



Summer 2022 Reliability Landscape

June 16, 2022



Overview for CAC – Informative Only

- ⚡ Informational Presentation on key factors impacting summer 2022 reliability
- ⚡ Update the CAC on CPA Procurement and Programs that Contribute to Reliability
- ⚡ Provide CPA's perspectives on reliability and CA energy market

Factors Impacting Summer 2022 Reliability

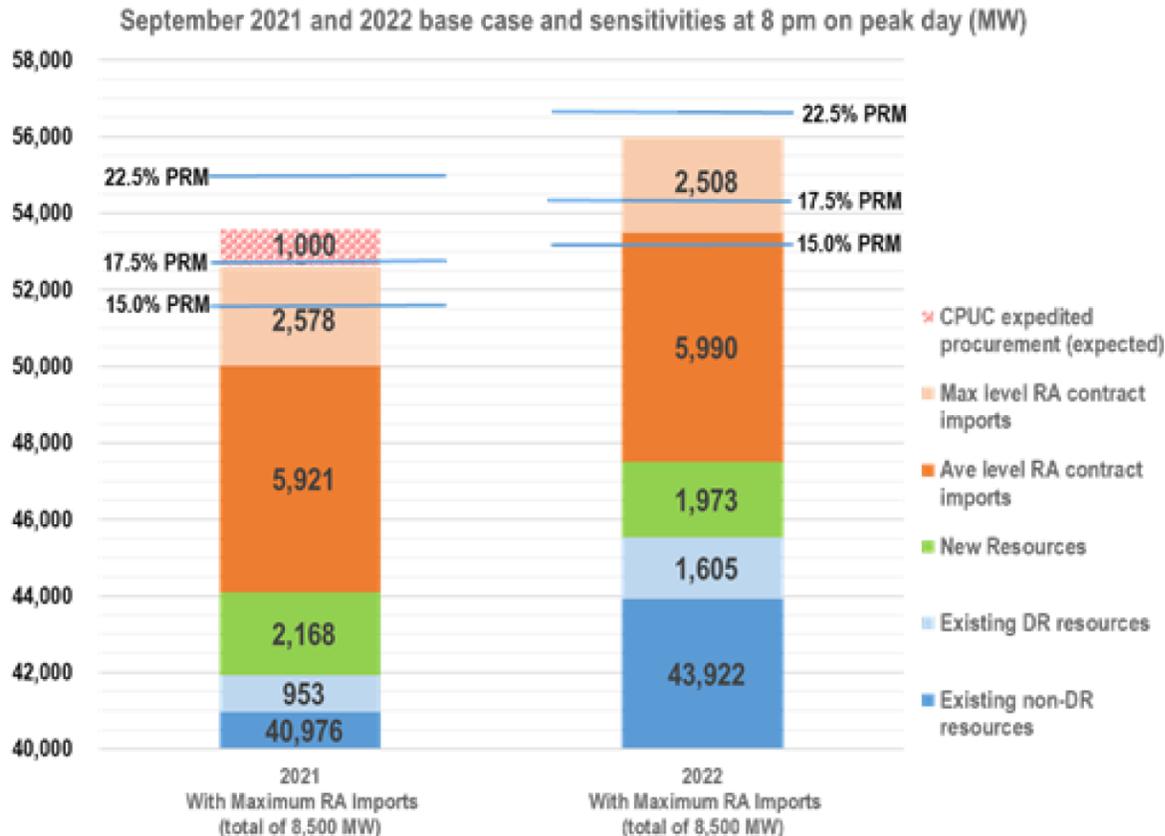
- ⚡ Potential resource shortfalls during extreme weather conditions
 - Delays to anticipated new-build resources, including supply chain issues, and recent Department of Commerce investigation on solar panel imports
 - Drought has reduced availability of hydropower resources
- ⚡ Wildfires and de-energization events



