

Liberty CalPeco - 2020 Wildfire Mitigation Plan
2020 Progress Metrics

Attachment 4 - Item #	Attachment 1 - Item #	Progress metric name	Metric - Other detail	2019 Performance	2020 Performance	Monthly performance												Unit(s)	Reporting		
						Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20				
4	3	Extent of grid modularization	# of sectionalizing devices installed - non-HFTD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	equipment in. 1. HFTD 2. Non-HFTD	Quarterly		
4	3	Extent of grid modularization	Automated control equipment - non-HFTD - Auto line recloser	.21/mile	.21/mile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
4	3	Extent of grid modularization	Automated control equipment - non-HFTD - Motor operated switches	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
5	N/A	Equipment operating load above nameplate capacity	# of circuit hours	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Number of circuit hours operated above nameplate capacity in HFTD areas	Quarterly		
																	Average % above nameplate capacity when equipment operated above nameplate capacity in HFTD areas				
6	N/A	Risk-spend efficiency of resources deployed towards wildfire mitigation efforts	Dollars	0.00	Please see notes	Please see notes	Please see notes	Please see notes	Please see notes	Please see notes	Please see notes	Please see notes	Please see notes	Please see notes	0.00	0.00	0.00	Dollars per incremental life saved	Quarterly		
																	Dollars invested per estimated dollars of rebuilt structures avoided				
																	Dollars per customer hour of PSPS avoided				

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						Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20		
7	N/A	Extent of hardening across grid	% of assets	0.00	5.82	0.93	0.93	0.93	0.93	0.93	0.93	0.08	0.08	0.08	0.00	0.00	0.00	Percent of all grid assets in HFTD areas using proven and demonstrated wildfire-resistant equipment	Monthly
8	N/A	Community engagement activity and effectiveness	% of residents	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Percent of residents made aware of PSPS and emergency response procedures in advance of events, according to post-event surveys Percent of residents agreeing to participate in utility wildfire risk-reduction activities (e.g., allowing access to property for utility hazard tree remediation)	Quarterly
10	4	Data collection and reporting	% of total data	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Percent of data requested in SDR and WMP collected in initial submission	Quarterly

Liberty CalPeco - 2020 Wildfire Mitigation Plan
2020 Performance on Outcomes Metrics

Metric type	Attachment 4 - Item #	Attachment 1 - Item #	Outcome metric name	2019 Performance	2020 Performance	Monthly performance												Unit(s)	Reporting	Notes
						Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20			
1. Near misses	1.a.	1.a.	Number of all events (such as unplanned outages, faults, conventional blown fuses, etc.) that could result in ignition, by type according to utility-provided list (total)	278.00	229.00	16.00	10.00	35.00	15.00	11.00	23.00	42.00	43.00	34.00	0.00	0.00	0.00	Number per year	Quarterly	
	1.b.	1.b.	Number of all events (such as unplanned outages, faults, conventional blown fuses, etc.) that could result in ignition, by type according to utility-provided list (normalized)	0.34	0.19	0.02	0.01	0.05	0.02	0.01	0.03	0.05	0.00	0.00	0.00	0.00	0.00	Number per RFW circuit mile day per year	Quarterly	
	1.c.	1.c.	Number of wires down (total)	5.00	5.00	1.00	2.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	Number of wires down per year	Quarterly	
	1.d.	1.d.	Number of wires down (normalized)	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Number per RFW circuit mile day per year	Quarterly	
2. Utility inspection findings	2.a.	2.a.	Number of Level 1 findings that could increase the probability of ignition discovered per circuit mile inspected	-	0.003	0.000	0.000	0.000	0.004	0.006	0.004	0.004	0.005	0.003	0.000	0.000	0.000	Average number of Level 1 findings that could increase the probability of ignition discovered by all inspections per circuit mile per year	Quarterly	
	2.b.	2.b.	Number of Level 2 findings that could increase the probability of ignition discovered per circuit mile inspected	43.00	0.040	0.000	0.000	0.000	0.026	0.013	0.008	0.026	0.019	0.040	0.000	0.000	0.000	Average number of Level 2 findings that could increase the probability of ignition discovered by all inspections per circuit mile per year	Quarterly	
	2.c.	2.c.	Number of Level 3 findings that could increase the probability of ignition discovered per circuit mile inspected	-	0.030	0.000	0.000	0.000	0.060	0.076	0.070	0.132	0.103	0.030	0.000	0.000	0.000	Average number of Level 3 findings that could increase the probability of ignition discovered by all inspections per circuit mile per year	Quarterly	
3. Risk spend efficiency of WMP programs	3.a.	N/A	Average risk spend efficiency of all WMP programs being undertaken by utility	-	0.00	Please see notes	Please see notes	Please see notes	Please see notes	Please see notes	Please see notes	Please see notes	Please see notes	Please see notes	0.00	0.00	0.00	Incremental cost per grid-wide 1% reduction in utility ignition in HFTD areas	Quarterly	The company is currently developing its risk-based decision-making (RBDM) models, for which risk-spend efficiency (RSE) is a component. RSEs are projected to be available as a feature of Liberty CalPeco's RBDM framework in Q1 2021 in time for the wildfire mitigation plan filing.
	3.b.	N/A	Average risk spend efficiency of wildfire-only WMP programs being undertaken by utility	-	0.00	Please see notes	Please see notes	Please see notes	Please see notes	Please see notes	Please see notes	Please see notes	Please see notes	Please see notes	0.00	0.00	0.00	Incremental cost per grid-wide 1% reduction in utility ignition in HFTD areas	Quarterly	The company is currently developing its risk-based decision-making (RBDM) models, for which risk-spend efficiency (RSE) is a component. RSEs are projected to be available as a feature of Liberty CalPeco's RBDM framework in Q1 2021 in time for the wildfire mitigation plan filing.
4. Planned procurement	4.a.	N/A	Contracts for future purchases of renewable energy	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.00	0.00	0.00	% of total estimated electricity procurement per year	Quarterly	The Liberty CalPeco resource mix included an estimated 36.8% renewable resources in 2019. This 2019 value is applied as an estimated 2020 monthly performance value.

