



May 20, 2021

President Marybel Batjer  
Commissioner Martha Guzman Aceves  
Commissioner Darcie Houck  
Commissioner Clifford Rechtschaffen  
Commissioner Genevieve Shiroma  
California Public Utilities Commission  
505 Van Ness Avenue  
San Francisco, California 94103

Re: Tree Overstrike Workshop Follow-Up

Dear President Batjer and Commissioners:

Thank you for the opportunity to brief you, your staff and members of the public during the Public Safety Power Shutoff (PSPS) Tree Overstrike Workshop on April 20, 2021. This letter is intended to provide a response to the questions at the workshop regarding the potential impacts from additional PSPS criteria that account for large numbers of trees that are tall enough to strike our distribution power lines.

Per your request, we have prepared an analysis on how these criteria may impact the communities we serve, how this information will be reported and transportation resources available for customers, all of which is set forth below. Consistent with the meteorology improvements outlined in our 2021 Wildfire Mitigation Plan and our ongoing discussions with CPUC staff, we continue to review these and other enhancements to the PSPS program. We remain committed to working with you in our efforts to keep our customers and our communities safe.

Potential Impacts of Additional PSPS Criteria by County

During the workshop, we provided information about the estimated potential systemwide impacts of the additional tree overstrike criteria for the PSPS Program. This included potential increases in event frequency, size and duration.

As part of the discussion, Commissioner Guzman Aceves asked if we could provide a regional breakdown of this same information. President Batjer requested an overview of counties that have experienced back-to-back PSPS events and an analysis of potential back-to-back events based on these new criteria. Commissioner Rechtschaffen also requested additional information regarding potential worst-case scenarios and new customers that could potentially be impacted by the additional criteria.

Attached is an overview of this data by county, based on a “backcast” analysis of the last 10 years of weather data (from 2010-19). This analysis is provided both for the current 2020 PSPS criteria (or baseline analysis) and if the additional criteria were in place as described during the April 20 workshop. This analysis includes a county-by-county view of the following:

- Average annual event frequency;

- Average event duration;
- Average event size;
- Maximum potential event size;
- Average annual number of back-to-back events (defined as occurring within 72 hours of each other) the counties would have experienced in the baseline analysis and that they would have experienced with the additional criteria; and
- Customers impacted due to the additional criteria that would not have otherwise been impacted by these historical events.

Please note that this information is for planning purposes only. The actual frequency, duration and impact of future PSPS events will depend on future weather and fuel conditions, and the precise mechanism by which PG&E incorporates the tree overstrike factor into its PSPS decision-making.

We are sharing community-specific information regarding these potential impacts with customers, cities, counties and tribes. Included in the attachment are two sample visuals that will be used for these engagements – one summarizing the key findings in the table and another providing additional information about how the criteria would have affected PSPS over the past decade (as was presented at the workshop). The additional granularity of frequency impacts is being provided in response to local input to PG&E that frequency of events is a particular challenge for certain local entities and an area they would like additional insight on the specific impact where possible.

#### Reporting on the Effectiveness of the 2021 PSPS Criteria

Our team proposes to utilize the newly proposed post-season report to include metrics that would help determine the effectiveness of the 2021 PSPS scoping criteria versus the 2020 PSPS criteria. This would include:

- Identifying the circuits that were included in scope due to the updated 2021 PSPS criteria, but which would not have been in scope based on the 2020 PSPS criteria alone;
- Identifying the damages and hazards experienced on these circuits, which may help determine if a potential wildfire may have been prevented; and
- Reporting the number of customers who were impacted due solely to the changes in 2021 versus 2020 PSPS models and the frequency and the duration that they were impacted.

We believe this reporting structure is responsive to the discussion at the workshop and will help provide the CPUC with insights on the efficacy of the 2021 PSPS scoping criteria. Post-event reports would remain consistent with requirements from the CPUC.

#### Transportation Options

Finally, during public comment, one of the speakers highlighted the importance of transportation resources for customers with Access and Functional Needs during a PSPS event. We agree that access to transportation for those who have a disability or a health condition that prevents them from driving or using public transportation during a PSPS is key to connecting these customers with family, friends or support services, including our Community Resources Centers.

