

Combined Energy Resource Planning & Procurement Actions May 2021

| Responsible Entity | Actions | Milestone(s) | Status |
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| CPUC | <p>Emergency Reliability Rulemaking (R.20-11-003). This proceeding was initiated to establish policies, processes, and rules to ensure reliable electric service in California in the event of an extreme weather event in 2021.</p> <ul style="list-style-type: none"> ▪ In a February 11, 2021 decision (D.21-02-028), the CPUC directed the state's three large investor-owned utilities (IOUs) to seek contracts for additional supply-side capacity. The IOUs filed Advice Letters seeking approval for approximately 564 MW by summer 2021. The CPUC approved those contracts on March 18. ▪ On March 25, 2021, the CPUC approved and directed (D.21-03-056) the IOUs to take multiple actions to avert the potential need for rotating outages in the summers of 2021 and 2022, including launching a new statewide Emergency Load Reduction Program pilot, modifying the IOUs' existing demand response and Critical Peak Pricing programs, funding a new statewide Flex Alert paid-media campaign, and authorizing additional capacity procurement to meet an increased planning reserve margin of 17.5 percent. ▪ On April 6th, the IOUs facilitated a public workshop with CCAs to discuss Critical Peak Pricing programs and alternative load shedding programs for Summer 2021. ▪ This proceeding remains open to evaluate and consider the adoption of additional party proposals in time for summer 2022. <p>More information on R.20-11-003 is available at: https://www.cpuc.ca.gov/summerreadiness/</p> | <p>Approve IOU Advice Letters by mid-March 2021</p> <p>CPUC vote on proposed decision on March 25, 2021</p> <p>IOU procurement and program implementation</p> | <p>Completed</p> <p>Completed</p> <p>In progress</p> |

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| CPUC | <p>Project Progress Tracking. The CPUC is tracking progress on generation and battery storage projects that are currently under construction in California to ensure there are no CPUC-related regulatory barriers that would prevent them from being completed by their targeted online dates.</p> <ul style="list-style-type: none"> ▪ In November 2020, the CPUC prepared an analysis and slide deck on new resources in development across multiple proceedings, available at: https://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6442466860 ▪ In Q2 2021, the CPUC will be releasing an aggregation of the data collected from Integrated Resource Plans filed by load-serving entities (LSEs) in September 2020. The will data include information on existing, development, and planned resources. ▪ The CPUC is also tracking progress against the 3,300 MW NQC (Net Qualifying Capacity) procurement ordered in D.19-11-016. On February 1, 2021, LSEs that elected to self-provide their procurement obligation submitted reports to the CPUC on the status of their projects. CPUC staff is working to quality control and analyze this data. In these updates, LSEs confidentially provided detailed information regarding the cause of any delays and plans for remediation. In Q2 of 2021, the CPUC will use the data from the February 2021 filings to determine whether any of the projects under D.19-11-016 have suffered delays or failure that necessitate the need for backstop procurement. | <p>Release IRP LSE data aggregation by Q2 2021</p> <p>Determine whether backstop procurement is necessary by Q2 2021</p> | In progress |
| CPUC | <p>Improve Load Scheduling Accuracy – The CPUC is exploring technical solutions that may be needed to allow its jurisdictional IOUs to provide customer usage data to community choice aggregators (CCAs) and</p> | <p>Ongoing conversations with IOUs, CCAs, and ESPs</p> | In progress |

