California ISO

2026
SUMMER LOADS AND RESOURCES ASSESSMENT

May 4, 2026

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Executive Summary

The 2026 Summer Loads and Resources Assessment (Summer Assessment) indicates continued improvement in resource availability, largely driven by accelerated resource development. As a result, projected capacity margins exceed forecast demand and reserve requirements and have met established performance targets for four consecutive years. It is important to note, however, that the Summer Assessment does not account for coincident extreme events—such as drought, wildfires, widespread regional heat events, or other disruptions—which continue to pose a risk of emergency conditions on the CAISO grid. Key highlights and observations from the Summer Assessment include the following:

- **2,127 MW of resource adequacy (RA) eligible nameplate capacity have been added to the CAISO grid from September 1, 2025 through April 1, 2026** and an additional 6,194 MW of new resources are expected through June 30, 2026, which includes CAISO's share (3,167 MW) of SunZia Wind project in New Mexico.

The analysis indicates that there are sufficient resources to meet a wide range of system conditions in load, solar, wind generation, and generation resource outages.

- The California Energy Commission's 1-in-2 forecasted peak load[1] for 2026 is **46,844 MW** in **September**, hour ending 18.
- The CAISO's **probabilistic assessment**[2] of "All Resource Adequacy (RA) eligible" resources shows a surplus of 2,547 MW for meeting a generally accepted "one day every 10 years loss-of-load expectation" ("1-in-10 or 0.1 LOLE") planning target.[3] This assessment measures the potential for calling on emergency measures, not actual loss of firm load.
- The CAISO's **multi-hour stack assessment** is used to ensure sufficiency of battery charging capability and used to quantify the margins above planning reserve margin (PRM) necessary to achieve a 0.1 LOLE target established by the probabilistic assessment.
- The **Weather outlook** for the months of June through August shows probability of above-normal temperatures across the West, with the highest probabilistic chances across the Intermountain West and Pacific Northwest. The first half of summer could have a higher magnitude of above normal temperatures. Forecasts also show an increased chance of above-normal temperatures across the West in August and September 2026.
- **Emergency supply** of about 3,379 MW is accessible through the state's Strategic Reliability Reserve Program (SRR) and emergency assistance on the interties and not included as part of this assessment.

  The CAISO coordinates closely with California state agencies, utilities, and regional partners on summer readiness activities. This planning and coordination ensure we are well prepared to respond to potential grid events.

[1] A 1-in-2 forecast assumes a 50 percent probability that actual peak load will be higher than the forecasted peak and a 50 percent probability that it will be lower.

[2] The CAISO's probabilistic assessment of the expected resource fleet employs 500-iteration, full-year hourly chronological simulations, effectively capturing a wide range of system conditions in load, solar and wind generation, and generation resource outages.

[3] LOLE measures the number of days per year when the available generation capacity is insufficient to serve the demand at least once during that day. 0.1 LOLE or 1-day-in-10 LOLE equates to "1 day with an event in 10 years".

1 2026 Summer Assessment

Each year, the CAISO prepares an assessment of the expected supply and demand conditions for the coming summer for its balancing authority area (BAA). Publishing the summer assessment and sharing the results with state regulatory agencies, industry participants, and stakeholders is one of many activities the CAISO undertakes each year to be transparent and to prepare for summer system operations.

Summer Assessments are critical to prepare for potentially challenging summer conditions and high loads. Over the past decade, the CAISO's methodology for summer assessments has transitioned from a solely deterministic evaluation of anticipated summer conditions to a probabilistic approach centered on operational situational awareness. Over time, as shortfall conditions emerged and as system peaks shifted to later hours of the day due to the growth of customer-sited solar, the CAISO began to shift the focus of its summer reliability analyses. These changes include:

- Increased scrutiny of expected summer conditions;
- Increased focus on changes in demand requirements, timing and resource additions; and,
- Increased risk assessment associated with extreme events and the availability of emergency mitigation measures.

In this Summer Assessment, the CAISO developed two distinct metrics aligned with evolving stakeholder needs. These consist of: 1) a probabilistic assessment of expected 2026 summer portfolio including existing RA-eligible and planned resources and 2) another perspective in the form of a multi-hour stack analysis for 2026 summer months (May – September) using the same portfolio of all RA eligible resources. Section 1.1 and Section 1.2 provide detailed results of these metrics to assess the reliability of CAISO BAA for summer 2026.

1.1 Probabilistic Assessment

The CAISO evaluated a resource portfolio that includes existing RA-eligible resources and those expected to declare commercial operations by June 30, 2026. This portfolio was tested against a 1-in-10 LOLE planning target using probabilistic production cost simulations in the PLEXOS energy modeling software. As shown in Figure 1.1, the CAISO’s stochastic approach utilizes 500-iterations of full year hourly chronological simulations and captures a wide range of system conditions with varying load, solar and wind generation, as well as generation resource outages. The model simulates 500 years with a unique combination of load, solar, wind and outage profiles for each year. The simulation runs chronologically to co-optimize generation dispatch, ancillary services and load following requirements subject to various operational and availability constraints. The resulting frequency distribution of capacity shortfalls is used to calculate the portfolio’s LOLE level in days per year.

Figure 1.1 CAISO's probabilistic assessment process flow

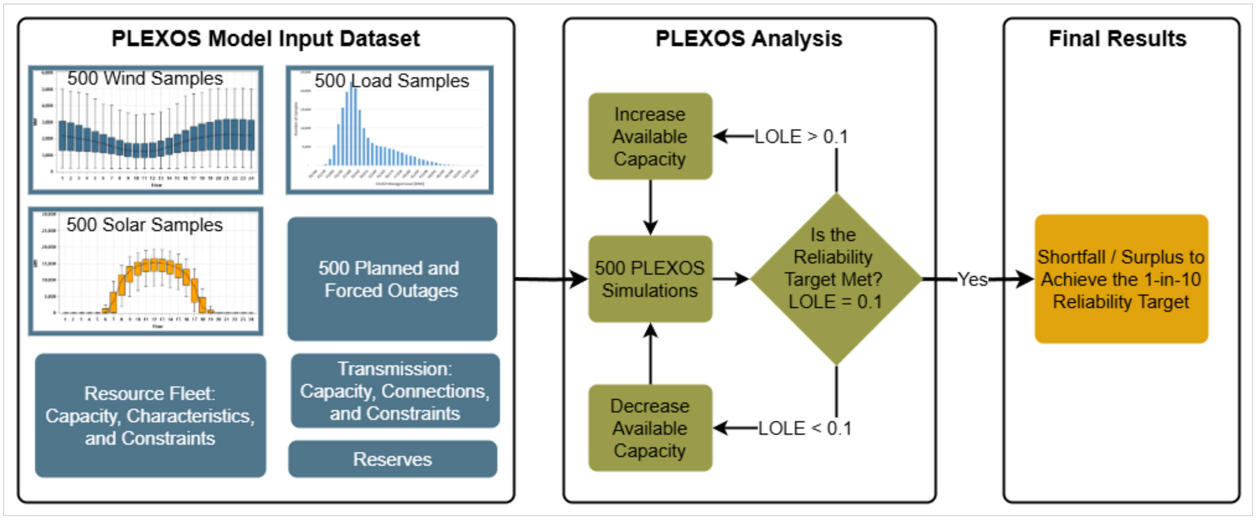
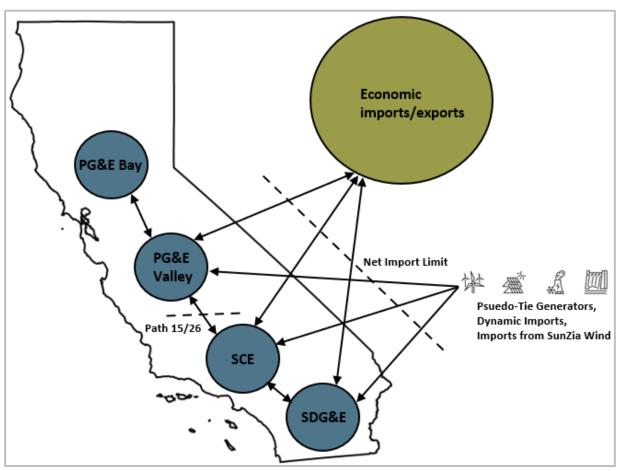


Figure 1.2 shows a high-level representation of the CAISO's zonal topology used in the stochastic model. The CAISO's stochastic production cost simulation model maintains a detailed representation of individual generation resources and loads inside the CAISO across four zones: PG&E Bay, PG&E Valley, SCE and SDG&E with inter-zonal limits enforced. Although transmission constraints may exist within a zone, the zonal model assumes no transmission limits within each zone. Such constraints may require local resources to be committed and dispatched in practice.