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To support this need, we have partnered with the California Foundation for Independent Living Centers to provide transportation options during events through the Disability Disaster Access and Resources Program. Through this program, customers can receive accessible transportation to local hotels or Community Resource Centers, where they can charge medical devices; power-up their cell phone; and access water, snacks, ice and other basic needs. Transportation is provided through local Independent Living Centers and is available in all counties that are likely to experience PSPS events. More information on how customers can receive this support is available at [www.disabilitydisasteraccess.org](http://www.disabilitydisasteraccess.org).

We appreciate the opportunity to provide this update, supplemental information about the additional criteria and the support that is available to our customers before, during and after PSPS events. We are committed to working with the Commission on the planning and implementation of PSPS events and keeping our customers and our communities that we are privileged to serve safe.

Please feel free to reach out if you have any questions or require any additional information.

Sincerely,

A handwritten signature in black ink, appearing to read 'Sumeet Singh', with a long horizontal flourish extending to the right.

Sumeet Singh  
Senior Vice President and Chief Risk Officer

ATTACHMENT

## Potential Impacts of Additional PSPS Criteria by County

The following is a county-level analysis of potential Public Safety Power Shutoff events over the last 10 years (2010-2019), using both the 2020 PSPS criteria (baseline) and the additional criteria. Please note that this information is for planning purposes only and is not a prediction of future events. The actual frequency, duration and impact of future PSPS events will be dependent on weather conditions. The data shown are for distribution-level PSPS events only, as potential transmission level impacts from the additional criteria are currently under review. PG&E continues to make additional refinements to its PSPS Program, weather forecasting capabilities and risk modeling that may impact future PSPS events. Additional data analysis is underway and will be shared as it is available.

