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STAFF REPORT

Assessment of Publicly Owned Utilities' Resource Adequacy

Assembly Bill 1373 Report

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California Energy Commission

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ABSTRACT

Assembly Bill 1373 (Garcia, Chapter 367, Statutes of 2023) requires the California Energy Commission, in consultation with the California Public Utilities Commission, to perform an assessment of whether each local publicly owned electric utility exceeded, met, or failed to meet its minimum planning reserve margin and specified system resource adequacy requirements.

Keywords: Reliability, CA Independent System Operator, CEC, CPUC, California, Electricity, electricity system planning

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EXECUTIVE SUMMARY

Assembly Bill 1373 (Garcia, Chapter 367, Statutes of 2023) requires the California Energy Commission (CEC), in consultation with the California Public Utilities Commission (CPUC), to submit a report to the appropriate policy and budget committees of the Legislature. The report must include an assessment of whether each local publicly owned electric utility exceeded, met, or failed to meet its minimum planning reserve margin and specified system resource adequacy requirements. This report provides the findings related to the minimum planning reserve and resource adequacy analysis at an aggregated level.

This report leverages the 2023 Integrated Energy Policy Report (IEPR) assessment of publicly owned utilities' (POUs) projections of meeting resource adequacy needs. Drawing from the 2022 supply forms and confidential resource adequacy (RA) showings obtained from the California Independent System Operator (California ISO), this analysis offers a high-level assessment of the state's POU resource adequacy situation.

POU's typically set their own planning reserve margins. However, due to limited information on each POU's planning reserve margin, the 2022 supply forms analysis assumes all POU planning reserve margins are an industry standard of 15 percent. The 2022 supply forms analysis in this report provides an overview of each POU's resource adequacy status, considering cumulative existing and planned supply resources from 2023 to 2031 against projected peak demand, augmented by a planning reserve margin set at 15 percent. This analysis involves subtracting the peak demand plus PRM from the total supply, reporting the result as a percentage above or below the projected demand for each year. The analysis shows that in 2023, seven POUs were identified as resource deficient; in 2024, the number increased to nine. It is essential to note that some POUs projecting deficiencies may have contracted additional resources, imports, or spot market purchases after submittal of the supply forms, which may not be reflected in this analysis.

Additionally, this report further evaluates non-CPUC Load Serving Entities within the California ISO area, which include POUs. The aggregated RA showings data from July to September 2023 indicate that at least 14 POUs were resource deficient, while 12 reported sufficient RA resources. POUs with deficiencies had peak demands less than 100 MW. The deficiencies totaled 6.7 percent in July, 6.8 percent in August, and 8.0 percent in September of the total RA need for POUs within California ISO and 0.64 percent, 0.66 percent and 0.75 percent of total California ISO need for July, August and September, respectively.

As part of continued implementation of AB 1373 requirements, the CEC opened an Order Instituting Rulemaking (OIR) to establish regulations for assessing and collecting capacity payments for POUs in the California ISO balancing area that are deficient at the same time the Strategic Reliability Reserve is triggered for an identified reliability need. Next steps will include hosting a pre-rulemaking workshop, drafting a staff report to include proposed regulations, and seeking public feedback. Once those actions are complete, the CEC will initiate the formal rulemaking process and submit the proposed regulations for adoption at a Business Meeting.

CHAPTER 1:
Assessment of POU Resource Adequacy

Background

Assembly Bill (AB) 1373 authorizes the California Energy Commission (CEC) to adopt regulations establishing a new fee structure for specific publicly owned utilities (POUs) that fail to meet their planning reserve margins during a month where the Electricity Supply Strategic Reliability Reserve Program (ESSRRP) resources are dispatched to meet an identified reliability need. The ESSRRP is one component of the Strategic Reliability Reserve (SRR). The SRR was developed in 2022 as part of Assembly Bill 205 (Committee on Budget, Chapter 61, Statutes of 2022), to expand the resources capable of managing or reducing net-peak demand during extreme events.

AB 1373 requires the Department of Water Resources to determine whether resources have been procured through the ESSRRP, and if those resources are being used in a given month to meet an identified reliability need. Each POU in the California ISO balancing area that fails to meet its planning reserve margin for a given month under such conditions will be subject to a capacity payment. The CEC must assess capacity payments to each POU annually and deposit those payments into the Department of Water Resources' ESSRRP fund.