Figure 1.2 CAISO zonal topology in the stochastic model



The figure also shows select out-of-state resources (pseudo-tied, dynamically scheduled imports, and generation from SunZia Wind) modeled as imports which are counted against the net import limit. Economic imports and exports are modeled as a single external market zone and are directly connected to the CAISO through the PG&E Valley, SCE and SDG&E zones. The interchange from the external zone is subject to the CAISO's net import limit as well. For 2026 Summer Assessment, the net import limit of 5,500 MW during hours 17 – 23 (PDT) from June through September is increased to 6,509 MW to account for imports from SunZia's wind generation. In all other hours, the net import limit is set to Maximum Import Capability (MIC) limit of 11,665 MW. More details on modified net import limits can be found in Section 1.1.1.

The zones also have ancillary services and load following requirements modeled, either as fixed profiles or as a certain percent of their loads. The CAISO also has total ancillary service and load following requirements for PG&E, SCE, and SDG&E zones together. Internal resources and select resources outside the CAISO may provide capacity for the ancillary service and load following requirements. All iterations use a single set of deterministic regulation and load following requirements. Spinning and non-spinning reserves are modeled at a total of 6 percent of load approximating actual requirements. Because load is a stochastic variable, the hourly values of spinning and non-spinning reserve requirements vary in each iteration.

The model uses mixed-integer programing (MIP) to co-optimize generation dispatch, ancillary services and load-following requirements, subject to various operational and availability constraints. The outcome of the co-optimization is a least-cost solution that meets load and ancillary service and load-following requirements simultaneously. As shown in Table 1.1, the model sets a priority order for meeting different requirements. In most cases, if there is an upward shortfall, the shortfall occurs first in a failure to meet the load following up requirement. If the shortfall is large enough, it will extend to not meeting non-spinning, spinning, and regulation up and finally resulting in unserved energy. Alternatively, there are cases with shortfalls in the model with capacity still available, but the unused capacity is not capable of following the load ramp.

For this assessment, LOLE is the number of days per year where the modeled resources are insufficient to serve load, regulation up, spinning or non-spinning reserves. Shortfalls of load following up reserves do not contribute to loss of load. The resulting frequency distribution of capacity shortfalls is used to calculate each portfolio's LOLE level in days per year.

As mentioned before, the model uses four stochastic variables – load, solar, wind, and outages. The outage variable is independent of the other stochastic variables and generated for each resource in the CAISO BAA for the whole year. Detailed modeling assumptions and methodology used to derive load, solar, wind, and outage stochastic variables are discussed in a separate technical appendix report.[4]

Table 1.1 Modeled upward reserve products and contribution to LOLE

Priority	Modeled Reserves	Description	Included in LOLE?
1	Unserved Energy (USE)	Unserved Energy is load that could not be met due to a shortage in generation and/or transmission capacity	Yes
2	Regulation up reserves	Requirements based on the 95th percentile of day-ahead and real-time requirements from the past three years	Yes
3	Spinning reserves	1.2% of load	Yes
4	Supplemental or non-spinning reserves	4.8% of load	Yes
5	Load following up	Used to address intra hour differences in load	No

[4] 2026 Summer Assessment Technical Appendix, May 4, 2026: https://www.caiso.com/library/seasonal-assessments

Resource Portfolio

The 2026 Summer Assessment model portfolio includes all existing resource adequacy (RA) eligible, planned new resources within the CAISO footprint, and all energy-only co-located solar resources relied upon to charge adjacent RA-eligible batteries. Existing RA-eligible resources are those that are listed on the CAISO's Net Qualifying Capacity (NQC) list as of February 12, 2026.[5] Planned new additions are those that CAISO expects to be online as of June 30, 2026. The modeled portfolio excludes resources that are not eligible for RA, such as resources participating in the State's Strategic Reliability Reserve (SRR). The portfolio also excludes energy-only solar resources that are not co-located with fully deliverable battery storage capable of charging from those resources. The resulting portfolio therefore represents the full set of RA-eligible capacity and energy-only co-located resources used to charge battery storage, regardless of contracting status. This includes resources that may not be contracted by Load Serving Entities (LSEs) within the CAISO balancing authority area. Examples include resources contracted by entities without RA requirements, resources serving load outside CAISO, or resources that remain uncontracted.

While this approach may overstate capacity available in each month to serve CAISO load, it is not feasible or practical to try to make an assessment based only on LSE-contracted resources. First, year ahead showings only reflect 90 percent of the summer month requirements. In addition, not all contracted capacity is reflected in monthly RA showings submitted by LSEs. Each Local Regulatory Authority's (LRA's) RA program determines which capacity must be shown in a given month. Resources that are contracted but not-shown are not subject to the same Must-Offer Obligation (MOO) or RA Availability and Incentive Mechanism (RAAIM) requirements as Shown RA resources. However, these contracted but not-shown resources may still serve other purposes including substitutions for MOO resources with planned outages.

Table 1.2 shows RA-eligible capacity additions from September 1, 2025, through April 1, 2026, and expected new resources that have a high likelihood of declaring commercial operation by June 30, 2026. As shown in the table about 2,127 MW of RA-eligible nameplate capacity was added to the grid from September 1, 2025 through April 1, 2026 and the CAISO expects to onboard an additional 6,194 MW nameplate capacity by June 30, 2026. Additions data includes about 3,167 MW representing CAISO's share of SunZia Wind project (3,650.2 MW total nameplate capacity) in New Mexico.

Table 1.2 Actual and expected additions from September 1, 2025 through June 30, 2026 (MW)[6]

Resource Additions	Battery	Wind	Solar	Biofuel	Hybrid	Total Nameplate Capacity	Total NQC (MW)
September 1 to December 31, 2025	**1,660**		**374**			**2,035**	**1,672**
January 1 to April 1, 2026	**92**					**92**	**77**
April 1 to June 30, 2026 (Expected)	**1,354**	**3,467**	**1,370**	**2**	**1**	**6,194**	**1,811**
Internal	1,354	300	1,370	2	1	*3,028*	1,811
External		3,167				*3,167*	
Total	**3,107**	**3,467**	**1,744**	**2**	**1**	**8,321**	**3,560**

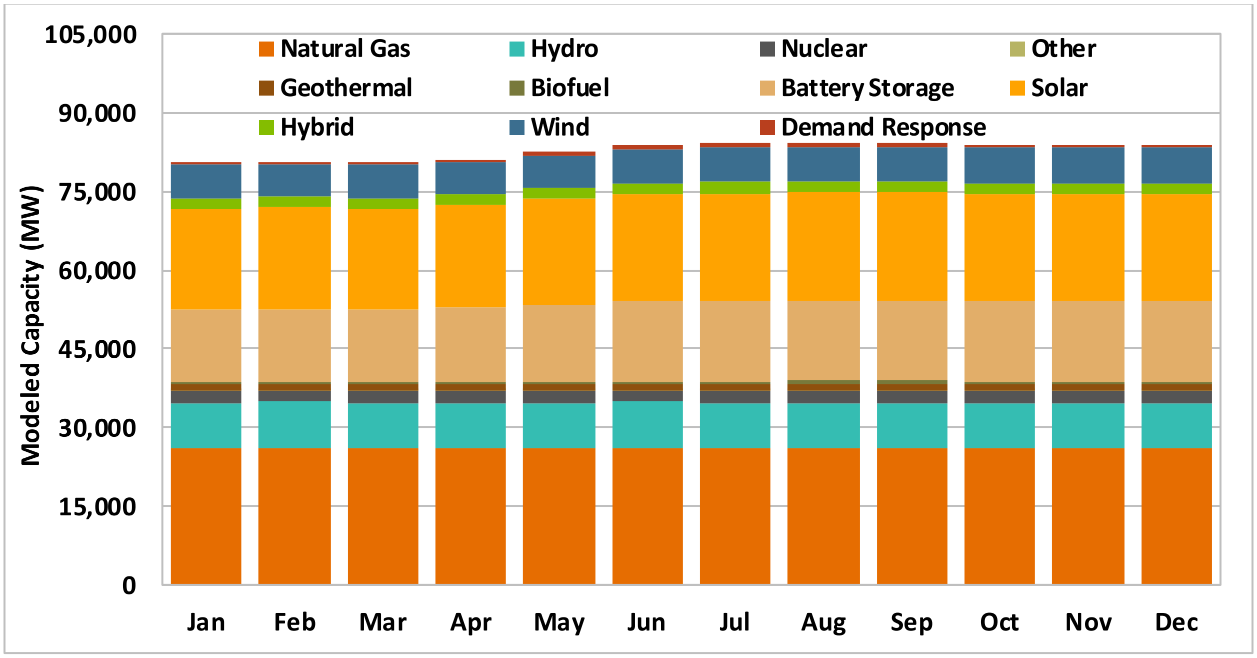
Figure 1.3 shows total modeled capacity by resource type, including all existing RA eligible resources from the NQC list and any expected new resource additions not on the NQC list (84,153 MW as of Sept 2026).