Summer Reliability Planning after August 2020 Rolling Blackouts

- ⚡ On August 14 and 15, 2020, CAISO was forced to institute rolling blackouts due to a West-wide heat wave
- ⚡ Factors contributing to the rolling blackouts were:
 - Unprecedented heat wave across the Western states resulted in demand exceeding planning targets and resources committed to the RA program
 - Equipment failures at fossil fuel plants
 - Resource planning targets have not kept pace to ensure sufficient resources can be relied upon during evening hours in an extreme weather event
- ⚡ CPUC, CEC, and CAISO have since undertaken actions to improve summer readiness
 - CPUC has mandated IOU procurement of resources higher than the existing planning reserve margin (PRM) during summer months to ensure sufficient resources are available during another extreme heat wave
 - All LSEs are directed by the CPUC to procure resources in addition to 2019 procurement order, anticipating the retirement of Diablo Canyon.
 - LSEs have been asked by the CPUC to submit monthly progress updates on resources that are supposed to be online in summers 2022 and 2023.

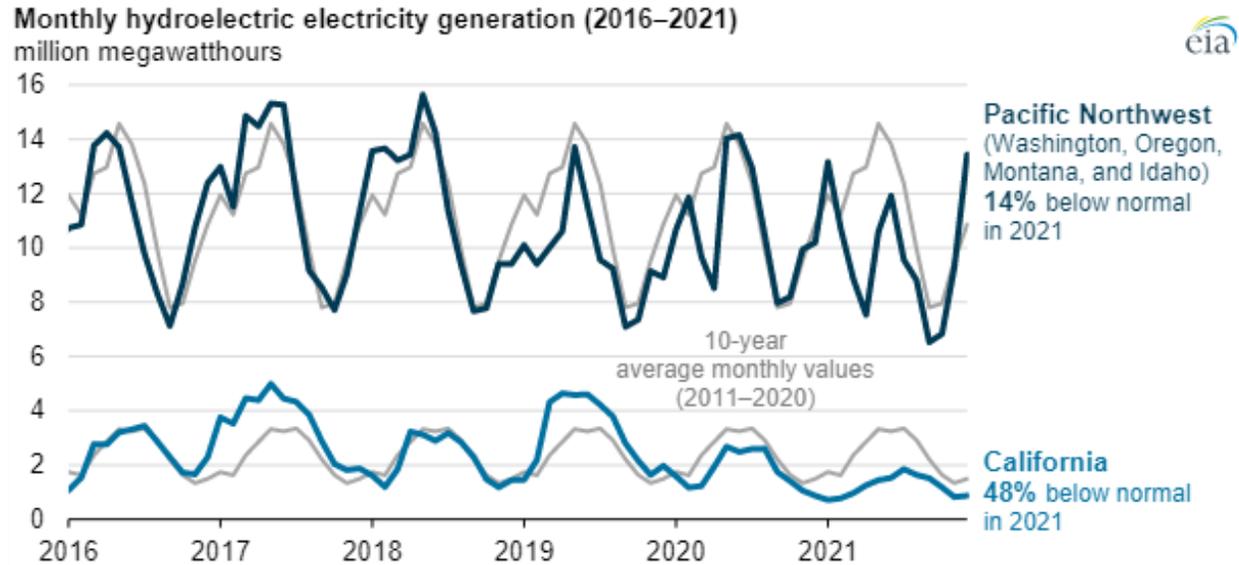
Potential Resource Constraint in Summer 2022



Source: CAISO

- ⚡ Compared to summer 2021, more resources have been added to meet the demand of summer 2022. However, if an extreme weather event like the heat wave in August 2020 occurs, California's grid remains vulnerable.
- ⚡ 2,582 MW of Net Qualifying Capacity (NQC) in September has been added to the grid, but it is offset by 1,005 MW higher load forecast than 2021 due to climate change.

Western Hydro Impacted by Drought



- ⚡ In 2021, California's monthly hydro electricity generation was 48% below normal, based on the 10-year average.
- ⚡ Current hydro condition is third year below normal in California. Snowpack on April 1, 2022 was 38% of average, compared to 2021's 60% of average on April 1, 2021.
- ⚡ Pacific Northwest hydro reservoirs are projected to be 94% of average.