AB 1373 further requires the CEC, in consultation with the California Public Utilities Commission (CPUC), to submit a report to the appropriate policy and budget committees of the Legislature that includes an assessment of whether each local publicly owned electric utility exceeded, met, or failed to meet its minimum planning reserve margin (PRM) and specified system resource adequacy requirements. A planning reserve margin, in electricity system planning, is a buffer for uncertainty in resource supply and demand to account for variations in demand, generation outages and reserve requirements. PRMs are typically established to meet the industry standard of a maximum of one loss of load event in every ten years. Historically, this has been achieved through a 15 percent PRM on a 1-in-2-year demand forecast and approximately represents the need to cover 6 percent operational reserves, 5 percent outages, and 4 percent demand variability in addition to forecasted demand.

For the supply forms analysis, the CEC staff evaluated POUs using a 15 percent PRM, although some POUs may utilize higher PRMs for the purposes of long-term planning. For comparison, the CPUC adopted a 16 percent PRM for its RA program in 2023 and 17 percent PRM starting in 2024.

This report provides the findings related to the minimum planning reserve and resource adequacy analysis at an aggregated level.

Assessment of Publicly Owned Utilities

As part of the 2023 Integrated Energy Policy Report (2023 IEPR)[1], CEC staff evaluated the state's POUs progress toward meeting near- and long-term resource adequacy needs, meaning planning for and procuring adequate resources to meet the needs of their end-use customers. This analysis used the 2022 supply forms[2] and provided a snapshot of the amount of supply resources each POU procured. The supply form data may provide a limited view into whether and how POUs are meeting their resource adequacy obligations. If a POU appears to be deficient at the time of the supply form submittal, the utility may have contracted additional supply resources before the summer high-load season. For POUs in the California ISO balancing area, if a POU appears to be "whole" or "long" in contracted resources, it is also feasible that the utility did not formally commit the resources in their month-ahead showings.

To supplement the supply forms data, CEC staff also used confidential resource adequacy (RA) showings from the California ISO to evaluate POUs that are also local regulatory authorities (LRAs) in the California ISO balancing area. The RA showings data reflect the total RA showings for each POU in the California ISO for each month of summer 2023. Each California ISO POU was evaluated against their reported peak demand plus an LRA-determined PRM. If LRAs do not set their own planning reserve margin, then the California ISO applies a default planning reserve margin of 15 percent. Most LRAs formally utilize the default 15 percent PRM but a few LRAs utilize PRMs as low as 5 percent. A common reason for selecting a lower PRM is that most of the utility's loads are controllable and thus there is less uncertainty that needs to be accounted for. The topic of lower PRMs is further explored in the Assembly Bill 209 (Committee on Budget, Chapter 251, Statutes of 2022) proceedings. There are certain differences between the datasets that range from the data vintage to the specific POUs reported. For example, larger POUs such as the Sacramento Municipal Utility District (SMUD), Los Angeles Department of Water and Power (LADWP), and Imperial Irrigation District (IID) are not required to report RA showings to the California ISO. While both supply forms and RA showings have limitations for the analysis required by AB 1373, leveraging both datasets provides a more robust snapshot of the POU RA situation across the state.

Supply Forms Analysis

The following table offers an overview of the projected RA position for each POU, based on information derived from bi-annual supply forms submitted to the CEC in 2022[3], which includes planned and existing supply resources from 2023 to 2031. The projected RA position is determined by comparing the cumulative existing and planned supply resources from 2023

1 California Energy Commission Document, available at: https://efiling.energy.ca.gov/GetDocument.aspx?tn=254463.

2 California Energy Commission, *Utility Plans 2022*, available at: https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/utility-plans-2022.

3 https://www.energy.ca.gov/sites/default/files/2022-05/CEC-300-2022-002.pdf

to 2031 against the projected peak demand, increased by a PRM set at a minimum of 15 percent above the annual 1-in-2 peak demand.