	Average Annual Event Count (2010-2019) (# of PSPS events)			Average Event Duration (in hours)**			Average Event Size (# of customers)**			Max Event Size (# of customers)			Net New Customers		Average Annual Instances of Back-to-Back Events (2010-2019)		
	Baseline	With Additional Criteria	Increase/Year	Baseline	With Additional Criteria	% Change	Baseline	With Additional Criteria	% Change	Baseline	With Additional Criteria	% Change	#	% Change	Baseline	With Additional Criteria	Increase/Year
Alameda*	0.3	0.3	0	IP	IP	IP	IP	IP	IP	IP	IP	IP	IP	IP	IP	IP	IP
Alpine*	1.6	2.2	0.6	IP	IP	IP	IP	IP	IP	IP	IP	IP	IP	IP	IP	IP	IP
Amador	2.2	3.5	1.3	20.0	22.0	10%	5,686	6,882	21%	12,153	12,153	0%	0	0%	0.6	0.7	0.1
Butte	2.5	4.6	2.1	25.1	27.4	10%	10,244	10,989	7%	13,733	13,733	0%	0	0%	0.5	1.3	0.8
Calaveras	2.1	3.4	1.3	18.9	21.2	12%	9,112	11,152	22%	21,672	21,672	0%	0	0%	0.6	0.7	0.1
Colusa	0.4	0.4	0	20.2	20.2	0%	116	116	0%	116	116	0%	0	0%	0.1	0.1	0
Contra Costa	0.3	0.3	0	12.9	16.0	24%	1,338	2,783	108%	2,829	4,568	61%	1,739	49%	0	0	0
El Dorado	2.1	4.1	2.0	19.6	21.2	8%	19,369	21,096	9%	43,270	43,270	0%	0	0%	0.6	0.9	0.3
Fresno	0.5	0.7	0.2	17.2	17.4	1%	4,990	4,640	-7%	5,983	5,983	0%	0	0%	0.1	0.1	0
Glenn	0.4	0.4	0	20.2	20.2	0%	225	225	0%	225	225	0%	0	0%	0.1	0.1	0
Humboldt	1.7	3.0	1.3	20.1	22.5	12%	793	1,339	69%	2,996	5,859	96%	2,382	69%	0.3	0.6	0.3
Kern	1.3	1.8	0.5	21.7	21.7	0%	304	284	-7%	736	736	0%	0	0%	0.2	0.3	0.1
Lake	2.0	3.7	1.7	23.0	24.1	4%	3,444	3,990	16%	13,744	13,757	0%	13	0%	0.4	1.1	0.7
Madera	1.0	2.2	1.2	17.1	19.1	12%	6,188	5,522	-11%	13,370	13,482	1%	0	0%	0.2	0.4	0.2
Marin	0.1	0.2	0.1	16.9	16.9	0%	21,125	21,125	0%	21,125	21,125	0%	0	0%	0	0	0
Mariposa	0.6	1.0	0.4	17.5	21.7	24%	1,830	1,836	0%	9,016	9,016	0%	0	0%	0.1	0.1	0
Mendocino	1.1	1.7	0.6	14.9	17.9	20%	1,444	2,636	82%	8,544	13,499	58%	4,054	43%	0.3	0.3	0
Monterey	1.0	1.1	0.1	20.1	18.7	-7%	653	869	33%	2,358	2,358	0%	1,646	65%	0.1	0.3	0.2
Napa	2.1	3.7	1.6	24.4	27.6	13%	4,341	4,310	-1%	6,385	6,385	0%	0	0%	0.4	1.1	0.7
Nevada	2.2	4.5	2.3	18.5	19.4	5%	10,779	12,744	18%	26,863	26,863	0%	0	0%	0.2	0.8	0.6
Placer	1.9	4.3	2.4	17.9	19.8	10%	7,256	7,083	-2%	20,741	20,824	0%	0	0%	0.2	0.7	0.5
Plumas	2.2	3.3	1.1	19.9	20.8	5%	536	727	36%	1,225	2,371	94%	1,791	146%	0.4	0.6	0.2
San Benito	0.1	0.1	0	12.7	12.7	0%	242	242	0%	242	242	0%	0	0%	0	0	0
San Joaquin*	0.1	0.1	0	IP	IP	IP	IP	IP	IP	IP	IP	IP	IP	IP	IP	IP	IP
San Luis Obispo	0.3	0.3	0	14.2	14.2	0%	75	75	0%	145	145	0%	0	0%	0	0	0
San Mateo	1.8	2.4	0.6	19.8	19.6	-1%	2,592	2,798	8%	5,743	6,070	6%	736	13%	0.3	0.4	0.1
Santa Barbara	0.1	0.2	0.1	14.4	13.6	-6%	820	763	-7%	820	820	0%	0	0%	0	0	0
Santa Clara	1.7	2.5	0.8	20.5	20.6	0%	2,737	2,743	0%	6,820	6,820	0%	0	0%	0.2	0.5	0.3
Santa Cruz	2.0	2.7	0.7	20.8	20.9	0%	9,157	9,255	1%	21,252	21,252	0%	0	0%	0.3	0.5	0.2
Shasta	1.7	4.2	2.5	16.4	23.3	42%	4,176	9,688	132%	12,219	18,358	50%	4,768	35%	0.2	1.2	1.0
Sierra	2.3	4.3	2.0	18.7	23.7	27%	727	847	16%	1,071	1,071	0%	0	0%	0.3	1.0	0.7
Siskiyou*	0.2	2.1	1.9	IP	IP	IP	IP	IP	IP	IP	IP	IP	IP	IP	IP	IP	IP
Solano	1.0	1.1	0.1	22.3	22.3	0%	863	863	0%	1,651	1,651	0%	0	0%	0.2	0.2	0
Sonoma	2.1	3.8	1.7	21.6	22.9	6%	5,804	6,266	8%	23,924	23,924	0%	0	0%	0.4	1.1	0.7
Tehama	1.5	3.9	2.4	19.8	27.6	39%	2,120	1,797	-15%	5,987	5,987	0%	0	0%	0.2	1.2	1.0
Trinity	1.2	2.7	1.5	16.4	26.1	59%	263	656	149%	606	1,576	160%	923	141%	0.1	0.5	0.4
Tulare	0.1	0.1	0	21.4	21.4	0%	292	292	0%	292	292	0%	0	0%	0	0	0
Tuolumne	1.3	2.3	1.0	15.3	15.5	2%	8,364	10,158	21%	25,396	28,203	11%	1,761	7%	0.1	0.3	0.2
Yolo	1.2	1.3	0.1	19.6	19.6	0%	33	33	0%	102	102	0%	0	0%	0.2	0.2	0
Yuba	2.5	4.5	2.0	22.5	24.3	8%	3,124	3,499	12%	4,593	4,593	0%	0	0%	0.5	1.1	0.6