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| | energy service providers (ESPs) more frequently to improve load scheduling accuracy. | | |
| CPUC | Replacement Resources for Diablo Canyon – The CPUC directed all CPUC-jurisdictional LSEs to submit Integrated Resource Plans that include procurement of their share of replacement power for the retirement of the Diablo Canyon Nuclear Power Plant. On February 22, 2021, the CPUC issued a ruling in the IRP proceeding seeking feedback on mid-term reliability analysis and proposed procurement requirements for LSEs. The ruling recommends that the CPUC order procurement of 7,500 MW of new net qualifying capacity to come online in the years 2023–2025. The CPUC hosted a workshop on this ruling to facilitate dialogue with stakeholders ahead of the party comment deadline. A proposed decision on replacement resources for Diablo Canyon is expected in Q2 of 2021. | Issue Proposed Decision in Q2 2021 | In progress |
| CPUC | Resource Adequacy (RA) Rulemaking (R.19-11-009) – The CPUC hosted several workshops in February 2021 on reliability proposals/topics including planning reserve margin, import rules, hybrid resource qualifying capacity rules, demand response qualifying capacity rules, changes to the RA penalty structure, and larger structural changes to the RA framework. A proposed decision in this proceeding is expected in June of 2021. | Issue Proposed Decision in June 2021 | In progress |
| CPUC | Integrated Resource Planning (IRP) Procurement Framework – The CPUC hosted a workshop in December 2020 on a proposal regarding how the CPUC would order procurement to complement the procurement by LSEs in response to the planning track activities of IRP and various CPUC procurement programs. This proposed framework is intended to provide a conceptual foundation for all future procurement informed by the IRP process. The February 22, 2021 ruling on mid-term reliability referred to above seeks feedback from stakeholders on “phase one” of the proposed framework, i.e., that relating to procurement in the current cycle of IRP. | Review party comments | In progress |

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| CPUC, CAISO | <p>Flex Alert public awareness campaign – Following approval of funding in the Emergency Reliability Rulemaking (R.20-11-003), the CPUC has been working with the CAISO and the selected vendor to refresh and strengthen the voluntary, consumer energy conservation program.</p> <ul style="list-style-type: none"> • By mid-June, the campaign is expected to launch to coincide with the beginning of summer. • Advertisements will be strategically placed to reach households throughout the state and stress the importance of conservation. Advertisements will contain strategies – such as pre-cooling homes and businesses – to conserve energy and minimize discomfort. • We are encouraging everyone to sign up for Flex Alert notifications at FlexAlert.org, which will send out alerts by text or email. | Mid June - launch | In progress |
| CAISO | <p>Summer 2021 Readiness Leadership Roundtable – On April 15, the CAISO hosted a discussion with leaders from utilities and organizations with whom the CAISO has a direct operational relationship. The focus was to review the lessons learned from last summer's west-wide heat wave and rotating outages in California; to outline the work being done in response to the Final Root Cause Analysis; and to determine if there are additional individual or collective actions that can be taken to further support reliable operations this summer.</p> <p>Participants detailed steps they are taking to fortify grid operations since last summer. A common understanding of challenges and risks was established, as well as a commitment to deeper collaboration and coordination given the interconnected nature of the Western grid, particularly the interdependency of shared resources in tight supply conditions.</p> | | Completed on April 15, 2021 |
| CAISO | <p>Operational Exercise - On April 21, CAISO operations hosted a “tabletop exercise” with adjacent balancing authorities to test preparedness and communication procedures for a range of potential scenarios prior to the approaching summer weather. Additional exercises will be scheduled.</p> | | Completed on April 21, 2021 |

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| CAISO | <p>Market Enhancements for Summer 2021 Readiness – As noted in last month's report, the CAISO Board of Governors approved a package of market enhancements to prepare for this upcoming summer. The package was filed at the Federal Energy Regulatory Commission (FERC) on March 26.</p> <p>On April 21, the CAISO Board of Governors approved additional market enhancements that refine the prioritization of energy imports, exports, and transfers through the CAISO's balancing authority area. These changes consist of how exports cleared in the day-ahead residual commitment process are prioritized relative to CAISO load in the real-time market, enhancing requirements for designating non-resource adequacy capacity backing high priority export schedules, and market prioritization of wheel-through self-schedules. The additional market enhancements were filed at FERC on April 28.</p> <p>On April 27 and 29, the CAISO offered two training opportunities to review the market enhancements and business process changes. Topics included RDRR dispatch and real-time price impacts, management of storage resources during tight system conditions, interconnection process enhancements, import market incentives during tight system conditions, real-time scarcity pricing enhancements, OASIS report showing gross exports and imports by intertie, and Today's Outlook enhancements.</p> <p>A video file recording of the webinar is available in the CAISO Learning Center at http://www.caiso.com/participate/Pages/LearningCenter/default.aspx.</p> | <p>Approved by the CAISO Board of Governors March 24</p> <p>Approved by the CAISO Board of Governors April 21</p> | Implementation summer 2021 |
| CAISO | <p>Operating Procedure 4420 Modifications – The CAISO is developing criteria that will allow the use of firm load to meet the North American Electric Reliability Corporation (NERC)-required contingency reserves and the dispatch of procured spinning reserve resources. This will allow the CAISO to minimize, if not avoid, the shedding of firm load during periods of resource deficiency. These criteria will be incorporated into the CAISO</p> | Drafting modifications to Operating Procedure 4420 | In progress |