Conditions Impacting Clean Energy Development

- ⚡ Renewable energy developers are facing several challenges in delivering on new build projects, particularly for projects with 2022-2024 online dates.
 - Interconnection delays
 - Ongoing pandemic-related supply chain impacts
 - U.S. trade actions
 - Rising commodity prices, further exacerbated by the Ukraine War
 - Investment Tax Credit (ITC) uncertainty
- ⚡ Any one of these factors significantly impact project risk; compounded, they are posing unprecedented challenges
- ⚡ CAISO estimates 600 MWs of resources with original operational date in 2022 have been delayed.



Wildfire Potential in California

- ⚡ Significant wildfires potential across the state– higher than average temperature so far, and summer temperature forecast to be above normal.
- ⚡ Drought continues to worsen in most of Southern California, except in areas south of Los Angeles County and west of mountains.
- ⚡ Wildfire risk and extreme weather could potentially cause 4,000-5,000 MW of resources to be offline. In July 2021, 4,000 MW of hydro imports were lost due to OR wildfires.
- ⚡ SCE's ongoing grid hardening work would likely reduce Public Safety Power Shutoff (PSPS) events– SCE estimated that the grid hardening work reduced the number of customers de-energized by 44% in 2021.



CPA Procurement Efforts to Mitigate Development Risks

- ⚡ CPA has brought online additional 562 MW of new generation, and 150 MW of new battery storage resources since 2018
 - 200 MW of new generation and 150 of new storage achieved COD between October 2021 and June 1, 2022
 - CPA anticipates additional 232 MW storage will be online in summer 2022
- ⚡ The CPA long-term resource portfolio includes 1,147 MW of solar and 779 MW of storage resources not yet online
- ⚡ CPA has been actively working with developers to assess project delays
 - CPA has received Force Majeure notices from numerous projects related to the Dept. of Commerce, WRO, COVID-19, and supply chain issues
 - CPA may need to negotiate project Commercial Operation Date (COD) extensions and other terms with developers to avoid project terminations, which would make problems worse in 2023 and beyond
- ⚡ CPA has requested assistance from Governor's Office and CPUC staff whenever appropriate to help shorten project delays



CPA's Power Response Program

Power Response is CPA's main demand response program

- ⚡ Customers Receive signup incentives, reduce strain on the grid and greenhouse gas emissions when participating in demand response events
- ⚡ Smart devices: Customers receive incentives for signing for devices (thermostats, EV charging, etc.) and participating in automated demand response events. Customers also receive annual incentives for participation
- ⚡ Behavioral Demand Response (BDR): Target of 3,000 participants. Participants will receive participation-based incentives after demand response events, and may be eligible for additional incentives
- ⚡ Power Response could result in reducing CPA's load by 3.2 MW in 2022, and 6.2 MW in 2023



CPA Messaging on Reliability

- ⚡ CPA has met all of its reliability obligations, while adding new added new supply to the grid since last summer
- ⚡ Programs and communications for customers will be be part of the solution for managing demand; CPA is focused on these efforts
- ⚡ This year the grid is in better shape; CPA and others have added new capacity and no significant new retirements have reduced supply
- ⚡ Climate change/drought are demand and supply problems respectively that strain the ability of CAISO to keep the lights on
- ⚡ Outages, if they occur, will likely come from a confluence of events
 - There is barely enough supply to meet demand during the hottest days this summer
 - If anything goes wrong during a heatwave (wildfires, unplanned transmission or generation outages, insufficient demand response), power outages could be the result
- ⚡ California waited too long to plan for these issues, leaving very little margin for error, making the grid more vulnerable to supply chain issues and other global challenges
- ⚡ The planning paradigm is beginning to catch up with events, but it will take a few years to bring enough new capacity online to provide a sufficient margin of safety on the grid



Questions

