.

Electronic information files are required in these formats:

- Data on specified forms using Microsoft Excel®
- Reports, narratives, and cover letters in Microsoft Word® or Adobe Acrobat®

An Excel© template with data forms is available on the Energy Commission website at http://www.energy.ca.gov/2015_energypolicy/ and by request. This template is the

preferred format. For a permanent record of data submittals, participants may provide a file in Adobe Acrobat that duplicates information shown on an Excel file.

General questions about these forms or instructions may be directed to Jim Woodward at Jim.Woodward@energy.ca.gov or (916) 654-5180, or to John Hingtgen at John.Hingtgen@energy.ca.gov or (916) 657-4046.

Electricity Resource Planning Form: Administrative Information

Scope

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

Name of LSE
This should be the legal or business name of the LSE. Entries on this tab will copy automatically to all subsequent tabs.

Name of Resource Planning Coordinator
For larger utilities, this is the person responsible for managing work to respond to this data submittal requirement or to transmit the supply forms to the Energy Commission.

Name and Title of Persons Who Prepared Supply Resource Forms
Please provide the name of the person responsible for the accuracy and completeness of individual form.

Contact Information
Provide this information to facilitate review of the filing.

Date Completed
Please write the date the form was completed such as April 1, 2015.

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

Electricity Resource Planning Form S-1: Capacity Resource Accounting Table (MW)

Scope

LSEs are required to estimate how much power in MW is needed to serve calendar year annual peak retail customer load, plus reserves and other obligations. LSEs are also required to identify how much power will come from various electricity supply resources. These estimates are required for 2015 through 2024 for larger utilities and CCAs, for 2015 through 2019 for ESPs, and only for 2015 for small POUs. (See page 3 for definitions.) The load forecast on Form S-1 shall be consistent with and compatible with the demand forecast provided to the Energy Commission according to the requirements of Section 1345(a).

On a separate table below the main body of Form S-1, all LSEs are required to report their actual peak loads (including unserved demand) in calendar years 2013 and 2014. However, LSEs are not required to show which resources were dispatched or available to serve those historic peak-hour loads. Instead, in the main body of Form S-1, LSEs are to show capacity resources that were, at the start of those prior years, expected to be available to meet the forecast 1-in-2 peak loads.

In general, the data submitted by each LSE on Form S-1 should correspond with matching data (line to line) on the Energy Balance table, Form S-2. If a capacity-only resource is listed on Form S-1, this same resource should appear on Form S-2 with zero values for expected annual energy supply.

Form S-1, with the other supply forms and related narratives, comprise a resource plan by which each LSE shall demonstrate how the LSE can meet its obligations to serve end-use loads and to meet other firm obligations. The public purposes served by this data collection project are presented in Appendix B, along with a brief discussion of planning reserve margin assumptions and loading order considerations.

Net Qualifying Capacity or Dependable Capacity

LSEs that provide end-use electrical services in the balancing area of the California Independent System Operator (California ISO) are required to report use current net qualifying capacity values for existing resources and to project these NQC values through the end of the forecast period. The values reported on Form S-1 should be consistent with year-ahead resource adequacy filings.[1]

1 For 2015, the list of NQC values have been posted at http://www.caiso.com/Documents/Final2015NetQualifyingCapacity_RAResources.htm.

Report the amount of capacity from each generation source that is considered firm and reliable for meeting loads forecast to occur in the annual peak hour. This amount would be measurable at the busbar. For intermittent resources without flexible dispatch (such as solar distributed generation [DG]), dependable capacity estimates should reflect the nonfirm nature of this supply. Capacity values should not be adjusted for expected forced outages.

If there is a difference between NQC and dependable capacity values for a particular resource, LSEs are instructed to use the lower number on the S-1 form, though the higher number may be used if an explanatory footnote is provided. Do not use or report values for nameplate capacity, installed capacity, or Pmax capacity (unencumbered capacity).

Resource Adequacy Counting Rule Issues

Resources should count only as far as their capacity can be relied upon to perform. For contractual resources, show how much capacity will be available to the LSE throughout the forecast period on the S-5 form, and on the S-1 form show how much capacity will normally be available to meet annual peak loads. In general, a resource must be able to operate for four consecutive hours for three consecutive days at the capacity listed on Form S-1 unless otherwise specified by the California Public Utilities Commission (CPUC), the California ISO, the Energy Commission, or the LSE's adopted counting conventions.[2] The listings on Form S-1 should include all LSE-owned or controlled resources, and all planned resources. The distinction between planned and generic resources is defined in Appendix B.

It is reasonable to count all generation as deliverable by assuming that transmission upgrades will be completed by participating transmission owners. For LSEs not under CPUC jurisdiction, dependable capacity for exchanges and imports is the amount that can be counted on with high certainty for meeting the LSE's noncoincident peak demand.

Peak Load Calculations—Line 1 to 17 Instructions

Line 1-Forecast Total Peak-Hour 1-in-2 Demand

On line 1, all LSEs are required to forecast their total noncoincident demand during the annual peak hour for each year in the forecast period. This total includes peak-hour energy demand by utilities for their end-use loads. 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. Therefore, the annual peak hour estimates must include allowances for transmission losses, distribution line losses, and unaccounted for energy (UFE). Do not include generator station (parasitic) loads. For these 1-in-2 end-use customer load forecasts, LSEs are required

2 For IOUs, CCAs, and ESPs, capacity values should be consistent with D.10-06-036 issued June 24, 2012, posted at http://docs.cpuc.ca.gov/PUBLISHED/FINAL_DECISION/119856.htm.

to use their best estimates about their future customers and their loads. These estimates may be greater than or less than the current obligation to serve end-use customers.

For each year in the forecast period, the largest annual Forecast Total Peak Load on line 1 of the S-1 form should correspond to or correlate with the LSE peak load previously reported on demand Form 1.3.

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 Forecast Form 1.3.

IOUs are instructed to include on line 1 all the results of migrating load forecasts as listed on Demand Forecast Form 1.3.

Southern California Edison Company (SCE) is required to include on line 1 the self-supply load of the Metropolitan Water District of Southern California (MWD), since MWD's loads and resources are integrated with those of SCE for planning and scheduling purposes.

On line 1, all LSEs are directed include the effects of private supply that are reasonably expected to occur, customer-owned generation that reduces the procurement obligations of LSEs. This includes DG and self-generation facilities such as the New Solar Homes Partnership (NSHP) administered by the Energy Commission. It also includes programs to implement the California Solar Initiative (CSI), and the Self-Generation Incentive Program (SGIP) administered by the CPUC. LSEs submitting demand forecasts show private supply amounts of capacity and energy on Demand Forms 1.7a through 1.7d. Supplies of DG power that are surplus to customer needs should be reported on Supply Form S-1 below on line 18b (renewable DG) or line 19b (nonrenewable DG).

Peak load estimates on line 1 should not include capacity amounts needed for a planning reserve margin (shown on line 9) or for firm wholesale obligations of the LSE (shown on line 10).

For 2013 and 2014 show the amounts of load and resources that were expected for those years. List individual capacity resources expected to be available to serve peak-hour load. For LSEs in the California ISO balancing area, this listing for 2013 and 2014 should include those resources named in the year-ahead local resource adequacy filings or in the month-ahead resource adequacy filings for the peak month. What is NOT requested in these columns is an enumeration of resources that were actually committed and dispatched (in varying amounts) to meet actual coincident or noncoincident peak-hour loads in 2013 or 2014.

Line 2a—ESP Peak Load: Existing Customer Contracts

ESPs are required to identify how their expected loads are divided between new and renewing customers. On line 2a, ESPs are required to indicate the load obligations to serve existing customers under contract, along with contracts that have future start dates.

Line 2b—ESP Peak Load: New and Renewed Contracts
On line 2b, ESPs are required to estimate total annual capacity needs that arise 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 publicly disclosed. For ESPs, the sum of values on line 2b plus line 2a should equal the annual peak load number entered on line 1.

Line 2c—ESP Peak Load in PG&E Service Area
On line 2c, ESPs are required to estimate noncoincident peak loads in the service area of Pacific Gas and Electric Company (PG&E). The amounts on lines 2c, 2d, and 2e should equal the total shown on line 1.

Line 2d—ESP Peak Load in SCE Service Area
On line 2d, ESPs are required to estimate noncoincident peak loads in the service area of SCE.

Line 2e—ESP Peak Load in San Diego Gas &Electric Company Service Area
On line 2e, ESPs are required to estimate noncoincident peak loads in the service area of SDG&E.

Line 3—Additional Achievable Energy Efficiency
On line 3, IOUs, CCAs, and POUs are directed to estimate median values (stated as negative numbers) for cost-effective and achievable savings from future programs that are not yet implemented or funded.

Do not include the effects of energy efficiency programs that are already embedded in the LSE demand forecast (Demand Forms 1.1) or in the LSE load forecast (Supply Form S-1, line 1). Reported savings should include those that are expected to be achieved in pursuit of goals established by regulatory agencies but that have not yet been funded or for which final program design details have not yet been established.

On line 3, IOUs are required to estimate annual peak-hour load reductions reasonably expected from future additional and efficiency programs.

For POUs, this category is synonymous with "Uncommitted Energy Efficiency." For POUs, supporting studies may not be available to estimate future energy efficiency reductions to load that would be listed on line 3. Where studies to identify a reasonable offset are lacking, enter zero. Where studies have identified potential energy efficiency programs, POUs should assume that these programs are funded and implemented and become reasonably effective. For POUs, "committed" means the governing board for a municipal utility has authorized spending for at least a preliminary program plan from which impacts can be quantified.

Line 4—Demand Response/Interruptible Programs

On line 4, LSEs are required to enter the load reduction amounts (stated as negative numbers) that are expected to be available from all dispatchable programs to reduce demand or to interrupt nonfirm demand.[3] Only interruptible load subject to LSE or balancing authority dispatch should be counted on line 4.

IOUs are expected to provide demand response (DR) load impact projections through 2024 as filed in the Long Term Procurement Plan (LTPP) process under Decision (D.) 08-04-050 and D.10-06-036.[4]

The term "demand response" 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. Impacts from committed *nondispatchable* programs should be included in the demand forecast and in the peak-hour load forecast on line 1 of this form.[5] 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.[6]

Dispatchable DR programs are activated using a predetermined threshold such as interruptible residential air conditioner loads. All dispatchable demand response resources should be included on line 4.

LSEs serving loads in the California ISO balancing area are required to use the CPUC-adopted standards for counting DR qualifying capacity. "The Commission determined that DR resources should be available at least 48 hours each summer season to count as qualifying capacity, and that DR resources that operate two hours per day should be eligible but subject to a limit of 0.89 percent of monthly peaks." (D.04-10-035, pp. 26-27 and

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3 *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. This includes critical peak pricing and real-time pricing.

4 The load impacts were filed in Rulemaking (R.) 07-01-041. See http://docs.cpuc.ca.gov/published/proceedings/R0701041.htm.

5 Nondispatchable programs are not activated using a predetermined threshold condition but allow the customer to make the economic choice 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 DR programs that may or may not correspond with adopted targets. This includes fixed time-of-use tariffs that result in load reductions.

