



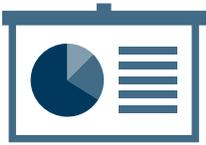
August 2020 Heatwave Event

August 2020 Heatwave Event Report



From August 14 through August 19, 2020, an intense and prolonged heatwave affected many areas in the Western Interconnection. Above-average temperatures caused increased electricity demand in the West, straining generation and transmission capacity. Imports that are typically available under normal conditions were reduced, further straining the system. While load shed was limited to California, the August heatwave affected the entire Western Interconnection.

EEA Event Timeline August 2020 Heatwave Event



During the August 2020 heatwave, Balancing Authorities (BA) in the Western Interconnection faced demands that were higher than expected. Some BAs struggled to find enough generation and were placed in an Energy Emergency Alert (EEA) to request assistance as they exhausted all other resources to meet demand. These charts show the initiation of EEAs over the six days of the event.

All videos are based on actual data collected during and immediately after the event. This data is compared to Summer 2020 forecasts prepared in March 2020 with data collected through WECC's Loads and Resources data request. The values are given as percentages above or below their expected forecast values (a 1-in-2 probability) and are shown in Mountain Standard Time.

Renewables—Actual vs. Same-Week Forecast



This is a comparison of expected forecast renewable generation (1-in-2 probability) to actual renewable generation from August 14 through August 19 for the entire Western Interconnection. Total renewable generation was near forecast levels (47th percentile on average) during the event.

This video shows the hour-to-hour variations between actual renewable generation and renewable generation forecast. To do this, WECC compared actual hourly renewable generation for each day of the event to renewable generation for corresponding days in the forecast.



August 2020 Heatwave Event

Wind—Actual vs. Same-Week Forecast



This is a comparison of the forecast wind generation (1-in-2 probability) to actual wind generation from August 14 through August 19 for the Western Interconnection. Wind generation increased over the course of the event.

This video shows the hour-to-hour variation between actual wind generation and wind generation forecast. To do this, WECC compared actual hourly wind generation for each day of the event to hourly wind generation for corresponding days in the forecast.

Solar—Actual vs. Same-Week Forecast



This is a comparison of the solar generation forecast (1-in-2 probability) to actual solar generation from August 14 through August 19 for the Western Interconnection. In general, solar generation decreased over the course of the event.

This video shows the difference between actual solar generation and the solar generation forecast. To do this, WECC compared actual hourly solar generation for each day of the event to hourly solar generation for corresponding days in the forecast.

Hydro—Actual vs. Same-Week Forecast



This is a comparison of the hydro generation forecast (1-in-2 probability) to actual hydro generation from August 14 through August 19 for the Western Interconnection. Overall, hydro generation was far below forecast levels (48th percentile on average) during the event.

This video shows the geographical variation of actual hydro generation to the expected forecast. To do this, WECC compared actual hourly hydro generation for each day of the event to hourly hydro generation for corresponding days in the forecast.



August 2020 Heatwave Event

Demand– Actual vs. Same-Week Forecast



This is a comparison of the forecast demand to actual demand from August 14 through August 19 for the Western Interconnection. Demand during the heatwave was exceptionally high compared to the summer peak forecast. This video shows the discrepancy between actual demand and demand forecast. To do this, WECC compared actual hourly demand for each day of the event to hourly demand for corresponding days in the forecast.

Demand– Actual vs. Peak-Week Forecast



This is a comparison of the expected forecast demand for the peak week (July 17 through July 22) to the actual demand each day of the heatwave (August 14 through August 19), for the Western Interconnection. Unprecedented demand levels, compared to a forecast peak event based on historical actuals, remained above the 95th percentile for four days, including at night.

This video shows the discrepancy between the actual demand during the event and the forecast demand for the peak week. To do this, WECC compared actual hourly demand from the peak week in 2020 (August 14 through August 19) to the forecast hourly demand from the peak week in 2020 (July 17 through July 22). For example, the actual demand for the first day of the peak week (Friday, August 14) is compared to the demand for the first day of the peak week forecast (Friday, July 17), and so on.

Demand—Actual vs. Peak-Day Forecast



This is a comparison of the expected forecast demand for the peak day (July 20) to the actual demand each day of the heatwave event (August 14 through August 19), for the Western Interconnection. Unprecedented demand levels compared to a forecast peak event based on historical actuals remained above the 95th percentile for four days, including at night.

This video shows the discrepancy between the actual demand during the heatwave event and the peak day's expected demand forecast. To do this, WECC compared each hour of actual demand throughout the event to the corresponding hour on the peak day's forecast for demand. Note the actual 2020 peak occurred on August 18.