5 Final Net Qualifying Capacity Report for Compliance Year 2026, February 12, 2026: https://www.caiso.com/library/net-qualifying-capacity-nqc-and-effective-flexible-capacity-efc

6 Total nameplate additions for September 1, 2025 – December 31, 2025 amount to 2,747 MW. Between January 1, 2026 - April 1, 2026, total additions amount to 481 MW.

The figure excludes pseudo-tied, dynamic imports from out-of-state generators, and capacity from SunZia Wind project. However, these resources are modeled and counted against a modified net import limit as discussed on Section 1.1.1. Detailed capacity assumptions and technology specific modeling considerations are discussed in a separate technical appendix report.[7]

Figure 1.3 Probabilistic assessment resource portfolio (2026)



Load Distribution for 2026

The CEC's 2025 IEPR planning scenario projects CAISO 2026 peak demand under 1-in-2, 1-in-5, 1-in-10, and 1-in-20 conditions at 46,844 MW, 49,534 MW, 50,872 MW, and 52,122 MW, respectively.[8] Under the 1-in-2 conditions, the annual peak demand of 46,844 MW is forecast to occur on September 2, 2026 at hour ending 18 (PDT). This forecast does not include Known Loads[9], given the uncertainty associated with their timing, type, and phasing. Based on the 2025 IEPR Local Reliability scenario, Known Loads could increase the 2026 annual peak demand by approximately 1,569 MW.

Load distributions for the 2026 Summer Assessment were developed using the CEC's 1-in-2 planning scenario. Excluding Known Loads from the stochastic modeling may understate peak load exposure and overstate projected surplus for 2026, particularly if a majority of these loads materialize on their expected

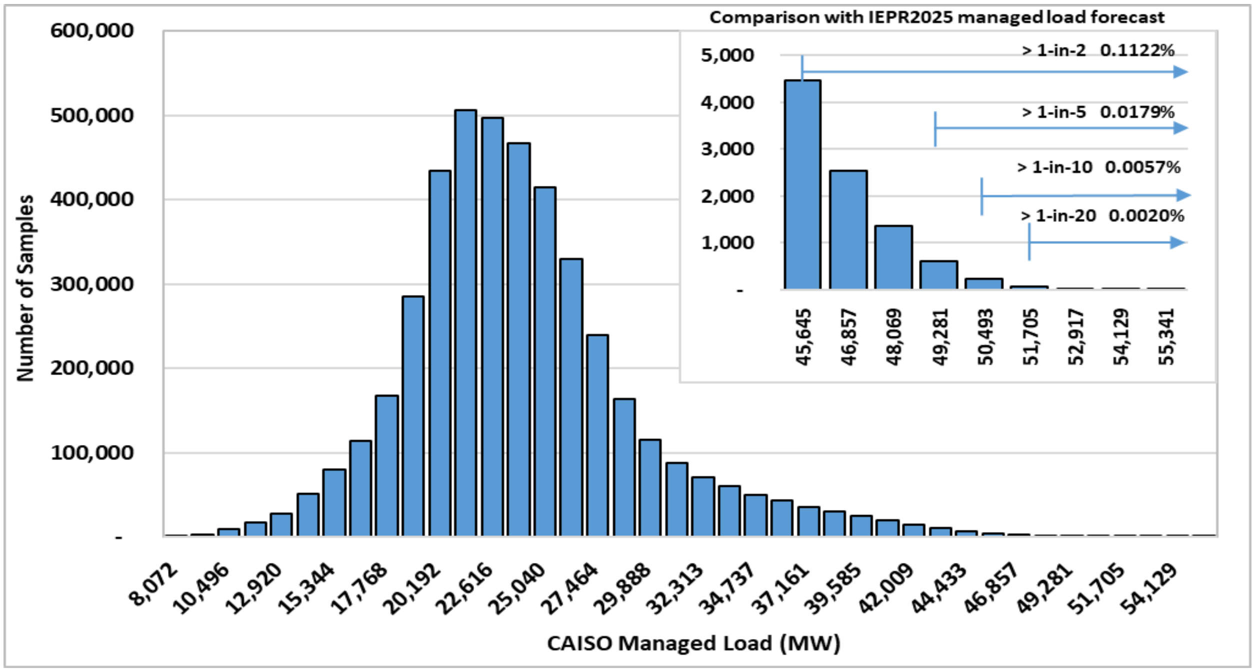
[7] 2026 Summer Assessment Technical Appendix, May 4, 2026: https://www.caiso.com/library/seasonal-assessments

[8] CEC, 2025 Integrated Energy Policy Report, Hourly Demand Forecast Files: https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report-iepr/2025-integrated-energy-policy-report-0

[9] Utility Known Loads are energization requests at the distribution system level, submitted to CPUC as part of distribution system planning in the High DER proceeding. Examples include apartment buildings, single family housing developments, warehouses, retail stores, medical facilities, schools and colleges, industrial facilities.

timelines. The 1-in-2 baseline managed hourly demand forecast was used as an input to CAISO's mean-reversion load forecast model to generate 500 stochastic hourly load profiles for 2026. [10] This model consists of two steps. First, historical CAISO load profiles from 2015 through 2025 are used in a regression-based framework to estimate mean-reversion ratios. Second, these ratios are applied to the CEC baseline hourly demand forecast to generate 500 unique hourly load shapes for 2026. Figure 1.5 shows the frequency distribution of the hourly loads used in this probabilistic assessment.

Figure 1.4 Frequency distribution of hourly load samples (2026)



1.1.1 2026 Modeling Updates

Building upon last year's modeling improvements, the CAISO implemented a set of key updates and enhancements to its 2026 summer assessment modeling in the PLEXOS 11 simulation software. The technical details are discussed in depth in a separate technical appendix. [11]

Modeling of SunZia Wind Project

According to the latest New Resource Implementation (NRI) data, the SunZia Wind project in New Mexico is expected to enter commercial operation on May 1, 2026. Of the project's total 3,650.2 MW installed capacity, approximately 3,167 MW is allocated to the CAISO, with the remainder belonging to Salt River Project (SRP). The project has roughly 3,100 MW of physical transmission outlet capability; however, the

[10] The methodology was filed as part of CAISO's expert testimony in the CPUC Long-Term Procurement Plan (LTPP) proceeding, Appendix A, pg. 5 – 19, Nov 20, 2014: https://www.caiso.com/documents/nov20_2014_liu_stochasticstudytestimony_ltpp_r13-12-010.pdf

[11] 2026 Summer Assessment Technical Appendix, May 4, 2026: https://www.caiso.com/library/seasonal-assessments

CAISO holds only 2,131 MW of transmission rights through Arizona, all delivered via the Palo Verde intertie.