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| | Operating Procedure 4420 Alerts, Warnings, and Emergencies. Note, on April 15, FERC approved modification to WECC- BAL-002-WECC-3 permanently approving modification to governing standard. | | |
| CAISO, CEC | Increased Coordination with Non-CPUC-jurisdictional Entities Regarding Additional Procurement – The CAISO and CEC have begun outreach to understand the procurement positions of non-CPUC-jurisdictional entities and concerns, if any, for summer 2021. Thus far, non-CPUC jurisdictional entities surveyed have <i>de minimis</i> levels of solar penetration and largely rely on dispatchable renewables and hydro. Nonetheless, a limited number of non-CPUC local regulatory authorities have voluntarily increased their planning reserve margins or components thereof in preparation for summer. | Conducted outreach to non-CPUC jurisdictional entities | In progress |
| CAISO | Further Analysis of Proxy Demand Response (PDR) and Reliability Demand Response Resource (RDRR) Performance – The CAISO has reached out to demand response providers to better understand the discrepancy between metered load drop from summer 2020 versus credited and shown resource adequacy amounts. As a consequence, the CAISO is implementing baseline adjustments through targeted controlled group methodology changes and changes to the adjustment factors used in the baseline calculations as permitted under the CAISO tariff. The CAISO will coordinate as necessary with demand response providers as well as with the CPUC so that the CAISO's baseline adjustment works well with the CPUC's new pilot Emergency Load Response Program. | Conducted outreach to demand response providers and considering next step options | In progress |
| CAISO | Credits Against Resource Adequacy Obligations – The CAISO continues to work with the CPUC, local regulatory authorities, and stakeholders to resolve issues around resources credited against resource adequacy requirements. | Targeted resolution August 1, 2021 | In progress |
| CAISO | Resource Adequacy Market Rule Enhancements – As noted in last month's report, the CAISO Board of Governors approved the first phase of the resource adequacy enhancements initiative that included | Approved by the CAISO Board of | Implementation |

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| | <p>enhancements for this summer. These changes were filed with FERC on March 29.</p> <p>On April 21, the CAISO offered a training opportunity to review the first phase of the resource adequacy enhancements and business process changes. The initiative covered three changes: 1) refinements to the existing planned outage process; 2) a minimum state of charge requirement for storage resources; and 3) backstop procurement authority for local energy sufficiency.</p> <p>A video file recording of the webinar is available in the CAISO Learning Center at http://www.caiso.com/participate/Pages/LearningCenter/default.aspx.</p> | Governors March 24 | Summer 2021 |
| CAISO | <p>Hybrid and Co-located Storage Resource Enhancement – On November 18, the CAISO Board of Governors approved the second phase of policies to support and enable the use of hybrid and co-located resources, which comprise a significant portion of the new capacity expected to be online by summer 2021. The Federal Energy Regulatory Commission approved the first phase of this effort and the CAISO implemented these changes on December 1. The second phase of this effort will be implemented in Spring 2022. On December 17, the CAISO Board of Governors approved a methodology for calculating cost-based bids to which storage resources may be mitigated. This enhances the CAISO's ability to efficiently dispatch storage resources through its market.</p> | <p>First phase completed on December 17, 2020</p> <p>Second phase to be implemented Spring 2022</p> | In progress |
| CAISO | <p>Energy Storage Initiative – On April 28, the CAISO launched an initiative to explore market reforms to integrate large amounts of commercial-scale battery storage onto the grid over the next few years. The CAISO is projecting quadruple the amount of battery storage on its system from late last year to this summer. At the end of 2020, the CAISO had about 250 MW of storage resources -- primarily 4-hour batteries -- connected to the grid. It currently has about 500 MW on its system and expects to have a total of 2,000 MW by August 1. This growth requires changes in the</p> | | In progress |

