

## CalAdvocates Data Request 6.12

The following questions relate to your 2023-2025 WMP submission.

If a full response to a given question will be included in your WMP submission, your response to that question of this data request may consist of a citation to the specific page(s) or table(s) of the WMP where the information may be found, a written response to the question, or both.

### Public Safety Power Shutoffs (PSPS)

Regarding your PSPS circuit modeling capabilities:

- (a) Please describe your present circuit modeling capabilities with regard to PSPS decision-making (“PSPS circuit modeling capabilities”), including with what level of granularity they are able to determine how circuit hardening efforts or other changes to a line segment will affect PSPS thresholds.
- (b) Please describe any improvements to the present PSPS circuit modeling capabilities that you expect to implement in 2023.
- (c) Please describe any improvements to the present PSPS circuit modeling capabilities that you expect to implement in 2024.
- (d) Please describe the expected state of your PSPS circuit modeling capabilities at the conclusion of the 2023-2025 WMP cycle.

### Response to CalAdvocates Data Request 6.12

- (a) Twice per day, PacifiCorp’s Weather Research and Forecasting (WRF) generates a four-day, hourly weather and the National Fire Danger Rating System (NFDRS) forecast at 2 kilometer (km) resolution across its entire service territory, including for each of its 2,683 circuit Zones of Protection (ZOP) in California. For each ZOP, several key forecast variables are further converted to a percentile based on a partially completed 30-year WRF reanalysis (2013 through 2021), including the daily maximum wind gust forecast, daily maximum Energy Release Component (ERC), daily minimum dead fuel moisture (one, 10, 100, and 1,000 hour), and daily maximum Hot-Dry-Windy index. In addition, PacifiCorp subscribes to Technosylva’s Wildfire Analyst-Enterprise (WFA-E). WFA-E generates three-hourly wildfire potential and consequence forecasts for each of PacifiCorp’s ZOPs in California.
- (b) In 2023, the WRF forecast percentiles described above will be updated to incorporate the full 30-year WRF reanalysis (1991 through 2021). Further, as part of planned WFA-E updates, Technosylva will be implementing a new Fire Potential Index (FPI)

- (~1 km resolution) for PacifiCorp which quantifies wildfire potential based on the forecast and historical data. Additionally, WFA-E will include a new circuit-level wind-related outage forecast that converts PacifiCorp's daily operational WRF wind forecasts into the probability of an outage using recently generated fragility curves. The fragility curves are unique to each circuit and were derived from an analysis of past wind-related outages and a portion of PacifiCorp's 30-year WRF reanalysis (2013 through 2021). The above improvements gives PacifiCorp the data it needs to identify wind-related outage and wildfire risks for each circuit days in advance. It is the intersection of these two risks that may require the use of public safety power shutoff (PSPS) events.
- (c) In 2024, PacifiCorp plans to implement a WRF ensemble to help address some of the limitations of relying on a single deterministic model. Further, PacifiCorp plans to operationalize a machine learning based WRF bias correction forecast for weather stations in its Mesonet. Lastly, PacifiCorp may plan and implement updates to the FPI, wind-related outage model, and other models based on an evaluation of the performance of these model during the 2023 fire season.
- (d) At the conclusion of the 2023-2025 Wildfire Mitigation Plan (WMP) cycle, PacifiCorp will be able to forecast the probability of an outage, the severity of the fire weather conditions and large fire potential, and the potential consequences of a wildfire at the circuit level. Further, PacifiCorp will be able to compare the forecast fire weather conditions at the circuit to archived fire weather conditions for every day since 1991, allowing for a direct comparison of the predicted fire weather event to all major events in the past.