SunZia units designated as internal to the CAISO balancing area are subject to Maximum Import Capability (MIC) limits until completion of the "2022–23 TPP-approved Southern California Upgrades", which are currently expected to come online around June 2034. Once those upgrades are in service, the SunZia units will no longer be subject to MIC and will instead have their own deliverability. This is a special treatment for the Subscriber PTO (SPTO) model since the resource will not have deliverability until 2034.

As mentioned earlier, for external resources such as tie-generators (pseudo-tied and dynamically scheduled) and imports, which are not included in the NQC list, the Summer Assessment defines "RA eligible" as those which have contracts and reserved MIC. Hence, from an RA showings perspective, SunZia's generation will be treated like an import and any generation contracted will require MIC reserved to ensure deliverability to the CAISO balancing area. For RA, the highest MIC that could be assigned to SunZia contracts would be 1,009.18 MW per the qualifying capacity ("QC") value based on CPUC's 2026 Tech Factors for New Mexico wind.

Historically, the Summer Assessment's net import limit value was based on observed firm RA import levels at 5,500 MW during summer net peak hours (June–September, hours 17–23 PDT), with a higher net import limit of 11,665 MW in all other hours. In the 2026 Summer Assessment, SunZia wind generation is modeled using a stochastic production profile based on New Mexico wind conditions. During summer net peak hours, the 5,500 MW net import limit is increased by modeled SunZia generation, up to an incremental "import availability limit" of 1,009.18 MW, consistent with SunZia's QC value during the net import limit periods.

2026 Net import limit = 5,500 MW + min (SunZia generation, 1,009.18 MW)

This modeling approach assumes the SunZia Wind project enters service on May 1, 2026, with only a portion of its capacity contracted. That contracted capacity is treated as incremental to existing RA import contracts. If the entire SunZia project were to be contracted—which remains uncertain at this time—up to 2,131 MW of SunZia wind generation could be counted (instead of just 1,009.18 MW), corresponding to the available transmission rights at the Palo Verde intertie.

Reserve related Modeling Enhancements

For 2026 Summer Assessment, following updates were made for various aspects of reserves modeling:

1. ***Regulation Requirements:*** For 2026, a month-hour profile was developed using the 95th percentile (P95) of day-ahead (DA) and real-time (RT, 15-minute interval) requirements from the most recent three years. The analysis shows that P95 values are consistently equal to or higher than the actual 2025 DA requirements. This approach is a reasonable improvement to capture some of the variability in 500 load, solar and wind profiles over the prior methodology, which relied solely on prior year DA data.
2. ***Frequency Response Reserve:*** The 376 MW frequency response reserve requirement was removed, as analysis of DA and RT data from 2023–2025 indicates minimal need to explicitly account for intra-hour variability reserves. When combined with the higher regulation requirements described above, this change is expected to have offsetting impacts on surplus calculations in the LOLE simulations.

3. ***Contingency Reserve Allocation:*** The modeling was updated to align with the 2023 WECC and NERC standards for splitting the 6 percent contingency reserve requirement between spinning and non-spinning reserves. Under this approach, spinning reserves are required to provide at least 20 percent (1.2 percent of load) of the total contingency reserve requirement, with non-spinning reserves eligible to meet any remaining requirement.

4. ***LOLE and Reserve Treatment:*** The relationship between LOLE and reserves established in the 2025 Summer Assessment was retained. Specifically, regulation up, spinning, and non-spinning reserves are all required to be available in order to avoid LOLE events.

Other Updates

1. ***Stochastic Load process update:*** The CAISO's summer assessment model uses 2026 hourly managed demand forecast (forecast excluding behind-the-meter solar) from the CEC's 2025 IEPR as an input to CAISO's mean reversion load forecast model to create 500 samples for load. The hourly demand forecast was adjusted to remove modeled pumped hydro load in order to avoid potential double counting, as pumped storage resources are represented individually within the simulation model. Furthermore, historical load years used in the regression model are also updated to use most recent data from 2015 through 2025.

2. ***Hydro Modeling:*** As of April 1, 2026 on a statewide basis, the snow water content is the second lowest (after 2015) on record at 18 percent. This is due to a combination of warm storms and unusually hot temperatures in March that led to rapid melting of what remained of this year's already sparse snowpack. Further, DWR's water supply forecasts use data from the April 1 snowpack to calculate how much snowmelt runoff will eventually make its way into California's rivers and reservoirs. This information is critical for reservoir managers, who must balance flood control and water supply goals through the winter and depend on snowmelt to slowly refill reservoirs as demand increases during the dry season. For 2026 Summer Assessment, dispatchable hydro generation is optimized subject to daily maximum energy limits derived from historical generation data where snowpack conditions that most closely resemble 2021-22 hydro year.

3. ***Non-Dispatchable Resource Modeling:*** Non-dispatchable thermal resource capacity is aligned with CAISO's default QC methodology to reasonably estimate available generation from these resources.

1.1.2 Probabilistic Study Results

The probabilistic assessment of the CAISO's anticipated 2026 summer resource portfolio indicates there are sufficient resources to meet a broad range of load, solar, wind, and outage uncertainties with an excess of **2,547 MW** satisfying the "one day every 10 years loss-of-load expectation" (1-in-10 LOLE) planning target. The assessment measured the risk of entering an Energy Emergency Alert (EEA) Watch condition or needing to call on emergency measures, rather than actual loss of firm load. It considered reasonable historical trends and history; it did not take into account extreme and emergency events.

Figure 1.5 shows that of loss of load hours across all 500 samples for the base portfolio (all RA-eligible resources) are concentrated in hours ending 19 and 20. The base portfolio's simulation results indicates a surplus for an assessment year because the model yielded 9 loss of load events across all 500 samples, which translates, to an LOLE of 0.018 (i.e., less than a 1-in-10 or 0.1 LOLE planning target).

To calculate the surplus (portfolio calibrated to 0.1 LOLE), the CAISO subtracts perfect capacity (e.g. imports) iteratively from the supply mix until the total loss of load event count reaches 50 (i.e., meets a 1-in-10 or 0.1 LOLE planning target). The calibrated portfolio results indicate that the CAISO is approaching summer of 2026 with a surplus of 2,547 MW, which exceeds the 1-in-10 LOLE planning target. Figure 1.6 shows the loss of load hours across the 500 samples for the calibrated portfolio spanning hours 18 through 21 (PDT).

Factors contributing to overall increased surplus in this Summer Assessment:

1. Relative to the 2025 Summer Assessment, **net modeled capacity increased by 7,817 MW**, reflecting a combination of resource additions, retirements, and capacity adjustments. Actual resource-level capacity contributions in the model remain subject to renewable production profiles, operational constraints, and other modeling considerations.
2. The **net import limit** of 5,500 MW during June–September, hours ending 17 through 23, was **increased by up to 1,009.18 MW** to reflect CAISO's allocated share (3,167 MW) of the SunZia Wind project located in New Mexico.
3. **Dispatchable hydro generation** in the model is based on the 2021–2022 hydro year, which has **lower energy availability relative to an average hydro year**, thereby constraining modeled hydro contribution.
4. **The CEC's 2025 IEPR indicates modest increases in CAISO's 2026 peak demand forecasts** under 1-in-2, 1-in-5, 1-in-10, and 1-in-20 weather conditions compared to 2025 forecasts. In addition, the planning scenario forecast did not include Known Loads. Based on 2025 IEPR Local Reliability scenario data, inclusion of Known Loads could increase the 2026 annual peak demand forecast by approximately 1,569 MW. Incorporating these loads into stochastic demand profiles is expected to reduce modeled surplus, as LOLE results are highly sensitive under tight reserve margins, where incremental peak demand additions can disproportionately reduce reliability margins.
5. **Higher regulation requirements in 2026, combined with the removal of the 376 MW frequency response** reserve, resulted in largely **offsetting impacts on surplus** outcomes in the LOLE simulations.
6. **Spinning and non-spinning reserve requirements in this assessment are based on managed load profiles** that exclude behind-the-meter solar generation. This treatment reduces the volume of reserves required to be carried in 2026, **contributing to increased surplus**.

