2021 Proposed EO STIP Metrics

Updated 12/8/20

Together, Building a Better California

PGE-DIXIE-NDCAL-000011297

Metric Overview

Metric		Overview
911 Emergency Response	Definition	No changes from 2020 (industry standard metric)
	Targets	No changes from 2020 – PG&E is a 1st decile performer and consistently among the best in the industry.
	Metric Details	Slide 3
CEMI-5	Definition	No changes from 2020 (industry standard metric)
	Targets	Targets were set using a 5-year linear trend as the baseline. The 0.5 target is set equal to a 5% improvement from the 5-year linear trend. Reliability performance has been declining since wildfire prevention has become PG&E's top priority.
	Metric Details	Slide 4
Reportable Fire Ignitions	Definition	Replacing simple count with an index approach
	Targets	Targets were set based on a 3-year average of data (Oct 2017 – Sept 2020). Ignition reduction % was taken from the RAMP Report to determine targets. The index is based on the following: 40% equipment and animal, 40% vegetation and 20% other.
	Metric Details	Slide 5
Wire Down Events due to Equipment Failure	Definition	Pivoting from all asset failures to failures that lead to a wire down event. Since the wire down investigation process is established, there is more confidence in the data quality. The increased confidence allows this metric to be expanded to systemwide. Also, changing calculation to a rate instead of count to eliminate the need to forecast MED's, which is difficult due to weather variability.
	Targets	Targets were set based on a 5-year average of data. A 6% improvement compared to the 5-year average was used to set the 0.5 target. The 1.0 target is a 6% improvement from the 1.0 target and the 1.5 target is a 6% improvement from the 1.0 target.
	Metric Details	Slide 6
Capacity Project Execution	Definition	New metric replacing Distribution Sectionalization. The proposed metric would be a count of capacity projects completed from a predetermined list of both carryover projects and new projects in 2021.
	Targets	[illegible] there are no historical targets to reference.
	Metric Details	[illegible]

OUT OF SCOPE

PGE-DIXIE-NDCAL-000011298

911 Emergency Response

Metric Background

This is a standard metric that is tracked across the industry. Therefore, the metric will continue in 2021 with no changes being made to the definition. Additionally, no changes will be made to the targets for the following reasons: 1) With over two months left in the year, it is hard to predict whether the target will even be achieved in 2020 and 2) PG&E is a top decile performer and consistently among the best in the industry.

Metric Definition

This metric measures the percentage of time that PG&E personnel respond (are on site) within 60 minutes after receiving a 911 call, with onsite defined as arriving at the premises where the 911 agency personnel are waiting. Our ability to respond quickly to these instances will accomplish two things: it will reduce public safety risks associated with a confirmed hazard and enable public agencies to respond to other emergency situations.

Metric Calculation

of 911 calls where PG&E personnel respond (are on site) within 60 minutes divided by the total number of 911 calls received where agency personnel are standing by

Metric System/Reporting Process

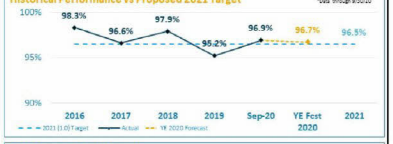
Standby 911 Report

Metric Exclusions

Excludes cancelled 911 calls and CPUC defined Measured Events per GO 166 resulting from non-earthquake, weather-related causes, affecting between 10% (simultaneous) and 40% (cumulative) of PG&E customers

Historical Performance vs Proposed 2021 Target

*Data through 9/30/20



2021 Proposed STIP Targets

YTD Targets	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.5	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
1.0	96.5%	96.5%	96.5%	96.5%	96.5%	96.5%	96.5%	96.5%	96.5%	96.5%	96.5%	96.5%
1.5	97.5%	97.5%	97.5%	97.5%	97.5%	97.5%	97.5%	97.5%	97.5%	97.5%	97.5%	97.5%

Target Setting Methodology

- The 0.5 target is set equal to the 0.5 target in 2020. Achieving this target would keep PG&E as a top decile performer
- The 1.0 target is set equal to the 1.0 target in 2020
- The 1.5 target is set equal to the 1.5 target in 2020
- PG&E has consistently been a top decile performer in the industry over the last five years (1st quartile is 78.5%, 1st decile is 88.7%). Increasing the target is not recommended because it would require a shift of focus from other priority work (i.e., wildfire and reliability) for which PG&E is not a top performer compared to industry peers. If achieved, the 96.5% target would keep PG&E as a top performer in 2021.