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

D.04-10-035, quoted in D.05-10-042). This standard for year-ahead resource adequacy capacity should be applied to projected DR resources throughout the forecast period.

For example, in the California ISO balancing area, many LSEs can cycle power to residential air conditioners during Stage 2 emergencies to avoid reaching a Stage 3 emergency with forced load shedding. To count as DR resources, interruptible and emergency programs need be dependable only for two consecutive hours in a month.

Line 5—Adjusted Peak-Hour Demand: End-Use Customers
On the Excel spreadsheet, this line automatically calculates the forecast noncoincident peak-hour demand of an LSE's end-use customers. It is the sum of lines 1, 3, and 4.

Line 6—Coincidence Adjustment
Line 6 of this form allows an LSE to reduce its forecast noncoincident annual peak-hour demand by a factor such that it corresponds with the statistically probable LSE share of peak demand during peak-hour demand of the system (balancing area). Enter this MW value as a negative number. 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.

Line 7—Coincident Peak-Hour Demand
On the Excel spreadsheet, 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
IOUs, CCAs, ESPs, and most POUs will enter an amount on line 8 that equals 15 percent of line 7. Under D.04-101-050, IOUs, CCAs, and ESPs are required to meet a 15 percent month-ahead planning reserve margin. The year-ahead resource adequacy showing for summer months (May-September) is due September 30 in the year before (or as specified by the CPUC).[7] 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.

The Energy Commission encourages POUs to use the same 15 percent planning reserve margin unless their local governing authority has adopted a different standard. If a POU consistently uses a different number for its resource planning and procurement responsibilities, then that number 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. If a POU is using a planning reserve margin that is less than 15 percent, this fact should be clearly stated and explained in its adopted resource adequacy policies and protocols.

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

Line 9—Credit for Imports That Carry Reserves (Minus)
Some LSEs have firm imports or other contractual resources that carry their own reserves with a specified delivery point. All such resources should be clearly identified and referenced with a footnote (or with information on the S-5 bilateral contracts form). For these firm supply resources, LSEs may show a capacity credit on line 9 equal to 5 percent of that firm capacity. This includes LSEs with an "all requirements" contract with Western or Bonneville Power Administration (BPA). Another example would be a Northern California POU that has a contract for 60 MW of firm supply delivered to North of Path 15 (NP 15). That POU would show a 3 MW credit on line 9. However, a firm import to an LSE in the California ISO balancing area must also have the capacity counting rights as established by the California ISO.

An LSE with a firm supply import does not need to procure additional resources that would cover for planned and forced outages from a specific generating resource. That combined planned and forced outage rate is arbitrarily assumed here to be about 5 percent. But 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 (6 + percent) and to cover normal forecast errors (~4 percent).

Line 10—Firm Sales Obligations
On line 10, list total amounts of firm capacity that the LSE has contracted to deliver to other parties, both within the LSE's balancing area and beyond. If this capacity obligation is measured at some distant delivery point, add an appropriate amount to accommodate line losses and station load. Please include 15 percent reserves for the share of sales obligations for which reserves are required.

Line 11—Firm LSE Peak-Hour Resource Requirement
On the Excel spreadsheet, this line automatically calculates the peak-hour resource procurement requirement. This sum results from adding lines 7, 8, and 10, and subtracting line 9.

Capacity Supply Resources—Line 12 to 20 Instructions

Line 12a—Total Fossil Fuel Dependable Capacity
This section requires forecast data on fossil resources that the LSE owns or controls. On the Excel spreadsheet, this line automatically calculates the sum of individual fossil resources listed on subsequent lines.

Line 12b—Fossil Unit 1
Beginning on line 12b, submit one row of capacity forecast data for each utility-owned or utility-controlled fossil plant. Please state the fuel type first (natural gas, coal), then the plant name and unit number.

Individual generating units should be listed separately, such as Silicon Valley Power's DVR 1 and DVR 2. Multiple units may be combined according to utility preference and convention, such as LADWP's Haynes 8, 9, and 10 CC. 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 on the Excel form if the LSE has no fossil resources. (Line 12b is needed for the formulas on line 12a to work. This same rule applies to line ##b in subsequent sections.)

Line 12c—Fossil Unit 2
Add lines as needed to list every utility-owned or utility-controlled fossil resource. Please delete this line and the next if unused.

Line 12d—Fossil Unit N
Please list any planned fossil resources last. This should be a specifically planned and named resource with an identified location. even if permitting or financing is not yet underway.

Line 13a—Total Dependable Nuclear Capacity
On the Excel spreadsheet, this line automatically calculates the sum of nuclear resources listed on subsequent lines.

Line 13b—Nuclear Unit 1
Beginning on line 13b, submit one row of capacity forecast data for each nuclear generating unit that the LSE owns or controls, such as Diablo Canyon Units 1 and 2 owned by PG&E. Other LSEs will delineate ownership shares and contractual rights to the output from Palo Verde Units 1, 2, and 3.

Line 13c—Nuclear Unit 2
Utilities may add lines to list each nuclear generating unit. Please delete line 13c if unused.

Line 14a—Total Dependable Hydroelectric Capacity
On the Excel spreadsheet, this line automatically calculates the sum of line 14b plus line 14c.

Line 14b—Total Hydro Plants Larger Than 30 MW
On line 14b, provide the 1-in-5 dependable capacity of all utility-owned and utility-controlled hydro resources that are each larger than 30 MW nameplate. Unlike the section on fossil plants, LSEs are not being asked to report capacity estimates for individual hydroelectric generating plants that they own or control.

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 is used as a proxy, LSEs should 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 most appropriate.

The United States Bureau of Reclamation (USBR) publishes highly reliable forecasts of Hoover Dam capacity and energy looking forward 24 months. Therefore, LSEs with Hoover entitlements should use the latest USBR forecast for 2015 and 2016 and use 1-in-5 dry year estimates for 2017 and beyond.

In general, a hydro resource must be able to operate during four superpeak hours for three consecutive days for capacity in that month to count. If individual LSEs use a significantly different definition of qualifying or dependable capacity, they are asked to provide a footnote to these numbers with an explanation.

Line 14c—Total: Hydro Plants 30 MW or Less
On line 14c, provide the total capacity for all hydro resources that are each equal to or less than 30 MW nameplate. Again, use 1-in-5 dry year hydrological conditions.

Line 15a—Total Utility-Controlled Renewable Capacity
On the Excel spreadsheet, this line automatically calculates the sum of individual resources listed below. This section requires forecast data on renewable resources (other than hydro) that are under LSE ownership or control.

Line 15b—Renewable Plant 1
List each utility-owned or utility-controlled generating plant using renewable fuel starting on line 15b. Please state the fuel type first (wind, solar, biomass, and so forth) followed by the plant or project name. Listings of individual generating units may be provided but is not required. Please use separate lines if multiphase projects will come on-line in different years.

List dependable or NQC values for each plant, project, or utility-controlled program (such as feed-in tariffs) greater than 1 MW nameplate.

For dual-fuel power plants that can burn natural gas or biomethane (or biogas), please list the same plant in both sections for fossil fuel and renewable resources.

Line 15c—Renewable Project 2
Add lines as needed to list each renewable energy resource or project under utility ownership or control. Please delete lines 15c and 15d if unused.

Line 15d—Renewable Project N
Please list planned renewable projects last. This should be a specific, named renewable project with an identified location, even if permitting or financing are not yet underway.

> *[Lines 16a to 16N—Capacity from DWR Contracts]*
> This section has been deleted from supply forms S-1 and S-2 in this reporting cycle. This section referred to supply contracts signed in 2001 by the California Energy Resources Scheduling Office of the California Department of Water Resources (DWR). If an IOU has a contractual supply resource that was originally negotiated by DWR, that capacity resource should be listed below in the section Other Bilateral Contracts.

Line 17a—Total Qualifying Facility (QF) Capacity
On the Excel spreadsheet, 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).

IOUs are required to indicate the amounts of capacity expected from QFs through 2024. As existing contracts expire, many of these generating resources will likely remain available to IOUs under new contract terms. Some QF owners may win new contracts in competitive renewable solicitations. Other QF owners may negotiate tolling agreements or new dispatch terms that would increase capacity ratings of the resource in return for capacity payments.

IOUs need not assume that existing QF contracts will be renewed or extended beyond those terms for which an extension has already been mandated, requested, or approved. So far as an IOU assumes current QF resources will continue to be available, these resources should be included in the aggregate lists on lines 17b through 17h.

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 power purchase agreements, newly negotiated contracts, or CPUC-approved settlement agreements.

Line 17b—Biofuels
Beginning on line 17b, IOUs are required to provide an amount of QF capacity aggregated by fuel or technology type. This form does not ask IOUs for data about each individual QF contract or QF generating resource.

Line 17b requires the total capacity of QF resources powered by biofuels. This is a large generic term including landfill gas, forest products, almond shells, dairy waste, and discarded fast food cooking oils.

Line 17c—Geothermal
Line 17c requires the total capacity of all types of geothermal production, including dry vapor and dual-flash systems.

Line 17d—Small Hydro
Line 17d requires the total capacity of small hydro QF, meaning only those plants rated 30 MW nameplate or less. Provide a derated qualifying capacity total showing what can be expected for a 1-in-5 dry year.

Line 17e—Solar
Line17e requires the total dependable capacity from all types of solar QF resources. Include only the output of solar facilities injected into distribution or transmission systems that will help serve annual IOU peak loads. Do not include solar generation that only reduces end-use demand.

Line 17f—Wind
Line 17f requires a summary of existing QF resources that the IOU knows or expects will be under QF contract terms. New wind resources are not expected to have new QF contracts.

Line 17g—Natural Gas
Line 17g requires the total capacity of all QF resources powered by natural gas.

Line 17h—Other
Line 17h reports all other nonrenewable generating resources under QF contracts, including resources that once had QF eligibility according to PURPA.

Line 18a—Total Capacity From Renewable Energy Contracts
On the Excel spreadsheet, this line automatically calculates the sum of contractual renewable supply resources listed below. 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 18b—Renewable DG Supply
LSEs are required show on line 18b 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's side of the meter. Include only amounts of DG injections that can supply other connected loads.

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 19b.

DG supply is listed here with other renewable contractual supplies as a matter of convenience.

Line 18c—Renewable Contract 1
Use line 18c to begin listing individual renewable energy contracts. Please state the fuel type first (wind, solar, and so forth), then the contract name. It may be useful to add the supplier name, if different, in parentheses. The contract name (or acronym) should match the comparable listing on Form S-2 and the corresponding Form S-5.

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

Line 18d—Renewable Contract 2
Please state fuel type first, then the contract name. Add lines as needed. Delete lines 18d and 18e, if unused. List dependable or NQC values for each plant, project, or contract.

Line 18e—Renewable Contract N
Please list any planned renewable contracts last. This should be a specific, named renewable project with an identified location and/or supplier even if permitting or financing are not yet

underway. To be listed in this section as a planned resource, contract negotiations or utility planning commitments to such a contract must be well advanced.

Some renewable energy supply contracts will expire during the forecast period. If the LSE expects to renew or renegotiate a particular contract with the same counterparty, it is appropriate to continue listing specific capacity values on a new line with an appropriate name and an explanatory footnote.