Figure 1.5 Loss of load hours across 500 samples, Base portfolio

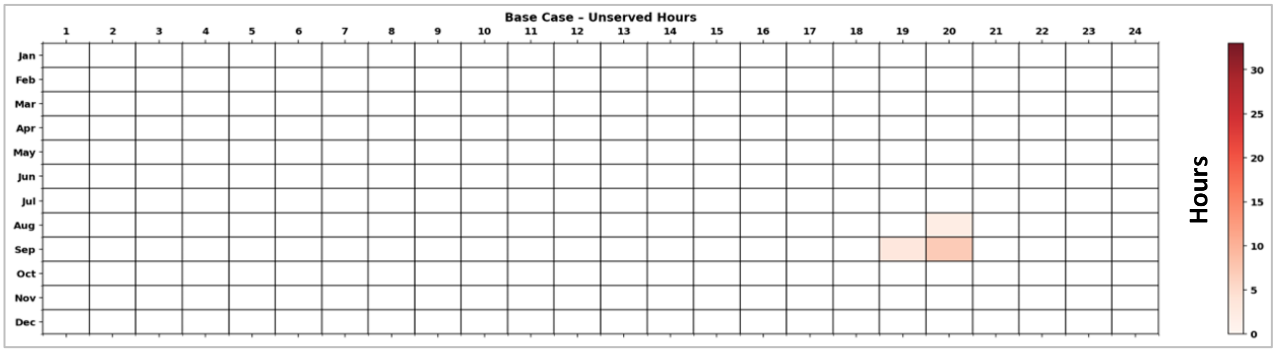
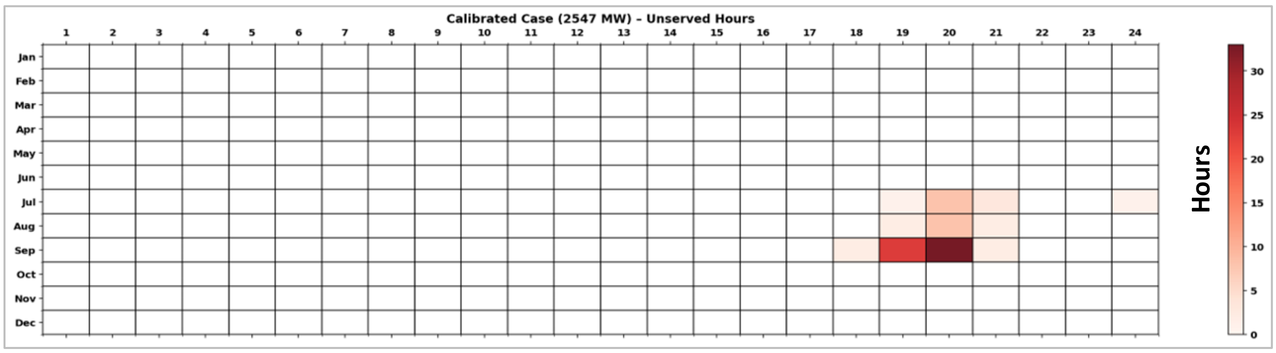


Figure 1.6 Loss of load hours across 500 samples, Calibrated to 0.1 LOLE



1.2 Multi-hour Stack Analysis

An hourly loads and resource contribution analysis was performed to analyze the hourly reserve margin for the expected "All RA eligible" fleet. The multi-hour stack assessment of this fleet indicates a reasonable margin above the planning reserve margin (PRM) required to achieve a 0.1 LOLE target.

The multi-hour approach for all RA eligible resource portfolio focuses on a reasonable expectation of resource availability during every hour of the peak day in each of the summer months. For most resource types, the NQC value provides a reasonable estimation of the contribution/availability of those resources every hour.

Assumptions and methodology

- **All RA eligible existing and new resources:**
  - Existing resources for the All RA Eligible portfolio are based on the 2026 NQC list published on February 12, 2026 and Master Control Area Generating Capability list on OASIS.
  - Expected new resources are those that are not on the NQC list but are in the late stages of the CAISO queue and expected to be online by June 30, 2026. The NQC value of an expected resource (excluding wind, solar, and battery) were estimated based on technology factors in the 2026 NQC list.
  - Excludes resources contracted under the Strategic Reliability Reserve (SRR) program.
- **Load Forecast:** Load profiles from CEC's 2025 IEPR 1-in-2 planning forecast for CAISO for a peak day in each summer month of 2026 are used.

Table 1.3 Monthly peak load forecast (May 2026 – October 2026)

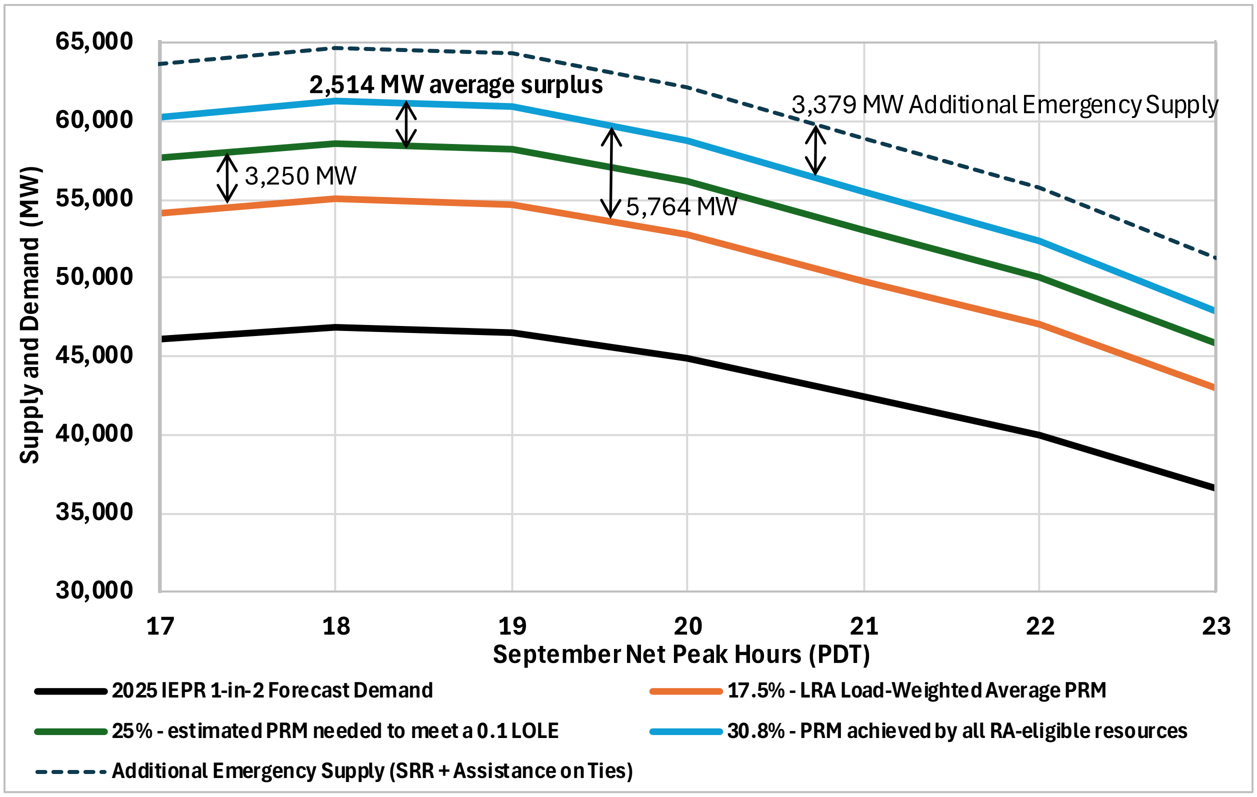
Month	May	June	July	August	September	October
Monthly peak load forecast (MW)	31,029	41,537	46,301	45,511	46,844	37,888

- **Energy storage:** Battery discharge profiles are optimized to maintain the maximum possible surplus over the entire 24 hour range of the peak day of each month. This is achieved by first calculating the pre-battery discharge surplus and then distributing the battery energy to maintain a constant percent surplus across the tightest hours. The battery discharge profile is increased until 95 percent of the 4-hour energy limit is exhausted and a limit is enforced so that discharge cannot exceed the total fleet Pmax in any individual hour. The 95 percent assumption is based on analysis of available years of historical state-of-charge data, which shows that the system-wide state-of-charge typically does not go below 3 percent or above 98 percent.
- **Nuclear:** Diablo Canyon nuclear capacity is included in the model, and capacity outside the CAISO footprint (Palo Verde dynamic import) is accounted under imports.
- **Wind and Solar:** Wind and solar profiles are derived from eight years of historical generation data (2018–2025) for the five highest load days, using exceedance methodology. Solar profiles are calculated at a 70 percent exceedance level, while wind profiles are calculated at an 80 percent exceedance level.