Customers Experiencing Multiple Interruptions (CEMI-5)

Metric Background

This is a standard metric that is tracked across the industry. Therefore, the metric will continue in 2021 with no changes being made to the definition. Changes will be made to the targets – details are below in the Target Setting Methodology section.

Metric Definition

CEMI5 is an overall measure of reliability that measures the number of customers that experience multiple sustained outages (both Unplanned and Planned).
CEMI5 is the total number of customers experiencing 5 or more sustained interruptions; the metric is reported as a YTD measure for a rolling 12-month period.

Metric Calculation

Weather normalized percentage of total customers.

DOD / IUS / ODB Database

Metric Exclusions

- 2.5 Beta major event days (MEDs) based on the IEEE Standard 1366 (also referred to as the "2.5 Beta Method")
- Generation / ISO outages (rotating outages)
- Momentary outages
- Secondary outages are excluded from the count of customer outage minutes.

Historical Performance vs Proposed 2021 Target

*Forecast in chart was calculated by taking the avg of the Sept YTD forecast and forecast from mid Oct Oct has not been good.

2021 STIP Targets

YTD Targets	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.5	2.53%	2.53%	2.53%	2.53%	2.53%	2.59%	2.59%	2.60%	2.61%	2.62%	2.63%	2.64%
1.0	2.39%	2.39%	2.39%	2.39%	2.40%	2.40%	2.40%	2.41%	2.42%	2.43%	2.44%	2.45%
1.5	2.22%	2.22%	2.22%	2.21%	2.22%	2.22%	2.22%	2.24%	2.25%	2.26%	2.27%	2.28%

Target Setting Methodology

- The 0.5 target is set equal to a 5% improvement from the 5-year linear trend between 2016 and YE forecast 2020
- The 1.0 target is set equal to a 5% improvement from the 0.5 target
- The 1.5 target is set equal to a 5% improvement from the 1.0 target
- A linear trend was used instead of an average because it would be very unlikely to meet the 0.5 target if an average was used instead because the numbers have consistently been trending upwards (0.5 target would be 2.47% using 5-year average with a 5% improvement).
- Wildfire prevention has been the top priority in EO since 2017, which has negatively impacted CEMI performance and makes it unlikely to see improvement in 2021. Investment strategy for 2021 places reliability improvements at the bottom of the loading order due to wildfire resiliency needs.
- Extreme weather events combined with the decision to disable use of reclosers has impacted overall reliability performance.

Reportable Fire Ignitions

Metric Background

The Reportable Fire Ignition metric definition will not be changed in 2021 (details below). The only change for 2021 will be the shift to a weighted index for scoring instead of a simple count (40% equipment and animal, 40% vegetation and 20% other). The index approach is an improvement for the following reasons:

- Reduces the "all or nothing" annual variability with STIP targets and performance
- Provides more visibility to performance that is in line with EO's major mitigation programs like EVM and System Hardening

Metric Definition

Powerline-involved fire incidents annually reportable to the CPUC per Decision 1402-015 and within PG&E's High Fire Threat District (HFTD). A reportable fire incident includes all the following: 1) ignition is associated with PG&E powerlines (both transmission and distribution) and 2) something other than PG&E facilities burned and 3) the resulting fire travelled more than one meter from the ignition point.

Metric Calculation

Index score of fire ignition incidents as follows:

- 40% - Fire ignitions caused by equipment and animal (3-year HFTD avg = 41%)
- 40% - Fire ignitions caused by vegetation (3-year HFTD avg = 36%)
- 20% - Fire ignitions caused by other (3-year HFTD avg = 23%)

Field Automated System (FAS) is the initial data source for the distribution portion of this metric: If a fire incident occurs that may be reportable, distribution troublemen record key information in the fire form.
The chron log of the transmission logging database is the initial data source for the transmission portion of this metric: If a fire incident occurs that may be reportable, transmission troublemen report key information to the transmission system operator.
Preliminary fire incident data is reviewed and validated against other data sources, such as ILIS records, OIS records, Event Reports, and other programs, such as
Vegetation Management, Bird Incident Reporting, and Law-Claims

