

DOCKETED	
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ITEM 3: Final Root Cause Analysis of the Mid-August 2020 Extreme Heat Wave

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February 19, 2021



Average Temperatures

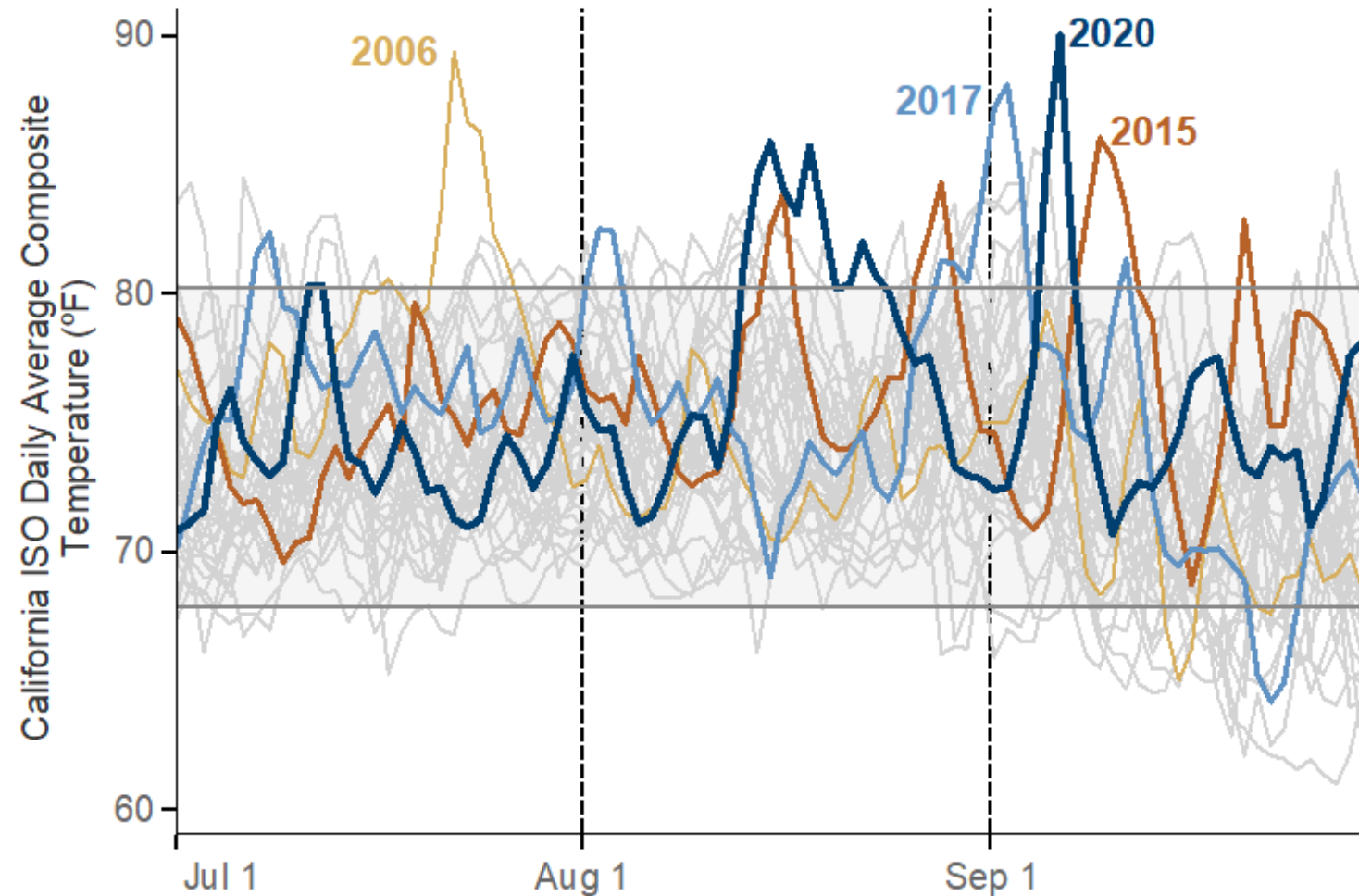
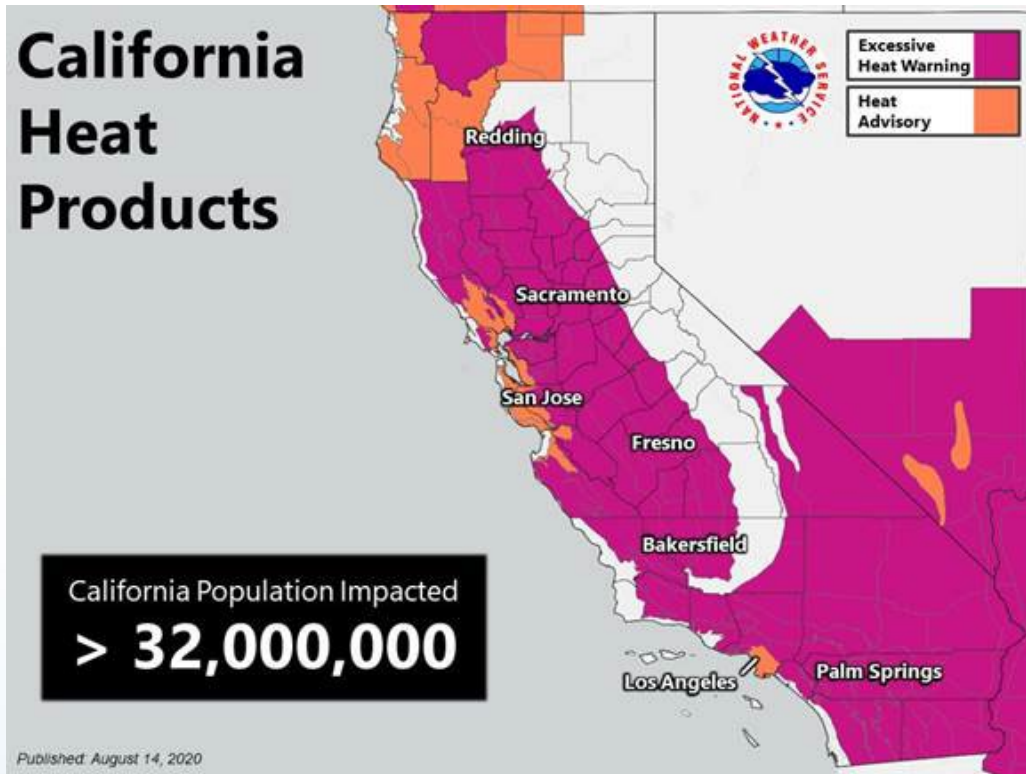