- **Demand Response:** Demand response capacity is assumed to be available from HE 17 to 23 and is sourced from CPUC's utility projections for PG&E, SCE and SDG&E and from the 2026 NQC list for third party providers.
- **Imports:** The net import limit of 5,500 MW from June through September during hours 17 – 23 (PDT) will be increased to account for SunZia's generation. In all other hours, the net import limit is set to Maximum Import Capability (MIC) limit of 11,665 MW. More details on modified net import limits can be found in Section 1.1.1. Import limits also account for both the contribution of tie generators and non-resource specific imports from neighboring BAAs.
- **Planning reserve margin (PRM) calculation methodology:** The 2026 summer assessment indicates a surplus of capacity relative what is needed to meet the 1-in-10 loss-of-load (0.1 LOLE) expectation criteria. This analysis is based on installed eligible resource adequacy (RA) capacity, and the assessment will also estimate the reserve margin necessary to meet the 0.1 LOLE standard in order to compare to the Planning Reserve Margins adopted by the CPUC and Local Regulatory Authorities (LRAs) using steps detailed below. Starting at the end of May on a monthly basis, the CAISO will also be able to compare results of the summer assessment to the actual RA showings and contracted capacity data available.
    1. *PRM required to meet a 0.1 LOLE:* The estimate of the PRM is calculated in two steps:
        i. The model constructs the resource stack and optimizes battery dispatch to maximize surplus across the tightest hours of each peak day achieving an average hourly surplus across the net peak hours (17 - 23 PDT) of 13,494 MW. This results in an "achieved PRM" of 30.8 percent in the tightest hour based on the current portfolio.
        ii. The model then integrates results from the probabilistic study, which identifies 2,547 MW of surplus perfect capacity that can be removed to achieve a 0.1 LOLE target. After reducing the supply across all hours and re-running the battery optimization the average surplus during September net peak hours decreased to 10,947 MW. The model subsequently recalculates the PRM, resulting in a requirement of **25 percent** to meet the reliability target.
    2. *Load-weighted PRM of LSE monthly RA obligations:* The majority of LSE's are under CPUC jurisdiction and are required to meet an 18 percent PRM for their RA obligation; the remaining LSE's have a mix of PRMs depending on their Local Regulatory Authority (LRA). The **17.5 percent** is the load-weighted average PRM across all LSE's.

Figure 1.7 shows a graphical illustration of various PRM comparisons applied to CEC's 2025 IEPR 1-in-2 demand forecast and resulting average surplus amounts during September 2026 net peak hours (17 -23 PDT). The figure shows that, during these net peak hours, there's an average margin of 3,250 MW between LRA's load-weighted average PRM and the estimated PRM needed to meet a 0.1 LOLE standard.

Figure 1.7 Surplus and PRM comparison across September net peak hours (2026)

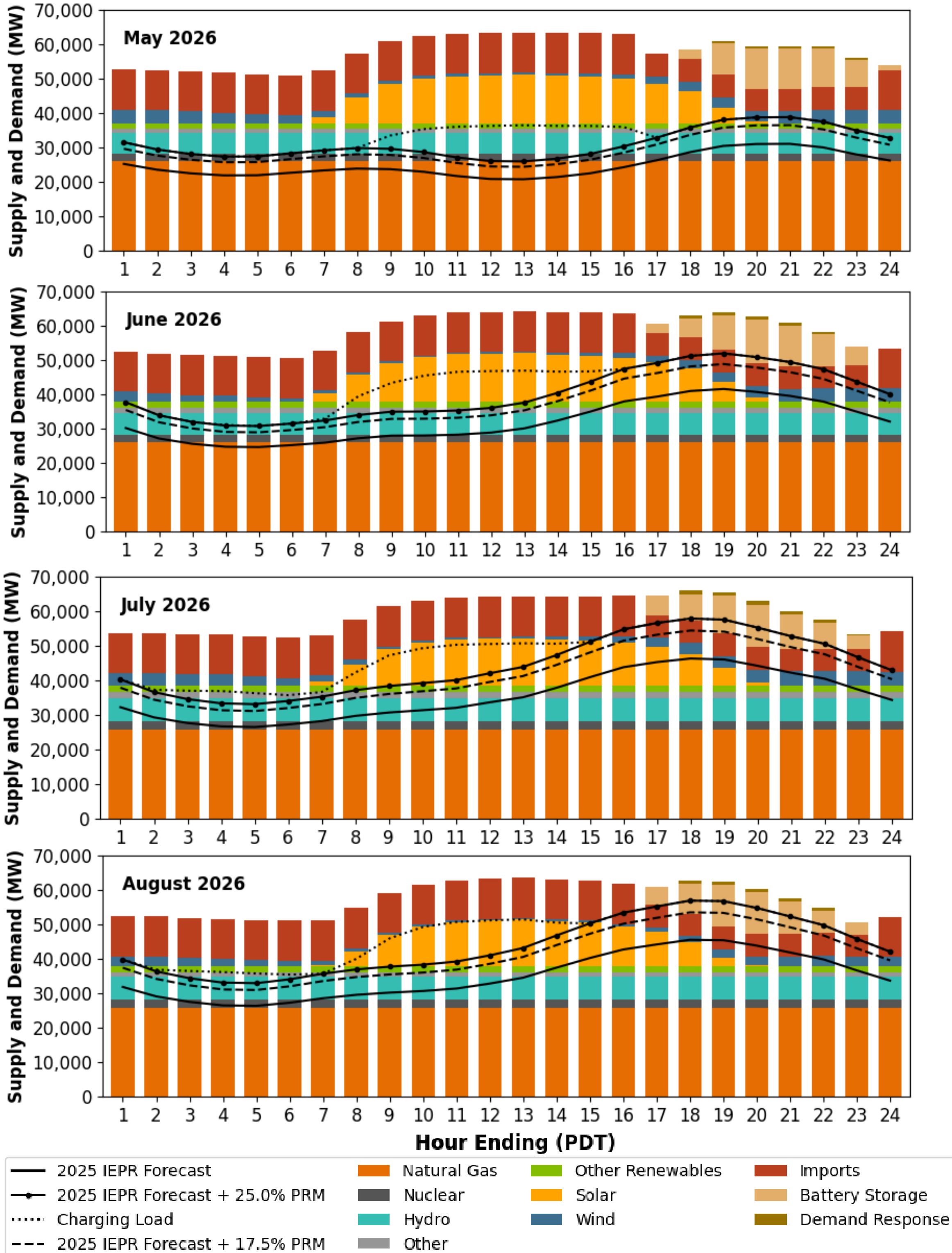


Analysis

The multi-hour stack analysis of "All RA Eligible" portfolio indicates that September remains the most stressed month on the grid, driven by high loads and reduced solar availability as shown in Figure 1.9. The CEC's 2025 IEPR 1-in-2 managed annual peak load forecast reaches 46,844 MW on September 2, 2026 hour ending 18 (PDT), which is 543 MW higher than the next highest peak in July 2026. While July has a similar load profile, it benefits from approximately 3.6 GW of more solar generation during the peak hour compared to September.