Line 19a—Total Capacity From Other Bilateral Contracts
On the Excel spreadsheet, this line automatically calculates the sum of supply resources listed below.

Line 19b—Non-Renewable DG Supply
LSEs are required to show 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 19c—Other Bilateral Contract 1
Use line 19c to begin listing all other bilateral contracts and power purchase agreements with durations longer than three consecutive months. List all such supplies if they are not reported in earlier sections.

Each bilateral contract should be named and listed on a separate line beginning on line 19c. It may be useful to add the supplier name, if different, in parentheses. The name should match a comparable listing on Form S-2. (If this is a capacity only contract for resource adequacy, the energy amounts on Form S-2 will be zero.)

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

Line 19d—Other Bilateral Contract 2
This contract name should also match the contract name at the top of a related Form S-5.

Line 19e—Other Bilateral Contract 3
Add lines as needed. Delete unused lines 19c through 19f.

Line 19f—Other Bilateral Contract N
Please list any planned contracts last. 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 underway. To be listed in this section as a planned resource, contract negotiations or utility commitments to such a contract must be well-advanced.

Many bilateral supply contracts will expire during the forecast period. If the LSE expects to renew or renegotiate a particular contract with the same counterparty, it is appropriate to

continue listing specific capacity values on a new line with an appropriate name and an explanatory footnote.

Line 20—Short-Term and Spot Market Purchases
On line 20, 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 is two days or fewer in duration.

For 2013 and 2014, 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.

Capacity Balance Summary—Line 21 to 26 Instructions

Line 21—Total: Existing and Planned Capacity
On the Excel template, the sum on line 21 is calculated automatically. This line sums existing and planned electricity supply resources counted in earlier sections: line 12a (fossil fuel dependable capacity), 13a (nuclear), 14a (hydroelectric), 15a (utility-controlled renewables), 17a (QF capacity), 18a (renewable energy contracts), 19a (other bilateral contracts), and 20 (short-term and spot market purchases).

Line 22—Firm LSE Peak-Hour Requirement
On the Excel template, the sum on line 22 is automatically repeated from line 11.

Line 23—Capacity Surplus or (Capacity Need)
On the Excel template, the difference between line 21 and line 22 is calculated automatically. A negative number indicates a net-open position and will appear in red font on the Excel template. A positive number on line 23 indicates a net-surplus capacity position.

Since capacity values shown for 2013 and 2014 represent expectations at the start of those years, a negative number is possible for any given year.

A net-open capacity position will be filled in future years by one or more procurement actions, including new bilateral contracts, planned additions for utility-controlled capacity, short-term contracts, and spot market purchases. In some instances, LSEs have committed to specific but yet-to-be-built physical resources. All announced projects with plant names and known physical locations should be listed in earlier sections on utility-controlled or contractual resources.

Line 24—Generic Renewable Resources
On line 24, enter the aggregate or dependable capacity reasonably expected from newly added but unspecified renewable resources. The capacity values for generic renewable resources should correlate with the forecast of generic renewable energy procurement shown on line 20 on Form S-2, though this need not be a formulaic or absolute relationship.

Line 25—Generic Non-Renewable Resources
On line 25, enter the additional capacity (dependable or NQC) the LSE reasonably expects will be needed after accounting for generic renewable resource additions. Amounts shown on line 25 plus line 24 should always be greater than or equal to any negative amounts shown on line 23 (net open positions).

Line 26—Specified Planning Reserve Margin
On line 26, 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 and does not include a reduction for coincidence. This cell does not feed any other cell. For most LSEs this number will be a constant for the planning horizon.

Every LSE in California ISO has adopted a "year-ahead" planning reserve margin stated as a percentage of forecasted peak loads.

If the LSE's planning reserve margin is based on a contingency reliability criteria (such as N-1), state this number in megawatts. 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.

Historical LSE Peak Load—Line 27 to 33 Instructions

All LSEs are required to calculate and report their actual noncoincident peak loads during calendar years 2013 and 2014. 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, historic peak-hour load includes all the energy delivered to end-use customers, plus energy used by the utility (such as pumped storage), plus distribution losses, UFE, and more. It 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. (However, the 10 members of the Northern California Power Agency [NCPA] Power Pool are asked to report the annual peak loads for each LSE and the coincident peak loads for the NCPA Power Pool.)

Line 27—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 balancing area, this value for actual metered deliveries does not include transmission losses.

For this purpose, line 27 amounts for prior year loads includes long-term firm sales obligations (more than 91 days duration) but should not include short-term sales or spot market sales that may have been negotiated for that hour.

Line 28—Date of Peak Load for Annual Peak Deliveries
Please report the day in numeric format, such as 9/8/14 (for September 8, 2014).

Line 29—Hour Ending (HE) for Annual Peak Deliveries
Please 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 30—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 31—Self-Generation and DG Adjustments
On line 31, LSEs are required to show amounts of peak-hour supplies from customers with self-generation and DG 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 31 are in addition to metered deliveries from the high-voltage grid, as shown on line 27.

Line 32—Adjustments for Major Outages
On line 32, LSEs are required to estimate loads that were not served during the peak hour because of significant outages in the distribution system. LSEs may also record corrections or adjustments deemed necessary for a reasonably accurate calculation of annual peak load.

Line 33—Adjusted Annual Peak Load
On the Excel template, the sum of lines 27, 30, 31, and 32 is calculated automatically.

The Energy Commission suggests using this number in load forecasting to positively incorporate the benefits and conventions of demand-side management (DSM) programs. Many LSEs have DSM programs that are expected to grow in size and importance so that costs of meeting firm load can be reduced by asking certain loads to participate in curtailments. Without these DSM programs, the annual peak for actual metered deliveries would be measurably higher for many LSEs.

Electricity Resource Planning Form S-2: Energy Balance Table (Gigawatt Hours [GWh])

Scope

LSEs are required to estimate how much calendar year annual energy in GWh is needed to serve forecast needs and how much energy will come from various electricity supply resources. These estimates are required for 2015 through 2024 for larger utilities and CCAs, for 2015 through 2019 for ESPs, and only for 2015 for small POUs. The energy requirements forecast on Form S-2 shall be consistent with and compatible with the demand forecast provided to the Energy Commission according to the requirements of Section 1345(a).

All LSEs are required to show actual amounts of energy supply that was procured to meet requirements in calendar years 2013 and 2014.

Form S-2 with the other supply forms and related narratives comprise a resource plan by which each LSE shall demonstrate how the LSE can meet the energy needs of its customers and other firm obligations throughout the year.

In general, the data submitted by each LSE on Form S-2 should correspond with matching data (line to line) with the data submitted on the Capacity Resource Accounting Table, Form S-1. Instructions for lines on Form S-2 often repeat those provided for matching lines on Form S-1. This repetition is meant to provide clarity and convenience for people who will be completing these forms. Most supply data categories on the two forms are identical.

Energy Demand Calculations (GWh)—Line 1 to 13 Instructions

Line 1—Forecast Total Energy Demand/Consumption
On line 1, all LSEs are required 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.

SCE is required to include on line 1 the self-supply energy requirements of the MWD, since MWD's loads and resources are integrated with those of SCE for planning and scheduling purposes.

On line 1, all LSEs are required include the effects of private supply that are reasonably expected to occur, customer-owned generation that reduces the procurement obligations of LSEs. This includes all DG and self-generation facilities such as the NSHP administered by the Energy Commission. It also includes programs to implement the CSI, and the SGIP administered by the CPUC. LSEs submitting demand forecasts show private supply

amounts of capacity and energy on Demand Forms 1.7a through 1.7d. Supplies of DG power that are surplus to customer needs should be reported on Supply Form S-1 below on line 14b (renewable DG) or line 15b (nonrenewable DG).

Line 2a—ESP Energy Demand: Existing Customer Contracts
ESPs are required to identify how their expected loads are divided between new and renewing customers. On line 2a, ESPs are required to estimate total annual energy needs of their existing customers. Energy totals on line 2a should include only obligations for current contract service periods.

Line 2b—ESP Energy Demand: New and Renewed Contracts
On line 2b, ESPs are required to estimate total annual energy needs that arise from new customers, plus contract renewals and extensions to serve existing customers. This forecast should be the "most likely" case. Enter the amount of energy needed to serve new customers plus existing customers who are expected to renew or extend ESP service. The amount on line 2b should equal the amount on line 1 less the amount on line 2a.

Line 2c—ESP Energy Demand in PG&E Service Area
On line 2c, ESPs are required to estimate total annual energy needs in the service area of PG&E. The amounts on lines 2c, 2d, and 2e should equal the total shown on line 1.

Line 2d—ESP Energy Demand in SCE Service Area
On line 2d, ESPs are required to estimate total annual energy needs in the service territory of SCE.

Line 2e—ESP Energy Demand in SDG&E Service Area
On line 2e, ESPs are required to estimate total annual energy needs in the service territory of SDG&E.

Line 3—Additional and Achievable Energy Efficiency
On line 3, IOUs, CCAs, and POUs are directed to estimate median values (stated as negative numbers) for cost-effective and achievable savings from future programs that are not yet implemented or funded. Do not include the effects of energy efficiency (EE) programs that are already embedded in the LSE demand forecast (Demand Form 1.3 and Supply Form S-2, line 1).

Utilities are required to estimate energy savings from programs that are not currently funded or committed. Reported savings should include those that are expected to be achieved in pursuit of goals established by regulatory agencies but that have not yet been funded or for which final program design details have not yet been established.

For POUs, this category is synonymous with "Uncommitted Energy Efficiency." For POUs, supporting studies may not be available to estimate future energy efficiency savings from utility-sponsored programs. Where studies do not identify a reasonable offset, enter zero. Where studies have identified potential EE programs, POUs should assume that these programs are funded and implemented and become reasonably effective. If future programs

already have a funding commitment established in rates, the EE reductions should be embedded in the load forecast.

Line 4—Demand Response/Interruptible Programs
On line 4, LSEs are required to enter the modest reduction in energy demand (stated as negative numbers) expected to result from dispatchable demand reduction programs. Only interruptible load subject to LSE or balancing authority dispatch should be counted on line 4. Dispatchable programs are defined and discussed in the instructions for line 4 on the S-1 form.

The energy demand forecast on Form S-2, line 1, should already include adjustments for committed DR programs that are not dispatchable by the LSE, as explained in the instructions for Form S-1. A nondispatchable DR program allows customers to make economic choices whether to modify usage, such as response to ongoing price signals.

Line 5—Adjusted Energy Demand/Consumption
On the Excel spreadsheet, this line automatically calculates the net energy demand for end-use customers. It is the sum of lines 1, 3, and 4.

Line 6—Firm Sales Obligations
On line 6, list total amounts of firm energy that the utility has contracted to deliver to other parties, both within the LSE's balancing area and beyond. If this energy supply obligation is measured at some distant delivery point, add an appropriate amount to accommodate line losses and station load.

Line 7—Firm LSE Energy Requirement
On the Excel spreadsheet, line 7 automatically calculates the firm LSE energy requirement, the sum of lines 5 and 6.