Figure ES.1: July, August, and September Temperatures 1985 - 2020

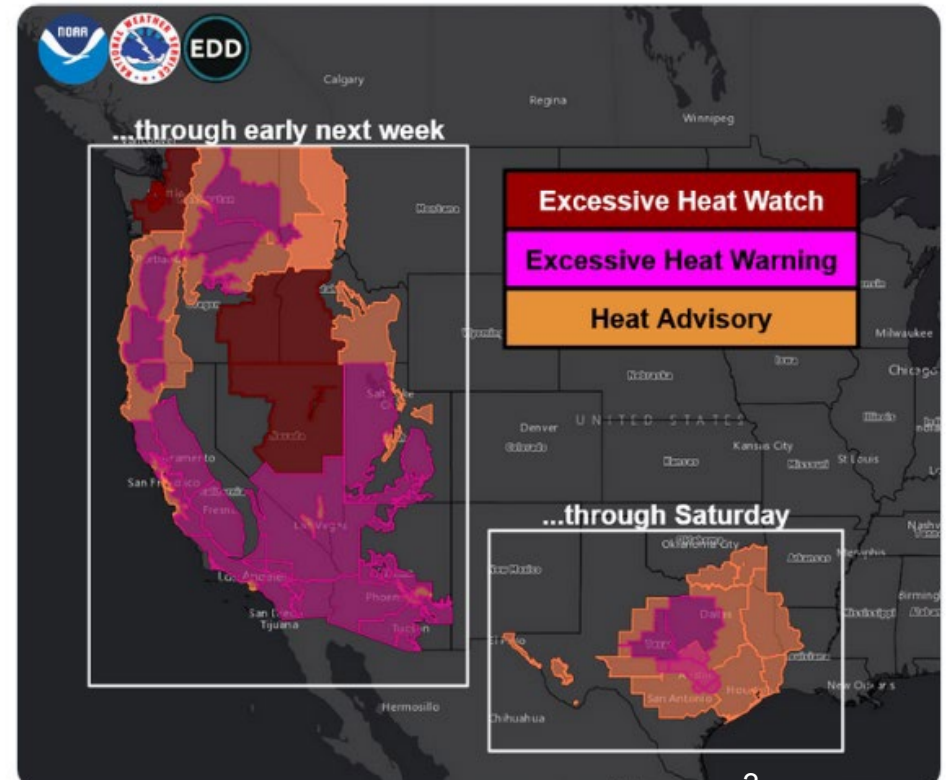


Impact of Outages



NWS Weather Prediction Center
@NWSWPC

Over 80 million people are within an Excessive Heat Watch/Warning or Heat Advisory today. Extreme heat will significantly increase the potential for heat related illnesses, particularly for those working or participating in outdoor activities. Remember to stay hydrated!





Impact of Outages

Table 3.1: CPUC-Jurisdictional Customers Affected by August 14 Rotating Outages

Customers	CAISO-initiated rotating outage (MW)	IOU actual response (MW)	Time (in mins)	Start	Finish
SCE	132,000	400	63	6:56 PM	7:59 PM
PG&E	300,600	460	~150	6:38 PM	~9:08 PM
SDG&E	59,000	71.6	~15-60		
Total	491,600	931.6	15 to 150 mins		

Table 3.2: CPUC Jurisdictional Customers Affected by August 15 Rotating Outages

Customers	CAISO-initiated rotating outage (MW)	IOU actual response (MW)	Time (in mins)	Start	Finish
SCE	70,000	200	8	6:43 PM	6:51 PM
PG&E	234,000	230	~90	6:25 PM	~7:55 PM
SDG&E	17,000	35.8	~15-60		
Total	321,000	465.8	8 to 90 mins		



What happens in a supply shortage?

- Stages 2 emergency
 - All mitigation actions taken
 - CAISO unable to provide for expected energy requirements.
- Stage 3 emergency
 - CAISO unable to meet minimum contingency reserve
 - Load interruption imminent/in progress
 - Notice to utilities of interruptions