6. Customer hours of PSPS and other outages	6.a.	3.a.	Customer hours of planned outages including PSPS (total)	113282.00	18620.30	4.00	25.05	326.00	477.75	1175.00	15090.00	1274.00	9.00	239.50	0.00	0.00	0.00	Total customer hours of planned outages per year	Quarterly	
	6.b.	3.b.	Customer hours of planned outages including PSPS (normalized)	139.30	28.00	1.00	1.00	1.00	1.00	2.00	20.00	2.00	0.00	0.00	0.00	0.00	0.00	Total customer hours of planned outages per RFW circuit mile day per year	Quarterly	
	6.c.	3.c.	Customer hours of unplanned outages, not including PSPS (total)	246866.00	79670.82	839.00	3915.00	3543.00	12492.00	227.00	9723.00	28031.00	13621.00	7279.82	0.00	0.00	0.00	Total customer hours of unplanned outages per year	Quarterly	
	6.d.	3.d.	Customer hours of unplanned outages, not including PSPS (normalized)	303.57	75.00	1.00	5.00	5.00	16.00	0.00	12.00	36.00	0.00	0.00	0.00	0.00	0.00	Total customer hours of unplanned outages per RFW circuit mile day per year	Quarterly	
	6.e.	3.e.	Increase in System Average Interruption Duration Index (SAIDI)	216.16	119.84	1.03	4.80	4.70	16.00	1.70	30.40	35.90	16.70	8.61	0.00	0.00	0.00	Change in minutes compared to the previous year	Quarterly collection	

**Liberty CalPeco - 2020 Wildfire Mitigation Plan
2020 Progress Metrics**

#	Progress metric name	Annual performance					Unit(s)	Comments
		2015	2016	2017	2018	2019		
1	Grid condition findings from inspection	Level 1 = 0 Level 2 = 0 Level 3 = every .39 miles	Level 1 = 0 Level 2 = every 1.5 miles Level 3 = every .45 miles	Level 1 = every 90.34 miles Level 2 = every 29.61 miles Level 3 = every .42 miles	Level 1 = 0 Level 2 = every 21.19 miles Level 3 = every .42 miles	Level 1 = 0 Level 2 = every 4.72 miles Level 3 = every .26 miles	Number of Level 1, 2, and 3 findings per mile of circuit in HFTD, and per total miles of circuit for each of the following inspection types: 1. Patrol inspections 2. Detailed inspections 3. Other inspection types	Liberty CalPeco's inspection data is still in paper format so location by HFTD is difficult to compile. The overwhelming majority of Liberty CalPeco's facilities are classified as HFTD with only small sections being Non-HFTD (7.7% of facilities can be classified as such). For the purpose of this exercise it is assumed all detailed inspections occurred in HFTD areas. Liberty CalPeco is only able to provide unit data for Detailed Inspections at this time but is putting mechanisms in place to better capture Patrol and Other Inspection types. Todd Gee
2	Vegetation clearance findings from inspection	7.07 Trees/Mile	8.61 Trees/Mile	10.12 Trees/Mile	7.71 Trees/Mile	8.17 Trees/Mile	Percentage of right-of-way with noncompliant clearance based on applicable rules and regulations at the time of inspection, as a percentage of all right-of-way inspected	Liberty CalPeco tracks the number of line miles inspected and the number of trees identified with non compliant clearance which can be used to calculate the number of non compliant trees per circuit mile. This is a sound progress metric as defined by WSD in attachment 4. It is unclear how to calculate percentage of non compliant trees as a percentage of all ROW inspected. Owner: Eliot Jones Dataset: Attachment 1 Table 1 Q2 - Veg Non Compliance Data
3	Extent of grid modularization					1. HFTD: Sec devices / mi = (1946 devices/1922 mi) = 1.01 devices per mile; Automated control equipment: 28 auto line reclosers, 2 motor operated switches = 30 auto devices all in HFTD; 2. Non-HFTD = 28 devices/134 mi = .21 devices per mile;	Number of sectionalizing devices per circuit mile plus number of automated grid control equipment in: 1. HFTD 2. Non-HFTD	Air switches and reclosers. 2019 data only. Doesn't specify just primary/secondary or u/g vs. o/h, so included all for line miles and devices. - Blaine Ladd
4	Data collection and reporting	N/A	N/A	N/A	N/A	___% (Assuming this question was intended to indicate the completeness of the 2020 WMP submission)	Percent of data requested in SDR and WMP collected in initial submission	Eliot Jones