Energy Supply Resources—Line 8 to 16 Instructions

Line 8a—Total Fossil Energy Supply
This section requires forecast data on fossil resources that the LSE owns or controls. On the Excel spreadsheet, this line automatically calculates the sum of fossil resources listed on subsequent lines.

Line 8b—Fossil Unit 1
Beginning on line 8b, submit one row of forecast energy production for each utility-owned or -controlled fossil plant or generating unit, consistent with the S-1 supply form. Please state the fuel type first (natural gas, coal), then the plant name and unit number. In general, generating units should be listed separately though multiple units may be combined according to utility preference and convention. 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.

Do not provide the maximum potential energy output from a fossil resource unless that amount is expected from a baseload resource that is fully committed, scheduled, and dispatched whenever it is available.

Leave this line blank on the Excel form if the LSE has no fossil resources. (Line 8b is needed for the formulas on line 8a to work. This same rule applies to line ##b in subsequent sections.)

Line 8c—Fossil Unit 2
Add lines as needed to list every utility-owned or utility-controlled fossil resource. Please delete this line and the next if unused.

Line 8d—Fossil Unit N
Please list any planned fossil resources last. This should be a specifically planned and named resource with an identified location, even if permitting or financing is not yet underway.

Line 9a—Total Nuclear Energy Supply
On the Excel spreadsheet, this line automatically calculates the sum of nuclear resources listed on subsequent lines.

Line 9b—Unit 1
Beginning on line 9b, submit one row of energy forecast data for each nuclear generating unit that the LSE owns or controls, such as Diablo Canyon Units 1 and 2 owned by PG&E. Other LSEs will delineate ownership shares and contractual rights to the output from Palo Verde Units 1, 2, and 3.

Line 9c—Unit 2
Utilities may add lines to list each nuclear generating unit. Please delete line 9c if unused.

Line 10a—Total Hydroelectric Energy Generation
On the Excel spreadsheet, this line automatically calculates the sum of line 10b and line 10c.

Line 10b—Total Energy: Hydro Plants Larger Than 30 MW
On line 10b, provide the 1-in-2 estimate of all utility-owned and utility-controlled hydro resources that are larger than 30 MW nameplate. This distinction follows Federal Energy Regulatory Commission (FERC) definitions of large and small hydro.

For lines 10b and 10c, energy production estimates should use median (1-in-2) hydrological conditions, with one caveat. USBR publishes highly reliable 24-month forecasts of capacity and energy for the lower Colorado River. Therefore, LSEs with Hoover, Davis, and Parker entitlements may use the latest USBR forecast for 2015 and 2016 on lines 10b, followed by 1-in-2 estimates for 2017 and beyond.

Amounts of hydroelectric generation may diminish as a result of new FERC license conditions and from mandatory conditions set by the State Water Resources Control Board (SWRCB) for water quality certification, according to Section 404 of the federal Clean Water

Act. LSEs are instructed to identify and incorporate any reductions in energy production considered most probable.

For 2013 and 2014, LSEs are required to show actual amounts of annual energy generation on lines 10a, 10b, and 10c.

Line 10c—Total Energy: Hydro Plants 30 MW or Less
On line 10c, estimate total hydroelectric energy production from all LSE-owned or utility-controlled hydro resources equal to or less than 30 MW nameplate.

Line 11a—Total Utility-Controlled Renewable Energy
On the Excel spreadsheet, this line automatically calculates the sum of resources listed. This section requires forecast data on renewable resources (other than hydro) that are under LSE ownership or control.

Line 11b—Renewable Plant 1
List each utility-owned or utility-controlled generating plant using renewable fuel starting on line 11b. Please state the fuel type first (wind, solar, biomass, and so forth), followed by the plant or project name. Listings of generating units may be provided but are not required. Please use separate lines if multiphase projects will come on-line in different years.

List dependable or NQC values for each plant, project, or utility-controlled program (such as feed-in tariffs) greater than 1 MW nameplate.

For dual-fuel power plants that can burn natural gas or biomethane (or biogas), please list the same plant in both sections for fossil fuel and renewable resources.

Line 11c—Renewable Project 2
Add lines as needed to list each renewable energy resource or project under utility ownership or control. Please delete lines 11c and 11d if unused.

Line 11d— Renewable Project N
Please list planned renewable projects last. This should be a specific, named renewable project with an identified location, even if permitting or financing is not yet underway.

> *[Lines 12a to 12N – Energy Supply from DWR Contracts]*
> This section has been deleted from supply forms S-1 and S-2 in this reporting cycle. This section referred to supply contracts signed in 2001 by the California Energy Resources Scheduling Office of the DWR. If an IOU has a contractual supply resource that was originally negotiated by DWR, that energy supply resource should be listed below in the section Other Bilateral Contracts.

Line 13a—Total Energy Supply From Qualifying Facility (QF) Contracts
On the Excel spreadsheet, this line automatically calculates the sum of resources listed below. This section refers to supply contracts for capacity from QFs as defined by PURPA.

IOUs are required to indicate the amounts of annual energy expected from QFs through 2024. As existing contracts expire, many of these generating resources will likely remain available to IOUs under new contract terms. Some QF owners may win new contracts in competitive renewable solicitations. Other QF owners may negotiate tolling agreements or new dispatch terms that would increase capacity ratings of the resource in return for capacity payments.

IOUs need not assume that existing QF contracts will be renewed or extended beyond those terms for which an extension has already been mandated, requested, or approved. So far as an IOU assumes current QF resources will continue to be available, these resources should be included in the aggregate lists on lines 13b through 13h.

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 power purchase agreements, newly negotiated contracts, or CPUC-approved settlement agreements.

Line 13b—Biofuels
Beginning on line 13b, IOUs are required to provide an amount of annual energy aggregated by QF fuel or technology type. This form does not ask IOUs for data about specific QF contracts or QF generating resources.

Line 13b requires the total annual energy from QF resources powered by biofuels. This is a large generic term including landfill gas, forest products, almond shells, dairy waste, and discarded fast food cooking oils.

Line 13c—Geothermal
Line 13c requires the total annual energy from all types of geothermal production, including dry-vapor and dual-flash systems.

Line 13d—Small Hydro
Line 13d requires the total annual energy from small hydro QF resources, meaning only those plants rated 30 MW nameplate or less.

Line 13e—Solar
Line 13e requires the total annual energy from all types of solar QF resources. Include only the generation from solar facilities injected into distribution or transmission systems that will help meet annual IOU energy requirements.

Line 13f—Wind
Line 13f requires a summary of existing QF resources that the IOU knows or expects will be under QF contract terms. New wind resources are not expected to have new QF contracts.

Line 13g—Natural Gas
Line 13g requires the total annual energy from all QF resources powered by natural gas.

Line 13h—Other
Line 13h reports all other nonrenewable generating resources under QF contracts, including resources that once had QF eligibility according to PURPA.

Line 14a—Total Energy Supply From Renewable Contracts
On the Excel spreadsheet, this line automatically calculates the sum of contractual renewable supply resources listed below. Contracts with durations longer than three consecutive months should be named and listed on separate lines, beginning with line 14c. Renewable contracts that provide less than 1 MW of supply may be aggregated by fuel type.

Line 14b—Renewable DG Supply
LSEs are required to show on line 14b amounts of existing and expected renewable energy from DG facilities that can supply other connected loads.

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 15b below.

Line 14c—Renewable Contract 1
Use line 14c to begin listing individual renewable energy contracts. Please state the fuel type first (wind, solar, and so forth), then the contract name. It may be useful to add the supplier name, if different, in parentheses. The contract name (or acronym) should match the comparable listing on Form S-1 and the corresponding Form S-5.

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

Line 14d—Renewable Contract 2
Please state fuel type first, then the contract name. Add lines as needed. Delete lines 14d and 14e, if unused.

Line 14e—Renewable Contract N
Please list any planned renewable contracts last. This should be a specific, named renewable project with an identified location and/or supplier even if permitting or financing is not yet underway. To be listed in this section as a planned resource, contract negotiations or utility planning commitments to such a contract must be well-advanced.

Some renewable energy supply contracts will expire during the forecast period. If the LSE expects to renew or renegotiate a particular contract with the same counterparty, it is appropriate to continue listing specific annual energy values on a new line with an appropriate name and an explanatory footnote.

Line 15a—Total Energy Supply From Other Bilateral Contracts
On the Excel spreadsheet, this line automatically calculates the sum of individual supply resources listed below.

Line 15b—Non-Renewable DG Supply
LSEs are required to show total amounts of existing and expected nonrenewable DG supply that is surplus to the amount the DG customer consumes. Include only amounts of DG energy injected into the distribution system for other end-use customers, amounts that would otherwise be supplied by the LSE.

Line 15c—Other Bilateral Contract 1
Use line 15c to begin listing all other bilateral contracts and power purchase agreements with durations longer than three consecutive months. List all such supplies if they are not reported in earlier sections.

Each bilateral contract should be named and listed on a separate line beginning on line 15c. It may be useful to add the supplier name, if different, in parentheses. The name should match a comparable listing on Form S-1. (If this contract is only for energy supply, such as a heat rate call option, the capacity amounts on Form S-1 will be zero.)

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

Line 15d—Other Bilateral Contract 2
This contract name should also match the contract name at the top of a related Form S-5.

Line 15e—Other Bilateral Contract 3
Add lines as needed. Delete unused lines 15c through 15f.

Line 15f—Other Bilateral Contract N
Please list any planned contracts last. 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 underway. To be listed in this section as a planned resource, contract negotiations or utility commitments to such a contract must be well-advanced.

Many bilateral supply contracts will expire during the forecast period. If the LSE expects to renew or renegotiate a particular contract with the same counterparty, it is appropriate to continue listing specific capacity values on a new line with an appropriate name and an explanatory footnote.

If an expired contract was listed on the S-2 supply form in the previous reporting cycle, please continue to list that supply resource with actual energy supplies in 2013 and 2014. A corresponding Form S-5 is not required for contracts that expired by December 31, 2014.

If an LSE had contracts with durations of more than three months that were not listed on the S-2 supply form in the previous reporting cycle, and if these contracts expired by December 31, 2014, the energy supply amounts can be aggregated on a single line with a name such as "Expired Contracts." A corresponding Form S-5 is not required for these aggregated expired contracts, but a corresponding entry on Form S-1 is expected.

Line 16—Short-Term and Spot Market Purchases
On line 16, list annual energy amounts the LSE expects to procure through short-term or spot market purchases under average or expected conditions. This line is intended to represent a small residual "open position" of end-use customer need.

Short-term purchases are defined here to include all procurement of more than two days duration and less than 92 consecutive days. Spot market purchases are defined here to include all procurement that is two days or fewer in duration.

For 2013 and 2014, provide a total for all short-term and spot market energy purchases as actually occurred during those calendar years.

Energy Balance Summary—Line 17 to 21 Instructions

Line 17—Total Energy From Existing and Planned Resources
On the Excel template, the sum on line 17 is calculated automatically. This line sums existing and planned electricity supply resources counted in earlier sections: line 8a (fossil fuel energy supply), 9a (nuclear), 10a (hydroelectric), 11a (utility-controlled renewables), 13a (QF energy supply), 14a (renewable energy contracts), 15a (other bilateral contracts), and 16 (short-term and spot market purchases).