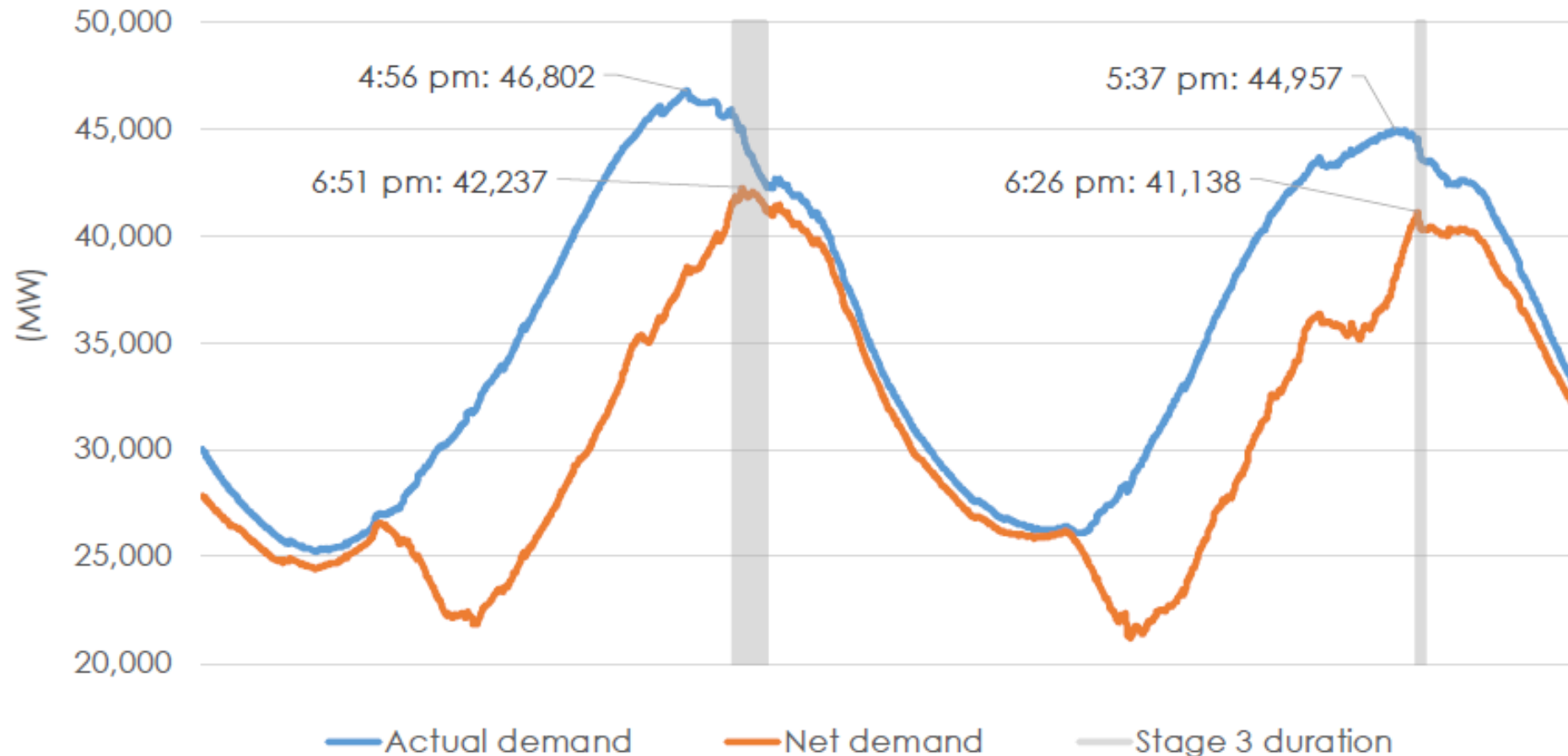
Root Causes for Shortage

- Increased demand above planning targets
- Planning targets have not resulted in sufficient resources to meet demand in early evening hours of extremely hot days
- Several practices in the energy markets exacerbated supply challenges under highly stressed conditions