\*In progress; PG&E's analysis of overstrike potential, and additional refinement for PSPS criteria in 2021, are ongoing; additional information will be shared as it is available

\*\*Note that the additional criteria could lead to more frequent, but smaller events. In some instances, the average event duration or size is decreased due to the potential for smaller events.


# Definitions

<b>Baseline</b>	Potential Public Safety Power Shutoff events over the last 10 years (2010-2019) using the event scoping criteria that were in place for the 2020 event season.
<b>With Additional Criteria</b>	Potential Public Safety Power Shutoff events over the last 10 years (2010-2019) if the 2020 criteria AND the additional proposed criteria, accounting for large numbers of trees tall enough to strike distribution power lines, were in place.
<b>Average Annual Event Count</b>	The total PSPS events from 2010-2019. The total includes 27 events for baseline and 47 total events for 70th percentile overstrike criteria. Note that this analysis is continuing to be refined. Data is subject to change.
<b>Average Event Duration</b>	Event Duration = Total duration of customers impacted for all events / total impacted customers for all events. Average weather event duration includes circuit weather duration + 10.7 hr restoration and switching (average time for all events in 2020). Duration is calculated using the top 27 events for the baseline and the top 26 events for the additional criteria*.
<b>Average Event Size</b>	Average number of customers impacted in each county per event. Note that the additional criteria could lead to more frequent, but smaller events. The analysis of average event size reviews only larger events (the 27 largest events by customer count, which is the baseline number of events) in order to provide a comparison of similar size events before and after the additional criteria are considered. In some instances, the average event size is still decreased due to the potential for smaller events.
<b>Maximum Event Size</b>	The maximum event size of PSPS events in the 47 events for the 70th percentile tree overstrike from 2010-2019. Maximum event size is also calculated using the top 27 events by customer count to better show the increase in average event size. In some cases the average event size and max event size are the same due to the same circuits being impacted in each event.
<b>Net New Customers</b>	Unique customers that would be added to scope as a direct result of the 10-year re-analysis when comparing the customers in the baseline analysis to the additional criteria.
<b>Instances of Back-to-Back Events (Events within 72 hours)</b>	Instances of events that occurred within 72 hours of each other from 2010-2019. Event size includes all 47 events for 70th percentile tree overstrike*.
<b>Counties</b>	The following counties in PG&E's service area are not included in the table, as the 10-year lookback did not identify potential PSPS events for either baseline criteria or additional proposed criteria: Kings, Merced, Lassen, Sacramento, San Francisco, Stanislaus and Sutter.

\*Note that the additional impacts due to the additional criteria resulted in the two events overlapping and merging into a single event. The result of this is that the baseline event total is 27 and the total with the additional criteria is 26.

## Sample Local Materials

PG&E is sharing information about the potential impacts of the additional PSPS criteria with cities, counties, tribes and customers. Below is a sample of the materials that will be shared (using Butte County as an example). This information will be reviewed and explained in further detail by PG&E representatives during upcoming meetings. Note that we are providing additional detail about the frequency of events due to feedback from local agencies that event frequency is the most impactful metric for PSPS planning.