Line 18—Firm LSE Energy Requirement
On the Excel template, the sum on line 18 is automatically repeated from line 7.

Line 19—Energy Surplus or (Energy Need)
On the Excel template, the difference between line 17 and line 18 is calculated automatically. A negative number indicates a net-open position and will appear in red font on the Excel template. A positive number on line 19 indicates a net-surplus energy position.

On the Energy Balance Accounting Table, Form S-2, the prior year totals of actual energy requirements and actual supplies are expected to balance. Therefore, lines 19, 20, and 21 on the Excel template have been grayed out for calendar years 2013 and 2014.

For future years, a net-open position will be filled by one or more procurement actions, including new bilateral contracts, planned additions for utility-controlled capacity, short-term contracts, and spot market purchases. In some instances, LSEs have committed to specific but yet-to-be-built physical resources. All announced projects with plant names and known physical locations should be listed in earlier sections on utility-controlled or contractual resources.

Line 20—Generic Renewable Energy
On line 20, identify new renewable energy supplies that will be needed to meet adopted renewable energy targets and that the LSE expects to procure. Enter the aggregate amounts of energy reasonably expected from newly added but unspecified renewable resources. All

announced projects with names and locations should be listed in earlier sections on utility-controlled or contractual resources.

The annual energy amounts from generic renewable resource procurement should correlate with the forecast of expected capacity shown on Form S-1 line 24, though this need not be a formulaic or absolute relationship.

Include only energy with all the green attributes thereof (not stripped of renewable energy credits [RECs]), energy that the LSE expects to procure, and energy that is deliverable to its end-use customers. (Deliverability here includes shaping and firming delivery contracts without limit. For additional definitions of deliverability see Appendix B.)

Estimates on line 20 about renewable generation performance should reflect realistic appraisals of likely outcomes from authorizations, solicitations, direct investments, regulatory incentives, and many other decisions too numerous to list here. The obligation and opportunity to acquire new renewable resources vary among different LSEs and across different classes of LSEs (IOUs, CCAs, POUs, and ESPs). With obligations such as these foremost in mind, these instructions do not ask LSEs to anticipate the location, technologies, fuel types, or generating performance attributes likely associated with generic new renewable resources.

Line 21—Generic Non-Renewable Energy

On line 21, enter the amount of all nonrenewable baseload, load-following, and peaking generation needs that LSE reasonably expects to procure during the forecast period.

The totals on line 21 plus amounts on line 20 should always be greater than or equal to any negative amounts shown on line 19 (net open positions).

Electricity Resource Planning Form S-3: 2014 Small POU Hourly Loads

Scope and Purpose

Small POUs are required to report hourly historical load for the previous calendar year according to language in Section 1346 on Electricity Resource Adequacy (California Code of Regulations, Title 20, Division 2, Chapter 3, Article 2). Supply Form S-3 is a much simplified version of Demand Form 1.6a. By filing Form S-3, small POUs are not required to file any of the Demand forms. Each publicly owned LSE with annual peak loads that were less than 200 MW in 2013 and in 2014 is required to complete this form to report hourly loads in 2014.

Actual hourly demand (average energy consumption) should be reported in MW. Begin with the hour that ended at 1 a.m. on January 1, 2014. The time basis should be Pacific Standard Time (PST) throughout the year.

Show the load measured at the balancing area take-out point.

For the "total requirements" LSEs in the California ISO balancing areas, the scheduling coordinator (Western) should report hourly load for each LSE separately (Trinity Public Utility District [PUD], Lassen PUD, and others).

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.

Electricity Resource Planning Form S-5: Bilateral Contracts

Scope and Purpose

This 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 so?
- 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 Balancing Authority Area (control area)?
- Under what general terms does the contract provide dependable capacity for LSEs serving loads in other balancing areas?

Information Format Requirements

All LSEs with existing (current) bilateral contracts or power purchase agreements are required to submit applicable information on Electricity Resource Planning Form S-5. 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 power purchase agreement) that provides capacity in amounts greater than 10 MW.

Sample templates are provided in Excel format. LSEs may provide the required information on one or more tables, or they may report this information on individual S-5 supply forms (on separate tabs for each contract). LSEs with many bilateral supply contracts in their portfolio may choose to aggregate reporting on more than one table (such as for renewable and other supply resources). LSEs that submitted S-5 tables or forms in 2013 may resubmit those tables or forms, appropriately updated.

LSEs requesting confidentiality for certain information about their bilateral contracts and power purchase agreements may find it useful to combine S-5 data and information on one or more tables so the information categories and the Excel file can be clearly marked, identified, and protected as confidential material.

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 one Form S-5 even if delivery periods and specific terms will vary among the contracts.

Please use "Not Specified" or "None" as may be appropriate to the contract terms.

Contracts Covered and Not Covered by This Requirement

All LSEs are required to provide a few standard types of information regarding existing (current) bilateral contracts or power purchase agreements that have been signed with suppliers of capacity and/or energy. This requirement includes signed contracts for supplies that are not yet being delivered or from generating facilities that are not yet on-line. This 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 and shown on an individual Form S-5. There are seven exceptions to this requirement:

- QF contracts
- Aggregations of supply contracts, each of which is less than 1 MW
- Contracts that expired prior to January 1, 2015
- Supplemental or related contracts for the shaping and/or firming of wholesale energy delivered to the LSE
- Contracts for the purchase of RECs without energy
- Contracts for ancillary services, for balancing authority services, or for transmission services; this exception includes agreements that may include terms related to energy procurement to compensate for transmission losses

Line-by-Line Instructions

Contract Name
Provide the name given to the bilateral contract or power purchase agreement as shown on Form S-1 and Form S-2.

Supplier/Seller
Name the contracted supplier, producer, or seller of energy and/or capacity that may be identical to the Contract Name. The supplier or seller's name is usually the counterparty name on the contract or agreement.

Start Date
State the initial delivery date of the energy and/or capacity product(s) being purchased. If this is contingent upon future actions by parties, or market conditions, or other future events, this should be stated or explained in notes appended to the form.

Expiration Date
Provide the date for final 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 in notes appended to the form. Information regarding the ability of one party to unilaterally terminate the contract after its inception should be entered under Performance Requirements and Termination/Extension Clauses and Rights, or in notes appended to the form.

Contract/Agreement Capacity (MW)
For each contract or agreement, list the NQC[8] or dependable capacity (for LSEs outside the California ISO balancing area). (Note: An NQC estimate on these forms does not constitute a commitment to make that resource available to the California ISO.)

If the available MW varies over time, this variation should be described under Availability below. If capacity that will be available to the LSE is determined somewhere other than the busbar nearest a named generator, name that location.

Scheduling Coordinator
For each contract or agreement, specify which party will serve as scheduling coordinator (which may not be specified for LSEs outside the California ISO balancing area).

Fuel Type
If the contract identifies a specific generating unit, identify the primary fuel used for generation. If dual fuels or hybrid fuels are used or likely to be used, identify the proportions expected to be used in meeting contract obligations.

Delivery Points
First, identify the balancing area and transmission zone to which energy can be delivered (for example, California ISO NP 15). Second, name the point(s) at which energy can be delivered to substation or bus (for example, Tracy or Lugo substation). If there are multiple delivery points, indicate whether buyer or seller has the option.

Locational Attributes of Unit
First, identify the balancing area and transmission zone if the contract identifies a specific generating unit. Second, identify more specific locational attributes such as load pocket, subpocket, and city.

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8 The most recent NQC values are posted by the California ISO at http://www.caiso.com/Documents/Final2015NetQualifyingCapacity_RAResources.htm.

Contract/Agreement Products
Indicate the commodity and service products for which delivery is being contracted. Examples include tolling agreement, forward energy purchase, seasonal energy exchange, qualifying capacity to meet resource adequacy requirements, a physical call (or put) option for capacity or energy, a financial call (or put) option, other market-contingent products, structured transactions (combining one or more product types, varying expiration dates, tiered prices, and so forth), and ancillary services.

Availability of Products
Indicate periods during which product will be available. Examples include:

- 7x16 (5,840 hours per year).
- 6x16 (Monday-Saturday, 6 a.m.-10 p.m., excluding the 6 NERC holidays).
- Q3, 7 x 8 (third quarter, 7 days a week), 1 p.m. to 8 p.m.
- Months 5-10, max 50 hours/month, (May-October, up to 50 hours per month).
- 100 MW off-peak (year-round, all hours not covered by 6x16).

Describe any limitations on the LSE related to scheduling or dispatch for the contract products during the contract period. Identify any contingent or residual obligations related to availability of contract products. For example, if the contract product is used for year-ahead resource adequacy reporting, to what extent must these products be made available to the California ISO?

Must-Take
If applicable, indicate must-take characteristics of the contract. Examples include:

- Yes (for energy contract, all energy indicated jointly by MW and availability).
- Minimum 30,000 MWh monthly.

Generating Units Specified
Name or describe all power plants and/or generating units identified in the contract. If the supplier will provide energy from a portfolio of resources, identify each resource and proportion of energy that each is likely to contribute on an annual basis.

Capacity of the Units
For each power plant identified in the contract, list the maximum qualifying capacity (preferred) or dependable capacity (for LSEs outside the California ISO balancing area).

Availability of the Units
Describe any limitations on LSE scheduling or dispatch of the units during the contract period. If this is a unit-contingent contract, indicate what rights the buyer has to dispatch the units.

Identify any contingent or residual obligations on the buyer related to availability of the units. For example, if the generating units will be used for demonstrating year-ahead local or month-ahead system resource adequacy, to what extent must these units be made available to the California ISO? Enter "same as availability of contract products," if true.

Unit Contingent/LD Contract
LSEs are required to distinguish between supplies from specifically named generating units and those supplies that are "portfolio" or "system power." If delivery is contingent upon the availability of a specific unit or units, enter "unit contingent" and name the indicated power plant or unit(s).

If supplies are required to be delivered from a portfolio of physical assets under the control of the counterparty, enter "portfolio" and provide an appropriate description or reference.

If the contract states a preference for a particular unit when it is available and requires the seller to provide backup power from unspecified sources, enter "unit contingent with firming" and describe the obligation on the seller.

If the contract allows the seller to optimize economic dispatch, or does not specify the generating sources to be used, enter "system power."

Firm
Yes/No. "Yes" indicates that seller can only fail to provide replacement power under force majeure provisions or to avoid involuntary load curtailments in another balancing area.

"No" indicates nondelivery may occur for other reasons, such as market conditions or transmission congestion. Contracts without firm delivery requirements typically include provisions for liquidated damages. Add comments if appropriate to clarify.

Firming or Shaping
Describe the contract terms that allow for or require acceptance (taking ownership) of real-time power production and the subsequent transmission or delivery of purchased power during different periods. This information category was added in 2012 and reflects the importance of arrangements that facilitate procurement of firm capacity concomitant with procurement of renewable energy from sources that may be intermittent, nondispatchable, and otherwise difficult to predict and schedule. Firming and shaping contracts also facilitate efficient use of transmission resources and contribute positively to system reliability of balancing authority areas.