The assessment of progress towards meeting a POU's customer demand involves subtracting the peak demand plus PRM from the total supply and reporting the result for each year as a percentage above or below the projected demand. In Table 1, a positive, green number signifies that the POU has reported a surplus of resources or has successfully met the projected customer demand plus PRM, in 2023. Conversely, a negative, red number indicates that the POU faces a deficit in resources and has not met the projected customer demand plus PRM.

Using 2023 forecasted supply numbers, seven POUs were identified as being deficient based on the RA evaluation and four POUs did not report projections for 2023 (indicated by a dash). In 2024, the number of resource deficient POUs increases to nine. The rest of the POUs either met or exceeded the 15 percent PRM. For more details on which POUs were deficient and the magnitude of the deficiency, please see Table 1.

Table 1: 2023 Summary of Reported Resource Adequacy Relative to a 15 Percent PRM

Utility	2023	Utility	2023
Alameda	-	**Palo Alto**	77%
Anaheim	23%	**Pasadena**	21%
Arizona EPCO	-	**Pittsburg**	0%
Azusa	-	**Plumas Sierra**	36%
Biggs	31%	**Port of Oakland**	-13%
Burbank	11%	**Rancho Cucamonga**	-
Cerritos	0%	**Redding**	-9%
Colton	5%	**Riverside**	4%
Corona	0%	**Roseville**	-11%
Glendale	-33%	**SF PUC**	160%
Gridley	55%	**Shelter Cove**	0%
Healdsburg	9%	**Silicon VP**	1%
IID	-1%	**SMUD**	0%
LADWP	23%	**Trinity**	0%
Lassen MUD	0%	**Turlock ID**	25%
Lodi	-20%	**Ukiah**	270%
Lompoc	37%	**Valley EA**	9%
Modesto	3%	**Vernon**	12%
Moreno Valley	-94%	**Victorville**	0%

Source: CEC

It is important to note that some POUs may project deficits, but they may have contracted additional resources, imports, and/or spot market purchases, after submittal of the supply

forms. The presented results are based on data captured in the September 2022 supply forms submissions, providing a snapshot of the POU resource adequacy at the time of data submission.

2023 Resource Adequacy Showings

The POUs within the California ISO make up less than 10 percent of the total California ISO peak demand in September 2023, as shown in Figure 1. The remaining 90 percent consists of CPUC-jurisdictional Load Serving Entities.

The California ISO Tariff Section 40.2.2[4] outlines the requirements for Non-CPUC Load Serving Entities, which are largely POUs, regarding RA-related information provided to the California ISO. This includes disclosing the applicable reserve margin for each month set by the Local Regulatory Authority and detailing the criteria for determining qualifying resource types and their capacities. Additionally, Non-CPUC Load Serving Entities must furnish separate demand forecasts for each entity they represent, utilizing data from the CEC or California ISO where necessary. Annual and monthly RA plans must be submitted according to specified schedules and formats, outlining procurement strategies and identifying resources to meet peak demands.

The data used for this section was based on confidential data filings submitted by the California ISO to the CEC under a subpoena[5]. To address confidentiality limitations, the data was aggregated and summarized across all reported LSEs.

This section provides as assessment of Non-CPUC Load Serving Entities, which include POUs within the California ISO area. With the aggregated RA showings data, Table 2 summarizes the number of POUs that were resource deficient or short compared to the reported peak demand plus PRM. From July to September 2023, at least 15 POUs were deficient based on shown RA resources while at least 14 POUs reported enough RA resources to cover their peak demand plus PRM.

Table 2: 2023 Summary of Resource Adequacy — POUs Within California ISO

Month	Short	Long
July	15	16
August	16	15
September	17	14

Source: CEC analysis of California ISO data

From July to September, the total deficiencies, for non-CPUC LSEs, were 325 MW, 342 MW, and 392 MW, respectively. This results in 6.71 percent, 6.84 percent, and 8.04 percent of the