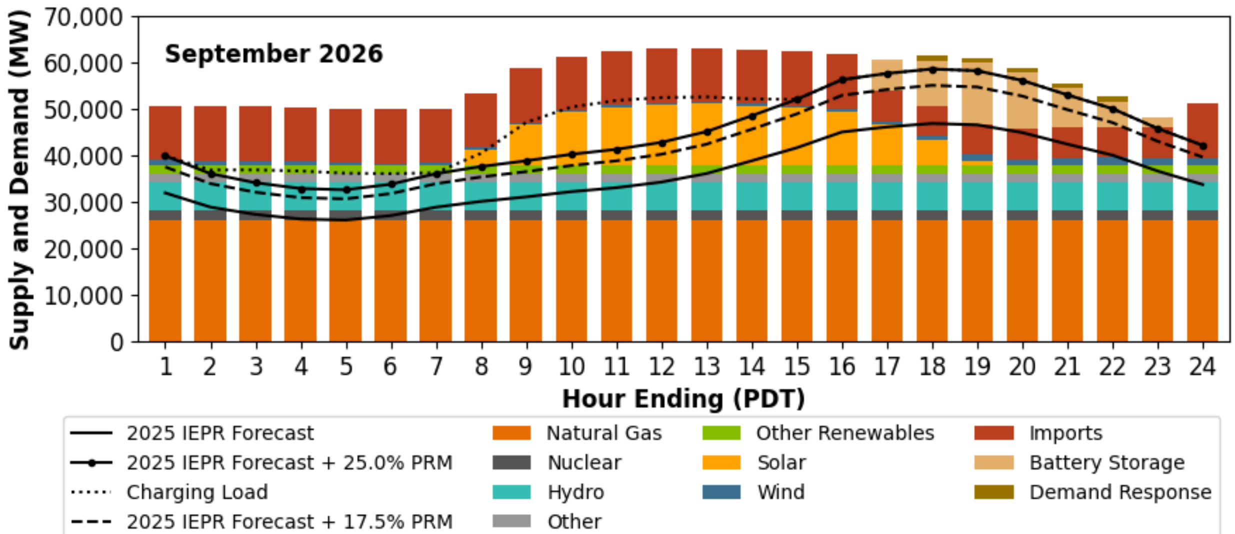
Figure 1.8 and Figure 1.9 presents multi-hour stack charts for May through September 2026 using the "All RA Eligible" portfolio. The figures show that the "All RA Eligible" portfolio can meet the CEC's 2025 IEPR forecasted demand plus a 25 percent planning reserve margin (PRM) across all summer months in 2026.

Figure 1.8 All RA eligible portfolio multi-hour stack for peak days from May to August 2026



As battery deployment continues to expand, batteries are expected to provide increasing benefits to grid operations. To evaluate the impact of battery charging on grid conditions, the CAISO estimates the additional energy required to fully charge the battery fleet prior to the evening net peak. The analysis assumes an 88 percent round-trip efficiency and optimizes charging during hours with the greatest surplus energy—typically between 8 a.m. and 3 p.m., with the specific hours varying by month. The charging load impact on the 2025 IEPR load forecast is shown as dotted lines in Figure 1.8 and Figure 1.9.

Figure 1.9 Multi-hour stack analysis for September peak day



2 Emergency Resources

California relies on a portfolio of emergency and contingency programs to support electric grid reliability during extreme events, particularly during the summer months. These programs collectively provide supplemental supply, demand reduction, and emergency assistance beyond traditional resource planning targets.

For summer 2026, supply accessible through the Electricity Supply Strategic Reliability Reserve Program (ESSRRP) and emergency assistance on the interties totals around 3,379 MW. As stated earlier, the CEC and CPUC will provide estimates of state emergency demand response programs and other contingency resources in the CEC's California Reliability Outlook published in May 2026. The CAISO details processes for operation of various emergency resources in the CAISO's Emergency Procedure 4420.[12] The following programs are discussed in-depth in a separate technical appendix.[13]

Table 2.1 Emergency supply accessible through various programs

Program	Description
Strategic Reliability Reserve (SRR) *Established in 2022 (AB 205) to secure emergency supply and demand-side resources beyond traditional planning targets for extreme events.*	**Electricity Supply Strategic Reliability Reserve Program (ESSRRP)**[14]: DWR administered emergency generation program with total capacity of 3,079 MW, which includes ~2,859 MW of OTC units available through 2026 only during EEAs or extreme events to support grid reliability in California BAAs.
	Demand Side Grid Support (DSGS) Program: CEC-administered incentive program for customer load reduction and backup generation during extreme events (May–October).
	Distributed Electricity Backup Assets (DEBA) Program: CEC program supporting clean, distributed emergency resources; projects expected to come online through summer 2027, with none available for summer 2026.
Emergency Load Reduction Program (ELRP)	Voluntary IOU-managed demand response pilot compensating customers for load reductions during CAISO-triggered emergency notifications or, in some cases, a CAISO-issued Flex Alert.
Emergency Assistance on the Interties	CAISO emergency imports from neighboring balancing authorities, with ~300 MW projected to be available in summer 2026.

[12] CAISO Operating Procedure 4420, System Emergency: http://www.caiso.com/Documents/4420.pdf

[13] 2026 Summer Assessment Technical Appendix, May 4, 2026: https://www.caiso.com/library/seasonal-assessments

[14] Draft 2026 Report of the Statewide Advisory Committee on Cooling Water Intake Structures, pp. 12, March 20, 2026: https://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/saccwis/docs/2026/saccwis-26dfrpt.pdf

NERC Energy Emergency Alert Designations

The CAISO's messaging system aligns with NERC's Energy Emergency Alert (EEA) designations. There are three levels of EEAs, which the CAISO may progress through in any order if system conditions warrant. The CAISO made this change to align its emergency levels with Reliability Coordinators and neighboring BAA procedures, and to ensure that everyone is using consistent terminology during supply shortages. Table 2.2 outlines the notification and emergency levels the CAISO currently uses.

Table 2.2 CAISO balancing authority area emergency notifications[15]

Emergency Declarations	Circumstances
CAISO BAA Declarations	
Flex Alert	A Flex Alert is a call to consumers to voluntarily conserve electricity when the CAISO anticipates energy supply may not meet high electricity demand.
Restricted Maintenance Operations (RMO)	When high demand is anticipated, the CAISO will caution utilities and transmission operators to avoid taking grid assets offline for routine maintenance to assure that all generators and transmission lines are available.
Transmission Emergency	Declared by CAISO for any event threatening or limiting transmission grid capability, including line or equipment overloads or outages.
CAISO/RC West Declarations	
EEA Watch	Analysis shows all available resources are committed or forecasted to be in use, and energy deficiencies are expected. Market participants are encouraged to offer supplemental energy. Consumers are encouraged to conserve energy. This notice can be issued the day before the projected shortfall or if a sudden event occurs.
EEA 1 (All available generation resources in use)	Real-time analysis shows all resources are in use or committed for use, and energy deficiencies are expected. Market participants are encouraged to offer supplemental energy and ancillary service bids. Consumers are encouraged to conserve energy.
EEA 2 (Load management procedures in effect)	CAISO requests emergency energy from all resources and has activated its emergency demand response programs. Consumers are urged to conserve energy to help preserve grid reliability.
EEA 3 (Using load as reserves)	CAISO is unable to meet minimum contingency reserve requirements and has asked utilities to prepare for the possibility of rotating power outages.
EEA 3 (Firm load interruption)	Energy supply is insufficient to meet demand, and utilities have been directed to initiate rotating power outages.

[15] RC West System Emergencies Procedure: https://www.caiso.com/Documents/RC0410.pdf