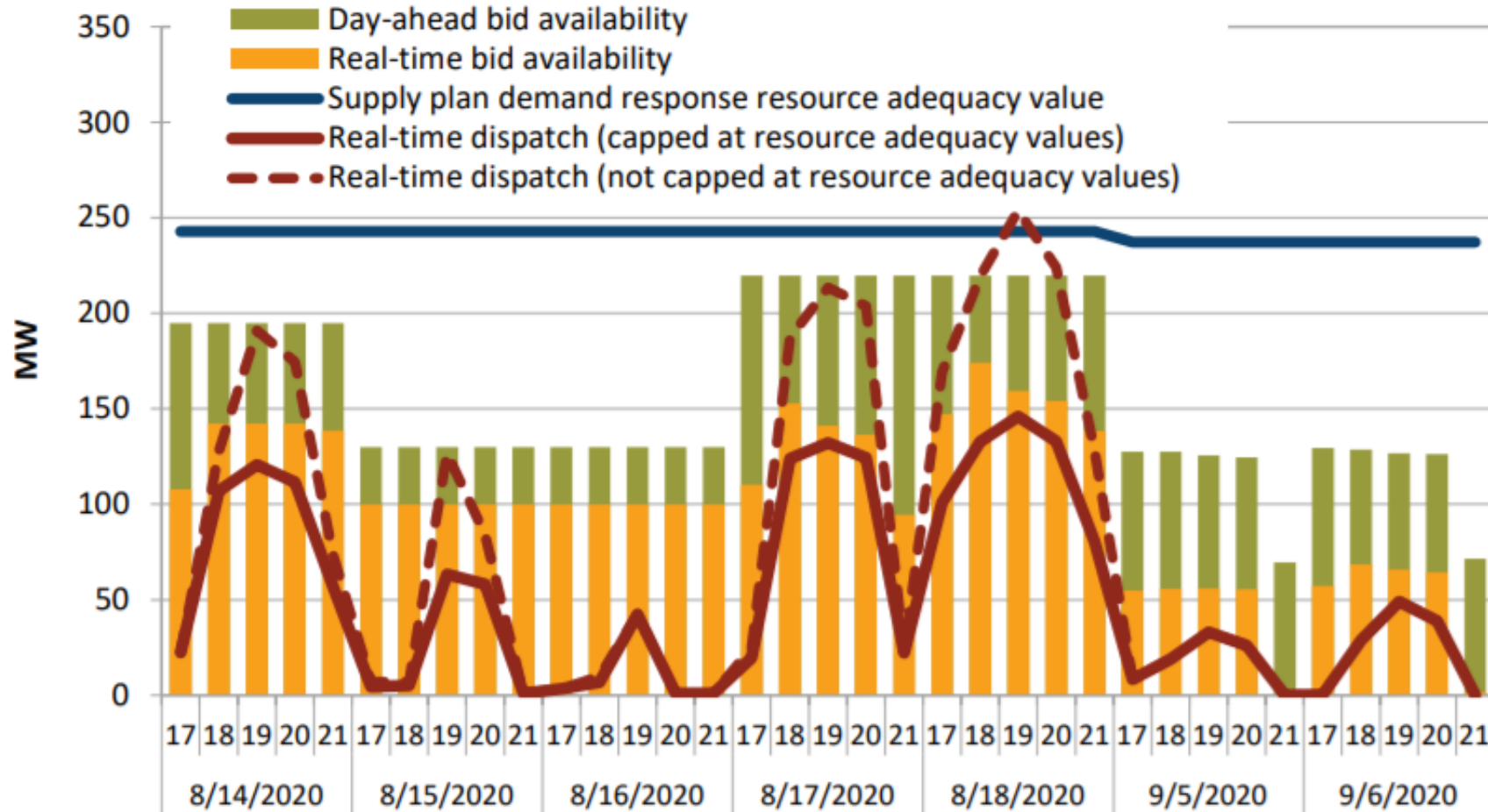
Planning to Peak vs. Net Peak

Figure 4.3: Demand and Net Demand for August 14 and 15





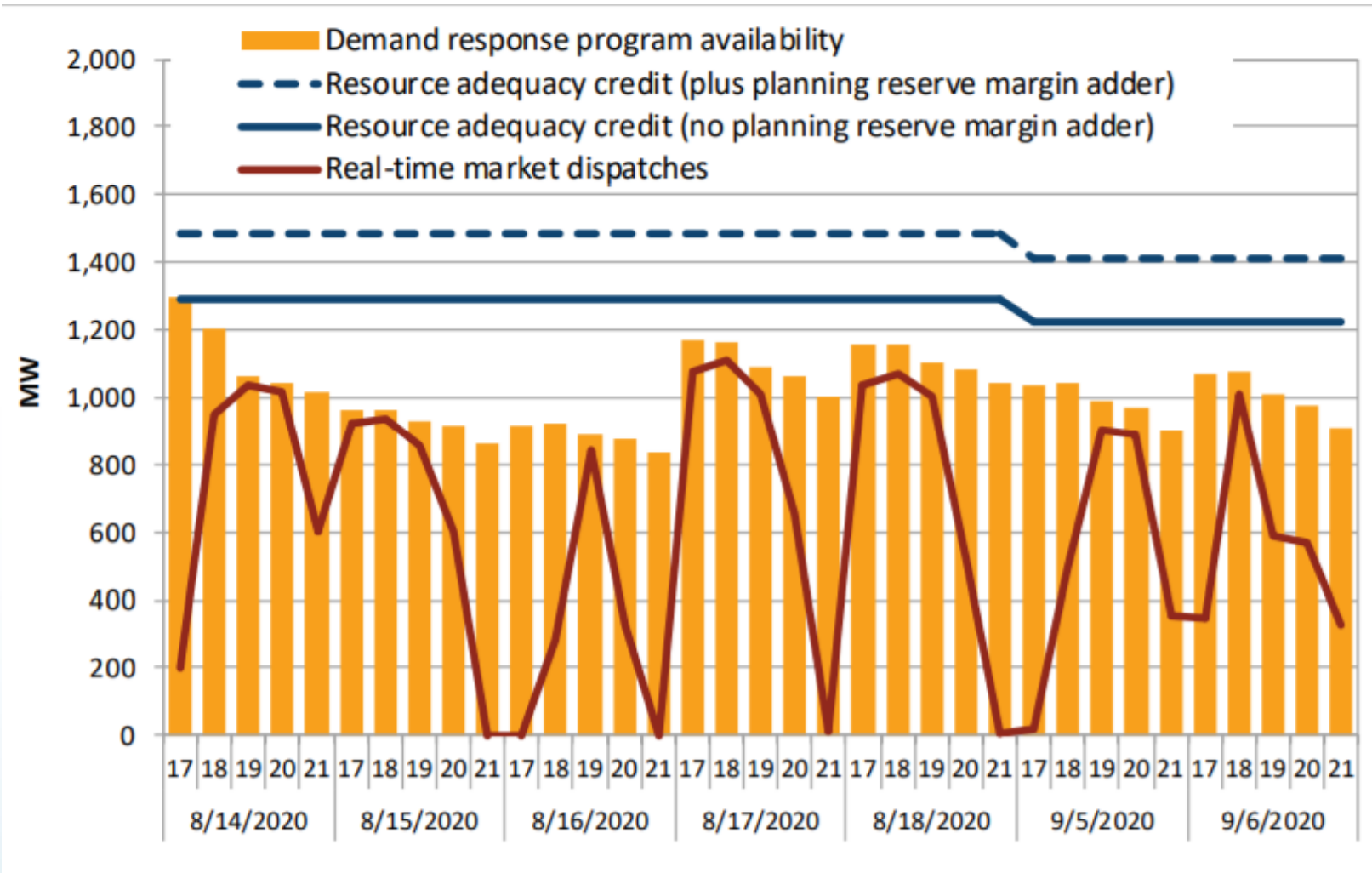
Real Time Performance of Demand Response



Source: CAISO Department of Market Monitoring



Real Time Performance of Reliability Demand Response



Source: CAISO Department of Market Monitoring



Actions Underway for Summer 2021

- Continue to track and approve projects currently under development to help ensure project completion by their target online dates
- CPUC Emergency Reliability rulemaking (R.20-11-003)
- CAISO expedited stakeholder process on market rules and practices
- CEC conducting probabilistic studies that evaluate the loss of load expectation on the California system
- CAISO, CEC, and CPUC improvements to future coordination, including communication protocols and development of a contingency plan

Additional Actions for Summer 2021:

- CEC and CAISO to coordinate with non-CPUC-jurisdictional entities to encourage additional necessary procurement
- CAISO, CPUC, and CEC planning to enhance the efficacy of Flex Alerts



Thank you.