**Liberty CalPeco - 2020 Wildfire Mitigation Plan
METRICS AND UNDERLYING DATA**

Section Recent performance on outcome metrics, annual and normalized for weather, last 5 years

Table 2: Description

Report performance on the following metrics within the utility's service territory over the past five years. Where the utility does not collect its own data on a given metric, the utility shall work with the relevant state agencies to collect the relevant information for its service territory, and clearly identify the owner and dataset used to provide the response in "Comments" column.

Provide a list of all types of findings and number of findings per type, in total and in number of findings per circuit mile.

Metric type	#	Outcome metric name	Annual performance					Unit(s)	Comments
			2015	2016	2017	2018	2019		
1. Near misses	1.a.	Number of all events (such as unplanned outages, faults, conventional blown fuses, etc.) that could result in ignition, by type according to utility-provided list (total)	99	111	137	115	278	Number per year	Included all overhead outages. Underground outages related to terminators and vehicle contact with padmounted equipment were included.
	1.b.	Number of all events (such as unplanned outages, faults, conventional blown fuses, etc.) that could result in ignition, by type according to utility-provided list (normalized)	0.038	0.262	0.124	0.039	0.342	Number per RFW circuit mile day per year	
	1.c.	Number of wires down (total)	5	10	3	4	5	Number of wires down per year	Wire down events unrelated to vegetation contact.
	1.d.	Number of wires down (normalized)	0.002	0.024	0.003	0.001	0.006	Number per RFW circuit mile day per year	
	2.a.	Number of Level 1 findings that could increase the probability of ignition discovered per circuit mile inspected	-	-	3	-	-	Average number of Level 1 findings that could increase the probability of ignition discovered by all inspections per circuit mile per year	These are the most severe violations and consist of broken crossarms, leaning/broken poles, broken insulators, etc. Liberty CalPeco believes all of these conditions are likely to increase the probability of ignition and provided a total instead of an average as requested.

2. Utility inspection findings	2.b.	Number of Level 2 findings that could increase the probability of ignition discovered per circuit mile inspected	-	98	14	8	43	Average number of Level 2 findings that could increase the probability of ignition discovered by all inspections per circuit mile per year	These are the moderate violations and consist of damaged crossarms, damaged poles, cracked insulators, etc. Liberty CalPeco believes all of these conditions are likely to increase the probability of ignition and provided a total instead of an average as requested.
	2.c.	Number of Level 3 findings that could increase the probability of ignition discovered per circuit mile inspected	-	-	-	-	-	Average number of Level 3 findings that could increase the probability of ignition discovered by all inspections per circuit mile per year	These are low level violations such as missing high voltage signs, guy guards, ground molding, etc., and are very unlikely to increase the probability of ignition.
3. Customer hours of PSPS and other outages	3.a.	Customer hours of planned outages including PSPS (total)	Unknown	5,124	7,025	31,470	113,282	Total customer hours of planned outages per year	Planned outages were not tracked with this level of detail prior to 2016.
	3.b.	Customer hours of planned outages including PSPS (normalized)	Unknown	12.08	6.36	10.74	139.3	Total customer hours of planned outages per RFW circuit mile day per year	
	3.c.	Customer hours of unplanned outages, not including PSPS (total)	112,599	111,988	133,267	75,720	246,866	Total customer hours of unplanned outages per year	
	3.d.	Customer hours of unplanned outages, not including PSPS (normalized)	43.28	264.01	120.67	25.85	303.57	Total customer hours of unplanned outages per RFW circuit mile day per year	
	3.e.	Increase in System Average Interruption Duration Index (SAIDI)	-137.98	-18.16	26.22	-66.33	216.16	Change in minutes compared to the previous year	
4. Utility ignited wildfire fatalities	4.a.	Fatalities due to utility-ignited wildfire (total)	-	-	-	-	-	Number of fatalities per year	
	4.b.	Fatalities due to utility-ignited wildfire (normalized)	-	-	-	-	-	Number of fatalities per RFW circuit mile day per year	
5. Accidental deaths resulting from utility wildfire mitigation initiatives	5.a.	Deaths due to utility wildfire mitigation activities (total)	-	-	-	-	-	Number of fatalities per year	