If a firming and shaping contract is separate from a power purchase contract, that distinction should be noted, but the delivery requirement should nonetheless be summarized here. If contracts do not include terms for firming or shaping, enter "None."

Contract/Agreement Type
Enter the mechanism used to determine energy payments under the contract. This may be a fixed price contract ("fixed"), a "tolling agreement," an "exchange agreement," or some other type. If the supply is an energy exchange agreement, describe the return requirements in the notes.

Transmission Contingent and Path
Please enter "contingent" if the seller was assumed to have control of transmission rights, or if the seller will be required to demonstrate such as a condition of the contract. If transmission will be provided by seller, specify typical paths.

If seller was not and will not be required to demonstrate control of capacity and transmission rights as a condition of the contract, enter "no."

Termination and Extension Rights
LSEs should indicate which party or parties have the right to unilaterally terminate or extend the contract (for reasons other than nonperformance of the other party).

For termination rights, indicate the possible termination dates, notification requirements, and allowable circumstances. For example, "Seller may terminate on January 1 of each year beginning 1/1/2017 with 90 days prior notice."

For extension rights, indicate the possible extension dates, length of extension, notification requirements, and allowable circumstances. For example, "From 7/1/2015 until 1/1/2018, buyer may extend contract for 6 months with 30 days prior notice, provided that energy purchases have exceeded 80,000 MWh in each of the three preceding calendar quarters."

Performance Requirements
Indicate circumstances under which buyer can terminate contract for non-performance. For example, "Buyer may terminate contract for non-performance if wind energy delivered at the busbar fails to meet at least 80 percent of specified targets for each of three consecutive quarters. Thirty days notice is required."

Notes
Include any clarifying or explanatory statements required or considered appropriate.

Publicly Owned Utility Resource Adequacy

Summary and Context

Assembly Bill 380 (Núñez, Chapter 367, Statutes of 2007) (AB 380), created Public Utilities Code Section 9620. It requires local POUs to undertake and accomplish certain resource adequacy protocols. AB 380 assigned the Energy Commission with responsibilities to oversee these activities and to periodically report to the Legislature via the biennial *IEPR*. To accomplish this requirement, the Energy Commission is authorized to collect resource adequacy data from each POU.

A generalized process to collect such data, implementing this aspect of AB 380, was included in regulations that were adopted in mid-2007.[9] For the *2007 IEPR*, Energy Commission staff embarked on a collaborative project with POUs in advance of a formal rulemaking. A statewide summary with a description of the continuing progress by each POU to remain resource adequate was published as a final staff report in May 2012 and is posted at http://www.energy.ca.gov/2007publications/CEC-200-2007-016/CEC-200-2007-016-SF.PDF. These filings are not being required for the *2015 IEPR*.

Energy Commission data regulations exempt "small" LSEs from most of the data reporting requirements associated with the biennial *IEPR*.[10] Small LSEs are exempt from filing 10-year resource plans that show supply and demand balances. This exemption, however, depends on an expectation that small LSEs will provide the resource adequacy data and information required by the Energy Commission.

Background and Previous Data Collection

Resource adequacy activities have been underway in California since the California ISO's initial proposal surfaced as part of its Market Design 2002 (MD02) in early 2002. A broader proposal from FERC surfaced in 2003, which ignited strong opposition from northwestern and southeastern states and from congressional representatives. FERC agreed to allow states to establish resource adequacy requirements.

The CPUC established key dimensions of a resource adequacy program for IOUs, CCAs, and ESPs under its jurisdiction in D.04-01-050, D.04-10-035, D.05-10-042, D.06-06-064, D.06-07-031, and D.08-06-031.[11] The California ISO established some elements of these

9 California Code of Regulations, Title 20, Article 2, Section 1346 on Electricity Resource Adequacy.

10 California Code of Regulations, Title 20, Article 2, Section 1350 on Exemptions.

11 For an authoritative history of the resource adequacy program administered by the CPUC see http://www.cpuc.ca.gov/PUC/energy/Procurement/RA/ra_history.htm.

requirements as tariff requirements for POUs within its balancing area, established through its Interim Reliability Requirements Program (IRRP) which was approved by FERC order dated May 12, 2006.

Because there were some questions about the CPUC's authority to establish resource adequacy requirements for ESPs, legislative proposals concerning resource adequacy were adopted in AB 380, statutes of 2005, confirming CPUC jurisdiction over all LSEs (including ESPs) that operate in IOU distribution service areas. A companion provision in AB 380 established an oversight role for the Energy Commission regarding POU resource adequacy activities.

Beginning in February 2006, resource adequacy requirements became functional for the IOUs and ESPs in the California ISO balancing area. Filing requirements applying to POUs were approved in May 2008. All types of LSEs in the California ISO balancing area must now meet the same basic month-ahead and year-ahead filing requirements. However, POUs retain some discretion under the California ISO's IRRP tariff in three areas:

- For establishing a planning reserve margin (if different than a 15 percent planning reserve margin).
- For adopting other counting conventions for qualifying capacity (if different than those specified in the IRRP tariff).
- For choosing a demand forecast method.

Consequently, there is still a diversity of approaches to resource adequacy among different classes of LSEs in the California ISO balancing area.

Scope and Purpose of Regulatory Oversight

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

All POUs, without regard to the balancing areas in which they serve load, are directed by AB 380 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. Several large and small POUs in California are located in seven balancing areas outside the California ISO balancing area.[12]

Large LSEs (with annual peak loads greater than 200 MW) are required to provide 10-year resource plans covering 2015 through 2024. 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 2015, along with some long-term assessments of supply trends for the large POUs.

More specific questions about resource adequacy may be directed to Jim Woodward at Jim.Woodward@energy.ca.gov or (916) 654-5180, and to John Hingtgen at John.Hingtgen@energy.ca.gov or (916) 657-4046.

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12 By size of combined POU loads, these seven balancing areas and their associated publicly owned utilities are:

LADWP (LADWP, Glendale, and Burbank);

BANC, the Balancing Authority of Northern California (Sacramento Municipal Utility District, Modesto Irrigation District, Roseville, Redding, Shasta Lake, and most of Trinity PUD);

Imperial Irrigation District;

Turlock (Turlock and Merced Irrigation Districts);

PacifiCorp (Surprise Valley [a rural electric cooperative]);

Sierra Pacific (Truckee Donner PUD); and

WALC, the Western Area Lower Colorado balancing area, operated by the Desert Southwest Region of Western Area Power Administration (City of Needles).

ACRONYMS

ACRONYM	DEFINITION
LSE	Load serving entity
IOU	Investor-owned utility
IEPR	*Integrated Energy Policy Report*
POU	Publicly owned utility/Publicly owned electric utility
MW	Megawatt
CCA	Community choice aggregator
ESP	Electric service provider
California ISO	California Independent System Operator
DG	Distributed generation
CPUC	California Public Utilities Commission
UFE	Unaccounted for energy
SCE	Southern California Edison Company
MWD	Metropolitan Water District of Southern California
NSHP	New Solar Homes Partnership
CSI	California Solar Initiative
SGIP	Self Generation Incentive Program
PG&E	Pacific Gas and Electric Company
SDG&E	San Diego Gas & Electric Company
DR	Demand response
LTPP	Long Term Procurement Plan
D.	Decision
LADWP	Los Angeles Department of Water and Power
BPA	Bonneville Power Administration
USBR	United States Bureau of Reclamation
CDWR/DWR	California Department of Water Resources
QF	Qualifying facility
PURPA	Public Utilities Regulatory Policy Act
NCPA	Northern California Power Agency
DSM	Demand-side management
GWh	Gigawatt-hour
EE	Energy efficiency
FERC	Federal Energy Regulatory Commission
SWRCB	State Water Resources Control Board
REC	Renewable Energy Credit
PST	Pacific Standard Time
PUD	Public Utility District
AB 380	Assembly Bill 380
IIRP	Interim Reliability Requirements Program
NAICS	North American Industry Classification System
AB 1576	Assembly Bill 1576

APPENDIX A:
Confidentiality Applications Instructions

How to Request Confidentiality

The Executive Director of the Energy Commission has 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 whether the information can be released in aggregated form.

Certain categories of data provided to the Energy Commission, 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 California Code of Regulations, Title 20, Section 2505(a)(5). The Energy Commission has its own regulations distinct from those governing the CPUC, and CPUC determinations on confidentiality are not applicable to data submitted to the Energy Commission.

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

- For individual ESPs, data may be aggregated at the statewide level by major customer sector.
- For the sum of all ESPs, 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 their North American Industry Classification System (NAICS) tables.

Data that are not included in these categories, but that the filer believes are entitled to confidential treatment, should be submitted when due along with an application for confidential designation so that the Executive Director can review the information and make a determination about its confidential status. To do this, please carefully read and follow the instructions.

What a Confidentiality Application Must Have

An application to keep a record confidential should be submitted directly to the Docket Unit in paper form or on electronic media, but not be email.

Docket Unit
California Energy Commission
1516 Ninth Street, MS-4
Sacramento, CA 95814-5504

A hard copy of the record for which confidentiality is sought must be submitted, on separate electronic media if electronic, each marked with the title of the record and "confidential" (§ 1209.5 subd. (a)(4). An optional Application for Confidentiality form, which includes all the required elements of the application, can be found at http://www.energy.ca.gov/commission/chief_counsel/documents/CEC13.pdf.

- The information being provided to the Energy Commission must be submitted electronically in Word©, Excel or Adobe© files and on a common media format such as CD-ROM or DVD-ROM. This information should be marked electronically and externally as Docket #15-IEPR-02. The prospective confidential data categories must be clearly and properly labeled and referenced in the written application. Each IEPR topic area has its own subdocket; electricity resource plans are filed in subdocket "02". (Note in past reporting cycles subdocket "B" was used to file electricity resource plans.)

Table A-1: 2015 IEPR Subdockets

15-IEPR-01	General/Scope
15-IEPR-02	Electricity Resource Plans
15-IEPR-03	Electricity and Natural Gas Demand Forecast

Source: California Energy Commission, October 2, 2014.

- A signed "penalty of perjury certification" must be included in the application. Suggested standard 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).

What Happens if an Application Is Deficient

Applications deemed incomplete may not be docketed by Energy Commission staff and may result in delay in processing until the deficiency can be corrected. The filer will be notified by mail and email about deficient attributes in the application. The applicant has 14 calendar days to correct defects in the application and return an amended application to the Energy Commission.

After 14 days, all information associated with a still–incomplete application for confidentiality will be deemed publicly disclosable and will be docketed accordingly.

What a Confidentiality Application Must Include

A complete application for confidentiality contains the following information:

- 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 Excel 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, 2017).
- An appropriate justification for each confidential data category request, including applicable provisions of the California Public Records Act (Government Code Section 6250 et seq.) and/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 an Application Is Incomplete

Applications that have been docketed will be reviewed by Energy Commission 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 these uncertainties or obtain needed information.