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| | CAISO market to allow storage to be competitive and to fairly compensate developers and operators. The market changes would create a test case in the first such critical mass adoption of storage technology. | | |
| CAISO | Reliability Must-run (RMR) Designation to Preserve Grid Reliability in 2021 – In addition to the 250 MW power plant approved as a Reliability Must Run (RMR) resource by the CAISO Board of Governors in December 2020, the Board voted on March 24 to designate a 34.5 MW power plant as a system RMR resource to help ensure the reliable operation of the transmission system in 2021 and prevent its imminent retirement. The CAISO’s analysis concluded that the capacity provided by the RMR designation is necessary to maintain system-wide reliability needs and meet NERC and WECC operational standards, especially during the summer evenings. | | Completed on March 24, 2021 |
| CEC | CEC 2020 CA Electricity Demand Update – The CEC adopted the California Energy Demand 2020-2030 Forecast Update at its January 25 business meeting. This update to the previously adopted electricity demand forecast incorporates an additional year of historical data, more recent economic and demographic outlooks, and revised vehicle electrification, self-generation and battery storage forecasts. It also includes revised hourly and monthly peak electricity demand for the CAISO control area, as well as annual peak forecasts for 1-in-2, 1-in-5, 1-in-10 and 1-in-20 weather scenarios. Additionally, as part of the 2020 IEPR, staff conducted an exploratory analysis which found that 1-in-30 temperature conditions would lead to, on average, a 1.1 percent increase in peak load beyond what would be expected for a 1-in-20 temperature event. | Volume III (demand forecast) of the 2020 IEPR was adopted at the March 17, 2021 CEC Business Meeting. | Completed |
| CEC | Electric Program Investment Charge (EPIC) Reliability Research and Development – CEC invested \$74M to develop technologies to support demand flexibility. The grants are anticipated to result in 25MW of flexible | Awarded Grants | Completed |

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| | demand capacity from commercial and residential customers and 18MW from irrigation pumping load shift this summer alone. | | |
| CEC, CPUC | <p>Efficiency Improvements to the Natural Gas Powerplant Fleet – On December 2, the CEC, in collaboration with the CPUC, and in coordination with the CAISO, hosted a workshop to highlight to electricity stakeholders a range of options for incremental upgrades at existing natural gas power plants to increase their capacities to help address potential generation supply concerns for Summer 2021 and beyond. The workshop highlighted several projects that add up to 100 MW of additional capacity that could be available for Summer 2021. Since the workshop, the CPUC's Expedited Procurement proceeding provided a contracting opportunity for these resources, and over 100 MW of these resources have been approved by the CPUC to date.</p> <p>CEC's STEP Division is currently reviewing and approving petitions for 122 MW of incremental efficiency upgrades at seven powerplants and another 23.5 MW of equipment upgrades from battery energy storage systems. Up to 89 MW are expected to be available by the start of Summer 2021.</p> | <p>The CPUC's Expedited Procurement proceeding provided a contracting opportunity for these resources. Over 100 MW of these resources have been approved by the CPUC to date.</p> <p>The CEC has reviewed and approved multiple requests for software and equipment improvements for these projects, and additional requests are expected prior to summer.</p> | In progress |
| CEC, CPUC, CAISO | Integrated Energy Policy Report Workshop – Summer 2021 Reliability – The CEC, CPUC, and CASIO hosted a joint IEPR workshop. The workshop | May 4 Workshop | Completed |

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| | <p>provided an overview of CEC and CAISO analysis of summer reliability conditions and actions being taken to ensure reliability for Summer 2021. In addition to updates from CEC, CPUC, and CAISO, partnering entities, such as the California Department of Water Resources, Los Angeles Department of Water and Power, Northern California Power Agency, and Balancing Authority of Northern California provided overviews of their efforts to support reliability in the state in 2020 and their activities to support summer 2021 reliability.</p> | | |
| All | <p>Demand Response Round Table – The CAISO, CEC and CPUC held a second Demand Response Round Table with industry stakeholders to discuss strategies to maximize the potential of demand response in the short and long term.</p> | | <p>Completed on March 16, 2021</p> |