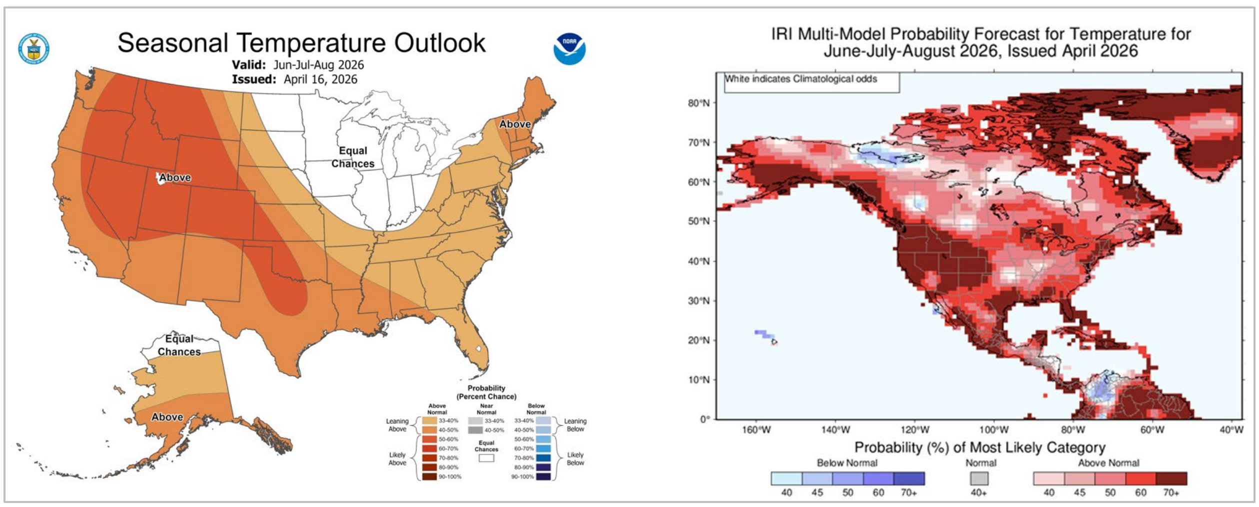
3 Weather Outlook

Weather conditions—such as temperature, cloud cover, and precipitation—directly affect system operations by influencing hydro output, renewable generation, and load. For the months of June through August 2026, forecasts show the probability of above normal temperatures across the Western U.S, with the highest chances of above normal temperatures across the Intermountain West and into the Pacific Northwest. In August and September of 2026, forecasters continue to see an increased chance of above normal temperatures across the West.

Temperature Outlook

Figure 3.1 shows the probability of above- or below-normal temperatures across the U.S. for June through August 2026, based on forecast models from the Climate Prediction Center and Columbia University. In California, the Climate Prediction Center projects varying probabilities of above-normal temperatures. Coastal regions have the lowest chances, while the inland-most areas show higher probabilities. Seasonal guidance suggests a warm start to summer in coastal and interior regions during June and July. Looking ahead to late summer and fall, forecasts indicate continued above-normal temperature potential across the West, with the highest chances remaining in the Intermountain West.

Figure 3.1 Temperature outlook for June, July and August issued by the Climate Prediction Center[16] (left) and Columbia University[17] (right)



The temperature outlook is driven by two primary factors. First, emerging climate patterns suggest equal chances of above- or below-normal conditions in the Midwest and eastern Plains, alongside above-normal temperatures in the Intermountain West. In addition, warmer-than-normal sea surface temperatures off

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[16] NOAA's Climate Prediction Center three-month temperature outlook as of April 16, 2026: https://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=3

[17] Columbia University's Climate School three-month temperature outlook, Issued April 2026: https://iri.columbia.edu/our-expertise/climate/forecasts/seasonal-climate-forecasts/

the California Coast and below-average winter snowpack can both be associated with elevated temperatures in the Intermountain West.

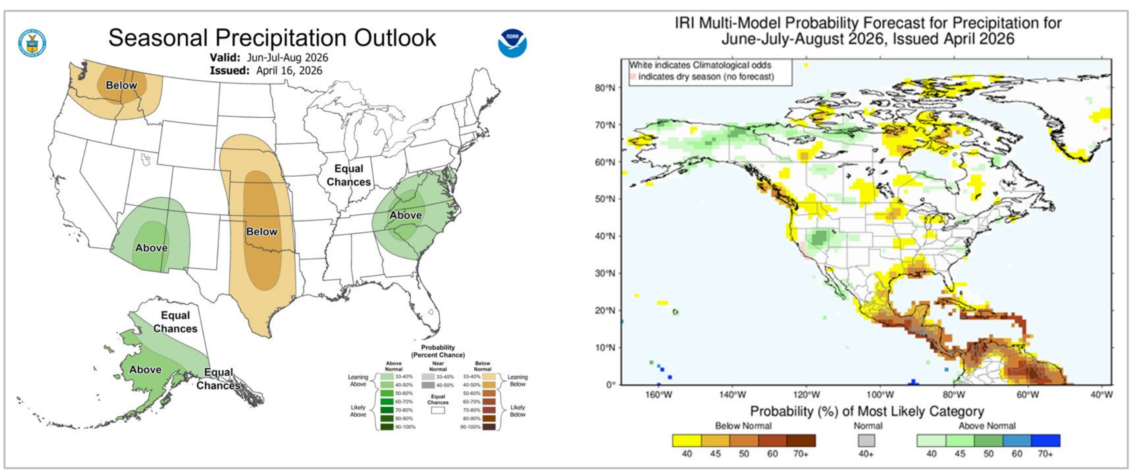
The greatest uncertainty in the Climate Prediction Center's forecast is the level of warmth along the California coast. While warmer sea surface temperatures are likely to increase overnight low temperatures, daytime highs can depend on the westward extent and persistence of the high pressure over the Intermountain West.

Confidence is higher that interior California, the Pacific Northwest, and the Intermountain West have an increased chance of above-normal temperatures. This potential is reflected in Columbia University's IRI model, shown on the right in Figure 3.1. Recent model guidance suggests that the most intense heat is more likely to occur earlier in the summer rather than later.

Precipitation Outlook

Precipitation outlooks show the probability of above-normal rainfall over the Desert Southwest and drier than normal conditions in the Pacific Northwest. Figure 3.2 shows the outlook for June through August 2026 issued by the Climate Prediction Center on the left.[18] Historically, most of California sees very little rainfall during this time, except for the southeastern deserts, which can receive moisture from the North American monsoon. The forecast shows equal chances of above or below normal precipitation across California, indicating no strong climate signals for increased summer rainfall. However, past events like Hurricane Hilary in 2023 and Hurricane Kay in 2020 show that tropical systems can still bring rainfall to the region during dry summer months. This year's warmer than normal sea-surface temperatures in the eastern Pacific suggests a more active eastern Pacific hurricane season, increasing the likelihood of tropical storms influencing rainfall and moisture across California from July through October 2026.

Figure 3.2 Precipitation outlook for June, July and August Center across the United States as of April 16, 2026



18 NOAA's Climate Prediction Center three-month precipitation outlook as of April 16, 2026: https://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=3

4 Preparation for Summer Operations

As stated earlier, the Summer Assessment report is one of many activities the CAISO undertakes each year to prepare for summer system operations. The CAISO also fine-tunes market and operational metrics to ensure the effectiveness of the planned resource fleet in times of system stress and enhances operational coordination with state agencies and the industry to access contingency reserves should the system face the risk of shortfalls due to more extreme events.

As noted, the CAISO, state entities, and stakeholders have employed a number of contingency measures to continue to improve system preparedness and performance. These include pursuing and approving procurement of additional resources, with a significant amount going into operation over the past year; ensuring existing resources are retained in service; managing planned maintenance; and improving operational coordination around resources or load reductions accessible under stressed grid conditions.[19] The CAISO processes for operation of various emergency resources are detailed in the Emergency Procedure 4420.[20] The CAISO developed a public Extreme Weather Process and Communications document, which provides detail on CAISO timelines for operational coordination and communication channels for CAISO emergency notices, which trigger the use of various emergency resources.[21]

Other activities include coordinating meetings on summer preparedness with the WECC, California Department of Forestry and Fire Protection (Cal Fire), natural gas providers, transmission operators and neighboring BAs. For 2026, the CAISO will continue to engage the appropriate entities in a tabletop exercise simulating stressed grid conditions. The CAISO's ongoing coordination with these entities helps ensure that everyone is prepared for the upcoming summer operational season.

The ISO coordinates closely with California state agencies, utilities, and regional partners on summer readiness activities. These efforts include reviewing and updating the ISO's operational playbook, which outlines processes, potential operational actions, and communication touchpoints in advance of and during a potential grid event. The ISO and its partners also engage in tabletop exercises and trainings to practice and test operational processes, communications protocols, and sequencing of various emergency programs under different operational scenarios. Planning and coordination with state and regional partners prepares us to respond to potential grid events.

[19] Summer Readiness Activities, Energy Matters blog, March 20, 2026: https://www.caiso.com/about/news/energy-matters-blog/summer-readiness-activities-are-well-underway

[20] CAISO Operating Procedure 4420, System Emergency: https://www.caiso.com/Documents/4420.pdf

[21] CAISO, Extreme Weather Event — Process and Communications: http://www.caiso.com/Documents/extreme-weather-event-process-and-communications.pdf