Staff may append data and information to the supply forms as requested by the filer. Also, an updated or corrected Excel file may be forwarded by the filer to Energy Commission staff as necessary. Where an application is unclear or incomplete, a filer may submit a corrected replacement application for confidentiality. By arrangement, a corrected application (still including the required three attributes) may be submitted electronically to the Docket

Office. Once a docketed application is considered complete, staff prepares a recommendation for determinations by the Executive Director.

Determinations and Additional Information

The Executive Director signs confidentiality determination letters. The applicant has 14 calendar days to appeal this decision.

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

More specific questions about confidentiality may be directed to Jared Babula at Jared.Babula@energy.ca.gov or (916) 654-3843.

APPENDIX B:
Data Collection Public Purposes

General Purposes, Assumptions, and Considerations

General Purposes and Authorities

These forms and instructions provide the Energy Commission with a better understanding of LSE planning assumptions and resource adequacy commitments. From this information, the Energy Commission will assess current conditions in electric generation system infrastructure and identify major statewide trends affecting electricity supply and reliability.

The Energy Commission 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." The S-1 and S-2 supply forms are designed to collect these categorical and quantitative descriptions of forecast LSE electricity supplies. While Section 1347 refers to "each LSE" being subject to an Energy Commission 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 purposes, 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 Energy Commission 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 2014 on Supply Form S-3. All LSEs are required to report their historical annual peak demand. These data are to be reported on Supply Form S-1 for 2013 (the most recent year when these instructions are scheduled for adoption) and for 2014 (which will be the most recent year when the forms are due from LSEs). All LSEs are also required to report on Supply Form S-2 how annual customer demand in 2013 and 2014 was served by the LSE's supply resources. This information will be used to assess (as well as forecast) energy supply as authorized by Public Resources Code (PRC) 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 medium and large utilities are required to identify new and existing capacity that will be needed to meet forecasted end-use loads over the next 10 years through 2024. The continued need for existing utility-owned generation, along with potential retirement and repowering possibilities, will be part of this demonstration.

Medium and large ESPs are required to identify how their contractual obligations to direct access customers will be met over the next five years through 2019. 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). This amount is included on the Excel template for Form S-1, line 8. This 15 percent planning reserve margin is appropriate for 10-year resource plans. 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 Energy Commission.

Some POUs have adopted a higher 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 all 10 years in the planning horizon.

None of the ESPs and very few utilities can afford to secure all the generating resources needed to meet forecasted loads for the next 10 years. In the resource plans that are due in early 2015, most large LSEs will have open positions by 2024 for capacity to meet their annual peak loads. A standardized application of the 15 percent planning reserve margin allows the open positions of individual 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 the S-1 form. 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 (balancing area) coincident peak-hour demand.

For LSEs in the California ISO balancing area, year-ahead and month-ahead resource adequacy filings carry with them two significant regulatory obligations. One involves penalties for inadequate procurement, including the cost of backstop purchasing by the California ISO. The second involves a commitment by LSEs to make resources available to the California ISO. With appropriate exclusions and conditions, once a resource is listed in the resource adequacy filings, if that resource is not scheduled by the LSE in the day ahead, it must be made available to the California ISO for grid reliability or for sales within markets administered by the California ISO. Listing a resource in the 10-year resource plans submitted to the Energy Commission carries no such operational obligations or potential penalties.

Loading Order Considerations

As with data submittal requirements for past *IEPRs*, 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 loading order is not to be confused with scheduling and dispatch order preferences. For example, demand response is high in the loading order, but dispatchable demand response, interruptible and emergency options, herein considered a supply resource, are obviously low in the priorities for day-ahead scheduling and real-time dispatch. LSEs are not asked to comment directly on the decision criteria or analytical methods that were part of establishing loading order targets.

The resource plan is meant to be a practical guide based upon reasonable expectations, limitations, and contingencies as currently known. LSEs are expected to meet service obligations at reasonable cost, to generate within environmental permits, and to 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 particular loading order 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.

The resource plans can be used to demonstrate the extent to which LSEs expect to meet or exceed particular program goals. As such, the estimated numbers depicted here may serve as a useful measure of expected results given everything currently known about technical capabilities, market incentives, regulatory constraints, statutory mandates, economic conditions, and policy guidance. Some programmatic goals are general and not yet quantified; other goals may not be tied to specific locations. For example, some legislation does not prescribe or proscribe specific procurement actions, such as the AB 1576 (Núñez, Reimbursement Procedures, Statutes of 2007) encouragement to repower older plants. Another nonprescriptive loading order preference is for utilities to simultaneously consider transmission and generation alternatives.

Definitions and Aggregated Data

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 facilitate a general evaluation of statewide supply adequacy. This evaluation includes some limited assessments of coincident peak supply needs within specific balancing areas, primarily that of the California ISO.

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

Existing resources are generating resources that are on-line and available to the LSE, including all power purchase agreements.

Planned resources are those that an LSE deems either most likely or most preferred as additions to the portfolio. For IOUs, planned resources are those specific facilities and signed power purchase agreements or facility construction contracts, including those not yet formally approved by the CPUC. For other LSEs, planned resources include signed agreements, approved contracts, and supplies for which the LSE has a reasonable expectation of commitment. Such reasonable expectation would include the name, fuel type, and location for planned utility-owned resources, and other attributes to be reported on a Form S-5 for planned contractual resources. The listing of planned resources should reflect the most probable long-term resource plan for an LSE and its preferred "loading order,"[13]

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13 For example, the *2003 Energy Action Plan* adopted the following loading order: First, the agencies want to optimize all strategies for increasing conservation and energy efficiency to minimize increases in electricity and natural gas demand. Second, recognizing that new generation is both necessary and desirable, the agencies would like to see these needs met first by renewable energy resources and distributed generation. Third, because the preferred resources require both sufficient investment and adequate time to "get to scale," the agencies also will support additional clean, fossil

especially where an LSE must add new resources to accommodate forecast load growth or capacity retirements.

Generic resources include generating resources needed to serve forecast demand, including utility-owned facilities and power purchase agreements, and that are not specifically identified at this time by resource type or location.

Hydroelectric generation is considered to be an existing resource for the duration that an LSE has legal authority to integrate production of forecast energy and dependable capacity. After the expiration date of a FERC hydro license or operating agreement or integration agreement, it would be a planned resource if the LSE expects to retain it in its portfolio.

The term "planned resources" can include physical and contractual resources about which there is considerable uncertainty due to regulatory, financial, or legislative risks. For example, the need for regulatory approvals and permits might keep a specific planned resource from becoming a committed resource for many months.[14]

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.

Integration means the ability of an LSE or balancing authority (balancing area authority) to use the generation output of facilities to serve load or balance the grid. The rights and obligations to integrate the output from cogeneration, wind, and "run-of-river" hydro are typically detailed in contractual agreements. (Cogeneration is synonymous with combined heat and power or CHP.) Special integration concerns often exist for resources like these that are not dispatched by LSEs, especially those that operate intermittently, are difficult to predict or schedule day-ahead, or that do not have an obligation to be available.

A more complete set of definitions may be found in the California Energy Commission's regulations governing data collection for the *Integrated Energy Policy Report* (Title 20, California Code of Regulations, Section 1301 et seq. and 1340 et seq.), regulations

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fuel, central-station generation. Simultaneously, the agencies intend to improve the bulk electricity transmission grid and distribution facility infrastructure to support growing demand centers and the interconnection of new generation.

14 The distinction between planned and committed resources was important in past *Electricity Reports* (such as *ER 1994*); this distinction is not important for data collection for the *2015 IEPR*. What is important, however, is the distinction between planned resources with specific, reportable attributes and generic resources that are more conjectural.

implementing the Energy Commission's complaint and investigation process (Title 20, California Code of Regulations, Section 1230 et seq.), and regulations governing the disclosure of Energy Commission records Title 20, California Code of Regulations, Section 2501 et seq.). The definitions are found in Chapter 3, Article 1, Section 1302.

Deliverability means electricity resources must be available to the respective LSE load centers, including transmission rights as needed. To be fully counted as existing or planned resources, each LSE is expected to perform deliverability screening, filtering, or other appropriate criteria for matching loads with resources. However, the disclosure of these criteria is not requested on these forms.

Aggregated Data

As a general requirement, each supply resource should have a line-item entry on Forms S-1 and S-2. In general, each nuclear and fossil generating unit should be listed on a separate line on Forms S-1 and S-2. Renewable supplies will usually be aggregated at the plant or project level on these forms.

All micro-supply contracts supplying less than 1 MW may be aggregated by fuel type, resource type, or program type. Also, all programmatic adjustments to forecast load should be aggregated on one line for that program, such as demand response/interruptible programs, self-generation, and the CSI. The exception to this general guidance is that DG data should be aggregated into three distinct categories: customer self-supply that constitutes a reduction in forecast load, and DG supply to the LSE that is surplus to customer needs from renewable or and nonrenewable fuel technologies.

Utilities should report utility-controlled hydroelectric assets (other than qualifying facilities) in two aggregate categories: more than 30 MW nameplate, and less than or equal to 30 MW. IOUs should aggregate QF contractual resources by technology or fuel types (for example, biofuels, geothermal, small hydro, solar, wind, natural gas/cogeneration, and other).

APPENDIX C:
Electricity Supply Resource Plans

State of California
California Energy Commission
ELECTRICITY RESOURCE PLANNING FORMS
CEC Form S-1: Capacity Resource Accounting Table (issued 12/2014)

Data input by User are highlighted with the dark green font
2016 MW numbers are illustrative.
Bold font cells sum automatically.
Yellow fill relates to an application for confidentiality.

LSE Name on Admin Tab

Line	Capacity Resource Accounting Table (MW)	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	PEAK LOAD CALCULATIONS	(Prior Forecasts)		(Forecast Supply)									
1	Forecast Total Peak-Hour 1-in-2 Demand			7,500									
2a	ESP Peak Load: Existing Customer Contracts												
2b	ESP Peak Load: New and Renewed Contracts												
2c	ESP Peak Load in PG&E service area												
2d	ESP Peak Load in SCE service area												
2e	ESP Peak Load in SDG&E service area												
3	Additional and Achievable Energy Efficiency (-)												
4	Demand Response / Interruptible Programs (-)			(100)									
5	**Adjusted Peak-Hour Demand: End-Use Customers**	**0**	**0**	**7,400**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
6	Coincidence Adjustment (-)			(50)									
7	**Coincident Peak-Hour Demand**	**0**	**0**	**7,350**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8	Required Planning Reserve Margin	0	0	1,103	0	0	0	0	0	0	0	0	0
9	Credit for Imports That Carry Reserves (-)			7									
10	Firm Sales Obligations												
11	**Firm LSE Peak-Hour Resource Requirement**	**0**	**0**	**8,460**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	CAPACITY SUPPLY RESOURCES												
12a	**Total Fossil Fuel Dependable Capacity**	**0**	**0**	**2,200**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
12b	[state fuel, then list each resource, e.g., Fossil Unit 1]			1,000									
12c	[fuel: Fossil Unit 2]			750									
12d	[fuel: Fossil Unit N, list planned resources last]			450									
13a	**Total Dependable Nuclear Capacity**	**0**	**0**	**1,000**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
13b	[Nuclear Unit 1]			500									
13c	[Nuclear Unit 2]			500									
14a	**Total Dependable Hydroelectric Capacity**	**0**	**0**	**1,000**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
14b	Total: Hydro Plants larger than 30 MW			900									
14c	Total: Hydro Plants 30 MW or less			100									
15a	**Total Utility-Controlled Renewable Capacity**	**0**	**0**	**400**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
15b	[state fuel, then list each resource, e.g., Renewable Plant 1]			250									
15c	[fuel: Renewable Project 2]			130									
15d	[fuel: Renewable Project N, list planned resources last]			20									
17a	**Total Qualifying Facility (QF) Capacity**	**0**	**0**	**800**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
17b	Biofuels			100									
17c	Geothermal			300									
17d	Small Hydro			50									

State of California
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ELECTRICITY RESOURCE PLANNING FORMS
CEC Form S-1: Capacity Resource Accounting Table (issued 12/2014)

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Yellow fill relates to an application for confidentiality.