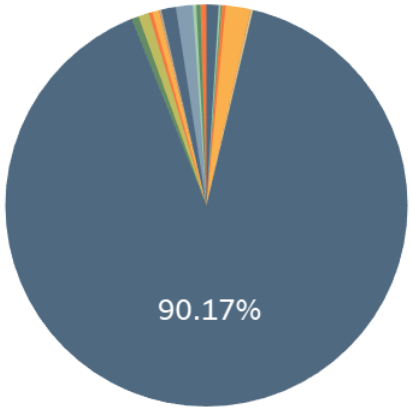
4 California Independent System Operator (CAISO), available at: https://www.caiso.com/Pages/DocumentsByGroup.aspx?GroupID=195D3A09-6822-486F-9BEC-5E96ACC6B2AA

5 https://www.caiso.com/Documents/2021-CEC-Subpoena-Section20.pdf

total RA need for POUs within California ISO, excluding the RA need of CPUC LSEs. The net deficiencies, a summation of all short and long positions, were 181 MW short for July, 238 MW short for August, and 334 MW short for September.

When compared to the total RA need, including CPUC LSEs, the POU deficiencies were 0.64 percent, 0.66 percent and 0.75 percent of total California ISO need for July, August, and September, respectively. Between July and September, CPUC LSEs cumulatively procured up to 1% beyond their RA needs.

Figure 1: Breakdown of Peak Demand – September 2023



Source: CEC analysis of California ISO data

CEC staff observed patterns in the relative size of the POU, based on peak demand. A majority of the resource deficient POUs serve peak demands less than 100 MW. Eight POUs were short 80 percent or greater of their RA obligations. It may be significant to note that these eight POUs serve peak demands of less than 30 MW. Conversely, POUs serving peak demands greater than 200 MWs consistently meet their system RA obligations. While the data show some clear patterns in RA showings for California ISO POUs, a more in-depth analysis is needed to conclude the cause of deficiencies.

Conclusion

The analysis of Non-CPUC Load Serving Entities, including POUs within the California ISO area, reveals deficiencies in RA resources from July to September 2023, with a total shortfall ranging from 6.71 to 8.04 percent of the total RA need for these entities. However, this results in 0.64 percent, 0.66 percent and 0.75 percent of total California ISO need for July, August, and September, respectively.

The supply forms analysis generally shows the larger POUs have no issues meeting RA needs while smaller POUs may face some challenges in procuring enough supply. Moreover, observations, in the 2023 California ISO RA showings, suggest that smaller POUs serving peak demands under 100 MW tend to face greater challenges in meeting RA obligations, with eight POUs falling short by 80 percent or more, particularly those serving demands under 30 MW. However, POUs serving peak demands exceeding 200 MW consistently meet their RA obligations. Therefore, both analyses generally come to the same conclusions. While these

findings offer insights into RA deficiencies and trends among California ISO POUs and other POUs within the state, further analysis is required to determine the underlying causes.

Resource Adequacy and Program Design Working Groups

The California ISO launched public Resource Adequacy Modeling and Program Design (RAMPD) working groups in October 2023. In these working groups, the California ISO is exploring reforms to its RA rules, requirements, and processes to ensure the future reliability of the California ISO grid. The working group structure aims to give participants an active role in forming problem statements, identifying potential areas for analysis and supporting data, and scoping necessary market rule changes. These working group discussions will help inform the scope of a formal RA policy initiative, which may include updating the California ISO's default PRM.

CHAPTER 2:
Next Steps

Order Instituting Rulemaking

On March 13, 2024, the CEC staff opened an Order Instituting Rulemaking (OIR) to establish regulations for assessing and collecting capacity payments, as required by AB 1373. The OIR and all subsequent documentation related to this rulemaking will be made available in the CEC Docket No. 24-OIR-01.

Continued Planning

Staff intends to host a pre-rulemaking workshop in Spring 2024 to publicly share the projected pre-rulemaking process and anticipated outcomes. Staff will then develop a draft staff report, including draft proposed regulations in accordance with AB 1373 to specify the requirements and calculations that will be used to assess capacity payments, which will be published to Docket No. 24-OIR-01. The CEC will seek feedback on the draft proposed regulations from stakeholders and may hold additional pre-rulemaking workshops if necessary. The CEC will incorporate and revise the regulations as appropriate prior to preparing the formal rulemaking documents and initiating the formal rulemaking process. During the formal rulemaking process, the CEC will accept public comment before finally submitting the proposed regulations for adoption at a future business meeting.