6. OSHA-reportable injuries from utility wildfire mitigation initiatives	6.a.	OSHA-reportable injuries due to utility wildfire mitigation activities (total)	-	-	-	-	-	Number of OSHA-reportable injuries per year	
	6.b.	OSHA-reportable injuries due to utility wildfire mitigation activities (normalized)	-	-	-	-	-	Number of OSHA-reportable injuries per year per 1000 line miles of grid	
7. Value of assets destroyed by utility- ignited wildfire, listed by asset type	7.a.	Value of assets destroyed by utility-ignited wildfire (total)	-	\$315,649.02	-	-	\$9,855.29	Dollars of damage or destruction per year	Total cost of rebuild. For 2016, see attached doc 8800-0216-0148 Job Assets. For 2019 see attached doc 8800-0219-0433 Job Assets.
	7.b.	Value of assets destroyed by utility-ignited wildfire (normalized)	-	\$744.14	-	-	\$12.12	Dollars of damage or destruction per RFW circuit mile day per year	Need the RFW circuit mile day per year.
8. Structures damaged or destroyed by utility- ignited wildfire	8.a.	Number of structures destroyed by utility-ignited wildfire (total)	-	18 poles	-	-	-	Number of structures destroyed per year	Number of utility poles only. No homes damaged.
	8.b.	Number of structures destroyed by utility-ignited wildfire (normalized)	-	0.042	-	-	-	Number of structures destroyed per RFW circuit mile day per year	
9. Acreage burned by utility-ignited wildfire	9.a.	Acreage burned by utility-ignited wildfire (total)	10.25	196	-	-	0.5	Acres burned per year	
	9.b.	Acreage burned by utility-ignited wildfire (normalized)	0.003940171	0.46206799	-	-	0.000614847	Acres burned per RFW circuit mile day per year	
	10.a.	Number of ignitions (total) according to existing ignition data reporting requirement	2	1	-	-	1	Number per year	
	10.b.	Number of ignitions (normalized)	0.001	0.002	-	-	0.001	Number per RFW circuit mile day per year	
	10.c.	Number of ignitions in HFTD (subtotal)	2	1	-	-	1	Number in HFTD per year	

10. Number of utility wildfire ignitions	10.c.i.	Number of ignitions in HFTD Zone 1	-	-	-	-	-	Number in HFTD Zone 1 per year	
	10.c.ii.	Number of ignitions in HFTD Tier 2	2	1	-	-	1	Number in HFTD Tier 2 per year	
	10.c.iii.	Number of ignitions in HFTD Tier 3	-	-	-	-	-	Number in HFTD Tier 3 per year	
	10.d.	Number of ignitions in HFTD (subtotal, normalized)	0.001	0.002	-	-	0.001	Number in HFTD per RFW circuit mile day per year	
	10.d.i.	Number of ignitions in HFTD Zone 1 (normalized)	-	-	-	-	-	Number in HFTD Zone 1 per RFW circuit mile day per year	
	10.d.ii.	Number of ignitions in HFTD Tier 2 (normalized)	0.000768814	0.00235749	-	-	0.001229695	Number in HFTD Tier 2 per RFW circuit mile day per year	
	10.d.iii.	Number of ignitions in HFTD Tier 3 (normalized)	-	-	-	-	-	Number in HFTD Tier 3 per RFW circuit mile day per year	
	10.e.	Number of ignitions in non-HFTD (subtotal)	-	-	-	-	-	Number in non-HFTD per year	
	10.f.	Number of ignitions in non-HFTD(normalized)	-	-	-	-	-	Number in non-HFTD per RFW circuit mile day per year	
11. Critical infrastructure impacted	11.a.	Critical infrastructure impacted by PSPS	-	-	-	-	-	Number of critical infrastructure (in accordance with D.19-05-042) locations impacted per hour multiplied by hours offline per year	single PSPS event in 2018 did not impact any critical infrastructure
	11.b.	Critical infrastructure impacted by PSPS (normalized)	-	-	-	-	-	Number of critical infrastructure (in accordance with D.19-05-042) locations impacted per hour multiplied by hours offline per year hour multiplied by hours offline per RFW circuit mile day per year	single PSPS event in 2018 did not impact any critical infrastructure