Line	**Capacity Resource Accounting Table (MW)**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
17e	Solar			50									
17f	Wind			50									
17g	Natural Gas			200									
17h	Other			50									
18a	**Total Capacity from Renewable Energy Contracts**	**0**	**0**	**750**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
18b	Renewable DG Supply			50									
18c	[state fuel, then Renewable Contract 1 (Supplier Name)]			350									
18d	[fuel: Renewable Contract 2 (Supplier Name)]			200									
18e	[fuel: Renewable Contract N, list planned resources last]			150									
19a	**Total Capacity from Other Bilateral Contracts**	**0**	**0**	**1,175**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
19b	Non-Renewable DG Supply			50									
19c	[state fuel if known, then name Other Bilateral Contract 1]			450									
19d	[Other Bilateral Contract 2 (Supplier Name)]			350									
19e	[Other Bilateral Contract 3 (Supplier Name)]			250									
19f	[Other Bilateral Contract N (Supplier Name)]			75									
20	**Short-Term and Spot Market Purchases**			50									
	CAPACITY BALANCE SUMMARY												
21	**Total: Existing and Planned Capacity**	**0**	**0**	**7,375**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
22	Firm LSE Peak-Hour Resource Requirement	**0**	**0**	**8,460**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
23	**Capacity Surplus or (Capacity Need)**	**0**	**0**	**(1,085)**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
24	Generic Renewable Resources			25									
25	Generic Non-Renewable Resources			60									
26	Specified Planning Reserve Margin			15%									

Line	**Historic LSE Peak Load:**	**MW Year 2013**	**MW Year 2014**
27	Annual Peak Load / Actual Metered Deliveries		
28	Date of Peak Load for Annual Peak Deliveries	/13	/14
29	Hour Ending (HE) for Annual Peak Deliveries		
30	Interruptible Load called on during that hour (+)		
31	Self-Generation and DG Adjustments		
32	Adjustments for Major Outages		
33	Adjusted Annual Peak Load	**0.0**	**0.0**

Line	**Notes**
x	
x	

State of California
California Energy Commission
ELECTRICITY RESOURCE PLANNING FORMS

CEC Form S-2: Energy Balance Table (issued 12/2014)

LSE Name on Admin Tab

Data input by User are highlighted with the dark green font

2016 GWh numbers are illustrative.

Bold font cells sum automatically.

Yellow fill matches an application for confidentiality.

Line	**Energy Balance Table (GWh)**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
	ENERGY DEMAND CALCULATIONS	(Actual Supply)		(Forecast Supply)									
1	Forecast Total Energy Demand / Consumption				40,000								
2a	ESP Energy Demand: Existing Customer Contracts												
2b	ESP Energy Demand: New and Renewed Contracts												
2c	ESP Energy Demand in PG&E service area												
2d	ESP Energy Demand in SCE service area												
2e	ESP Energy Demand in SDG&E service area												
3	Additional and Achievable Energy Efficiency (-)												
4	Demand Response / Interruptible Programs (-)				(200)								
5	**Adjusted Energy Demand / Consumption**	0	0	0	**39,800**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
6	Firm Sales Obligations				0								
7	**Firm LSE Energy Requirement**	**0**	**0**	**0**	**39,800**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	ENERGY SUPPLY RESOURCES												
8a	**Total Fossil Energy Supply**	**0**	**0**	**0**	**15,000**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8b	[state fuel, then list each resource, e.g., Fossil Unit 1]				8,000								
8c	[fuel: Fossil Unit 2]				4,000								
8d	[fuel: Fossil Unit N, list planned resources last]				3,000								
9a	**Total Nuclear Energy Supply**	**0**	**0**	**0**	**7,000**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
9b	[Nuclear Unit 1]				3,500								
9c	[Nuclear Unit 2]				3,500								
10a	**Total Hydroelectric Energy Generation**	**0**	**0**	**0**	**1,500**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
10b	Total Energy: Hydro Plants larger than 30 MW				1,400								
10c	Total Energy: Hydro Plants 30 MW or less				100								
11a	**Total Utility-Controlled Renewable Energy**	**0**	**0**	**0**	**1,000**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
11b	[state fuel, then list each resource, e.g., Renewable Plant 1]				400								
11c	[fuel: Renewable Project 2]				350								
11d	[fuel: Renewable Project N, list planned resources last]				250								

State of California
California Energy Commission
ELECTRICITY RESOURCE PLANNING FORMS
CEC Form S-2: Energy Balance Table (issued 12/2014)

Data input by User are highlighted with the dark green font
2016 GWh numbers are illustrative.
Bold font cells sum automatically.
Yellow fill matches an application for confidentiality.

Line	Energy Balance Table (GWh)	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
13a	**Total Energy Supply from QF Contracts**	**0**	**0**	**0**	**4,000**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
13b	Biofuels				300								
13c	Geothermal				1,200								
13d	Small Hydro				400								
13e	Solar				450								
13f	Wind				400								
13g	Natural Gas				1,200								
13h	Other				50								
14a	**Total Energy Supply from Renewable Contracts**	**0**	**0**	**0**	**5,750**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
14b	Renewable DG Supply				300								
14c	[state fuel, then Renewable Contract 1 (Supplier Name)]				3,500								
14d	[fuel: Renewable Contract 2 (Supplier Name)]				1,800								
14e	[fuel: Renewable Contract N, list planned resources last]				150								
15a	**Total Energy Supply from Other Bilateral Contracts**	**0**	**0**	**0**	**2,665**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
15b	Non-Renewable DG Supply				140								
15c	[state fuel if known, then name Other Bilateral Contract 1]				1,100								
15d	[Other Bilateral Contract 2 (Supplier Name)]				850								
15e	[Other Bilateral Contract 3 (Supplier Name)]				450								
15f	[Other Bilateral Contract N (Supplier Name)]				125								
16	**Short Term and Spot Market Purchases**				2,300								

	ENERGY BALANCE SUMMARY												
17	**Total Energy: Existing and Planned Resources**	**0**	**0**	**0**	**39,215**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
18	**Firm LSE Energy Requirement**	**0**	**0**	**0**	**39,800**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
19	**Energy Surplus or (Energy Need)**				**(585)**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
20	Generic Renewable Energy				0								
21	Generic Non-Renewable Energy				135								

Line	Notes
x	
x	

State of California
California Energy Commission
ELECTRICITY RESOURCE PLANNING FORMS
CEC Form S-3: 2014 SMALL POU HOURLY LOADS (Issued 12/2014)

LSE Name on Admin Tab

For Publicly Owned LSEs with Annual Peak Loads under 200 MW not submitting demand forms
Scheduling coordinators reporting load for multiple LSEs should report load for each entity separately.

Report actual hourly demand in calendar year 2014, in megawatts, for each hour of each day.
Begin with the hour that ended at 1 a.m. on January 1, 2014.
Show the load measured at the balancing authority load take-out point (or points).
Add columns for any additional metered take-out points.
The time basis should be Pacific Standard Time (PST) throughout the entire year.
Scheduling Coordinators should report demand for each utility within a SCID separately.

Note: This form is a truncated version for printing and review purposes.

Date (PST)	Hour Ending (PST)	Recorded Demand at Take Out (MW)
1/1/2014	1	
1/1/2014	2	
1/1/2014	3	
1/1/2014	4	
1/1/2014	5	
1/1/2014	6	
1/1/2014	7	
1/1/2014	8	
1/1/2014	9	
1/1/2014	10	
1/1/2014	11	
1/1/2014	12	
1/1/2014	13	
1/1/2014	14	
1/1/2014	15	
1/1/2014	16	
1/1/2014	17	
1/1/2014	18	
1/1/2014	19	
1/1/2014	20	
1/1/2014	21	
1/1/2014	22	
1/1/2014	23	
1/1/2014	24	

State of California
California Energy Commission
ELECTRICITY RESOURCE PLANNING FORMS
CEC Form S-5: Bilateral Contracts Table (issued 12/2014)

LSE Name on Admin Tab

Yellow pattern cells are used to apply for confidentiality.

Page 1 of 3

Contract Name:	Supplier/ Seller:	Start Date:	Expiration Date:	NQC or Dependable MW Under Contract:	Scheduling Coordinator:	Fuel Type:	Delivery Points (BAA /Zone):	Delivery Points (Load Pocket/Sub-station):	Locational Attributes of Unit (BAA/Zone):

State of California
California Energy Commission
ELECTRICITY RESOURCE PLANNING FORMS
CEC Form S-5: Bilateral Contracts Table (issued 12/2014)

LSE Name on Admin Tab

Yellow pattern cells are used to apply for confidentiality.

Page 2 of 3

Locational Attributes of Unit (Load Pocket/Substation):	Contract / Agreement Products:	Availability of Products:	Must Take:	Generating Units Specified:	Nameplate MW of the Units	Availability of the Units:	Unit Contingent/ LD Contract:

State of California
California Energy Commission
ELECTRICITY RESOURCE PLANNING FORMS
CEC Form S-5: Bilateral Contracts Table (issued 12/2014)

LSE on Admin Tab

Yellow pattern cells are used to apply for confidentiality.

Firm:	Firming or Shaping:	Contract/ Agreement Type:	Transmission Contingent & Path:	Termination & Extension Rights:	Performance Requirements:	Notes (1):	Notes (2):

State of California

California Energy Commission

ELECTRICITY RESOURCE PLANNING FORMS
CEC Form S-5: Bilateral Contracts (issued 12/2014)

LSE Name on Admin Tab

Yellow pattern cells are used to apply for confidentiality.

Contract Name:	
Supplier/Seller:	
Start Date:	
Expiration Date:	
NQC or Dependable MW Under Contract:	
Scheduling Coordinator:	
Fuel Type:	
Delivery Points:	[Balancing Area and Transmission Zone]
	[More Specific Info Such as Substation & Buss]
Locational Attributes of Unit:	[Balancing Area and Transmission Zone]
	[Load Pocket Location and More Specific Attributes]
Contract/Agreement Products:	
Availability of Products:	
Must Take:	
Generating Units Specified:	
Nameplate MW of the Units:	
Availability of the Units:	
Unit Contingent/LD Contract:	
Firm:	
Firming or Shaping:	
Contract/Agreement Type:	
Termination & Extension Rights:	
Performance Requirements:	
Notes:	(1)
	(2)