# Identifying Potential Impacts from Updated Criteria – Butte County

**PG&E studied 10 years of weather data from 2010 to 2019 to analyze the potential impact of the additional criteria. The study found:**

- ✓ **Reduced risk** of catastrophic wildfires
- ✓ **Additional PSPS events**, increased customers impacted and increased event duration

**We do not expect a return to the largescale PSPS events of 2019**

	BASELINE	WITH ADDITIONAL CRITERIA
 <b>Event Frequency</b>	~3 events per year	~5 events per year
 <b>Average Event Duration</b> <small>(excludes restoration time)</small>	~25 hours	~27 hours
 <b>Average Event Customer Count*</b>	~10.2K customers	~11K customers
 <b>Largest Event Customer Count*</b>	~13.7K customers	~13.7K customers

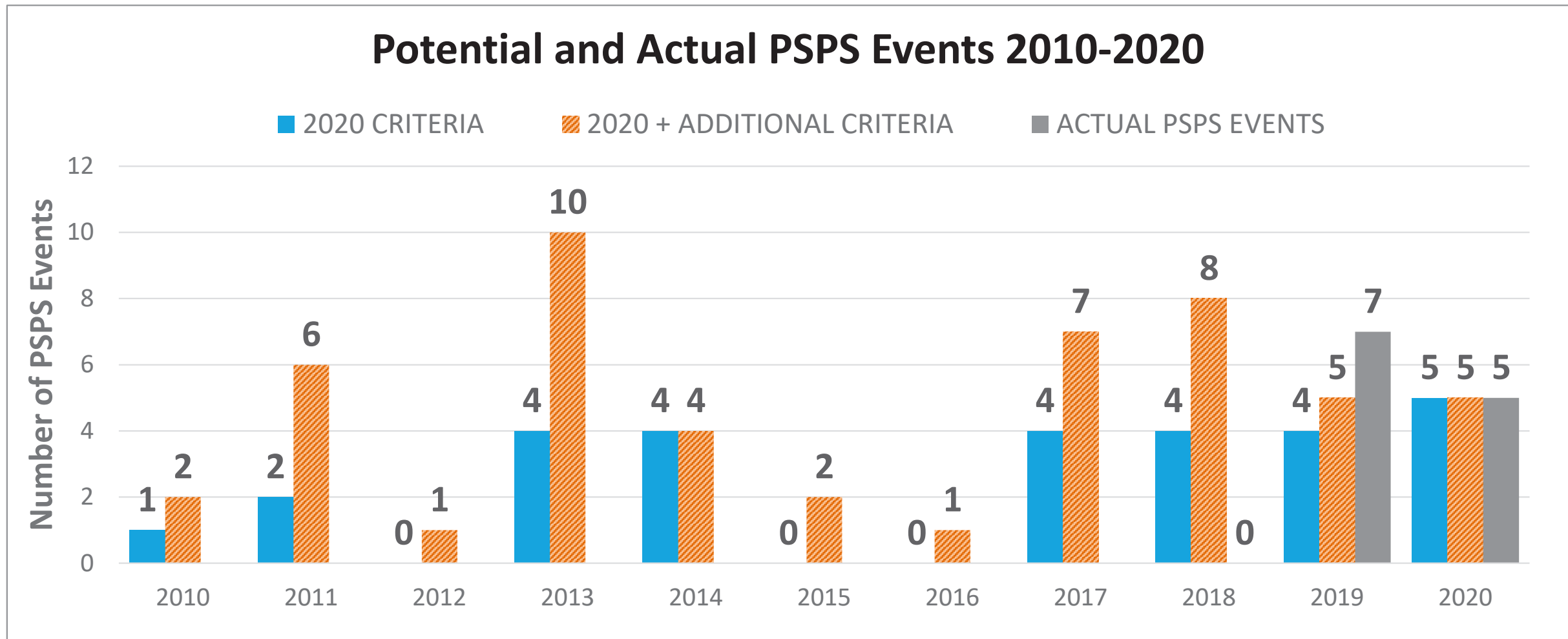
*\*Averages were calculated using all events from the 10-year historical baseline and the same number of events using the new criteria. This excludes a portion of smaller-scale events using the new criteria. All data is for planning purposes only and additional analysis is ongoing. The size and scope of actual PSPS events is dependent on weather.*

*Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.*



# PSPS Lookback Utilizing Additional Criteria – Butte County

The chart below uses 11 years of weather data to show the number of potential PSPS events based on 2020 PSPS criteria compared to the additional criteria for this year.



**Note:** This information is for planning purposes only and additional data analysis is underway. Future events will be dependent on weather conditions.

*Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.*