Historical Performance vs Proposed 2021 Target

2021 STIP Targets

YTD Targets	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.5	0	2	5	9	18	39	66	90	106	118	128	131
1.0	0	3	5	9	18	37	62	85	100	111	121	124
1.5	0	2	4	8	17	36	59	81	94	105	114	117

Target Setting Methodology

- 0.5 Target (131) is set equal to the 2021 commitment that was made in the RAMP Report
- 1.0 Target (124) is set equal to an approximate 5% improvement from the 2021 commitment that was made in the Risk Mitigation Assessment Phase (RAMP) Report
- 1.5 Target (117) is set equal to an approximate 10% improvement from the 2021 commitment that was made in the RAMP Report

Metric Exclusions

- Fire ignition incidents occurring outside of HFTD are excluded
- Fire ignitions not meeting the CPUC reportable criteria

Wire Down Events due to Equipment Failure

Metric Background

The Wire Down Events due to Equipment Failure metric is a revised version of the 2020 Asset Failure metric. The following lessons learned from 2020 are key reasons for the change:

- Data quality in 2020 has been a risk that Internal Auditing has flagged all year with Asset Failure. Focusing the metric on wire down events due to equipment failure will address the data quality issues because of the mature process around wire down event investigations.
- The increased confidence in data quality allows the metric to be expanded beyond HFTDs and this is now proposed to be a system wide metric, providing a more wholistic view on equipment reliability.

Metric Definition

Wire Down Events due to Equipment Failure – an instance where a normally energized electric primary distribution or transmission conductor experiences a component or asset failure that results in a conductor(s) falling from its intended position and coming to rest on the ground or a foreign object (e.g., a vehicle or tree).

Metric Calculation

Rate expressed as a decimal based on a count of wire down events occurring on non-MEDs~~/~~ divided by the number of non-MEDs. See section 6 below for what determines an MED. A wire down event can sometimes have more than one actual wire down, but the count is by the event; it is not a count of the actual number of wires or spans that may have failed in service.

Metric Exclusions

- Wire down events that are due to a cause other than equipment failure
- Any wire down event that occurs on a declared Major Event Day (MED) as defined in the IEEE Standard 1366.
- Secondary wires (lines normally operated at less than 1000 Volts) down are not included in the metric because this information is not consistently reported in the DOD / IUS / ODB database.

Historical Performance vs Proposed 2021 Target

2021 STIP Targets

YTD Targets	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.5	3.137	2.998	3.096	2.925	2.767	2.626	2.504	2.378	2.257	2.525	2.369	2.405
1.0	2.930	2.779	2.911	2.750	2.620	2.468	2.354	2.236	2.178	2.188	2.227	2.261
1.5	2.764	2.612	2.736	2.585	2.462	2.320	2.213	2.101	2.047	2.055	2.093	2.125

Target Setting Methodology

- The 0.5 target is set equal to a 6% improvement from the 5-year average between 2016 and YE forecast 2020
- The 1.0 target is set equal to a 6% improvement from the 0.5 target
- The 1.5 target is set equal to a 6% improvement from the 1.0 target
- The Q4 2020 and full year 2020 forecasts were developed by taking the average Q4 performance over the last five full years (2015-2019)

Appendix

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Wire Down Events due to Equipment Failure – Rate Example

Example:

The logic is if rate is used instead of count then the team will not have to try to predict the weather and count of MEDs in 2021.

- Our 5-year trend of wire down events due to equipment failure is 2.214. Meaning, for each non-MED we had about 2.214 wire down events due to equipment failure. If we are using that as a baseline for target setting, then the team would have to approximate how many MEDs we will have in 2021.

Example #1 – Setting a simple count target with many MEDs forecasted

- **Weather forecast**: 31 MEDs in 2021 (similar to 2019). This results in 334 non MEDs.
- **Target calculation:** Using the 5 year trend as the baseline (2.214), this would result in an estimated full year target of **739** wire down events due to equipment failure.

Example #2 – Setting a simple count target with few MEDs forecasted

- **Weather forecast**: 7 MEDs in 2021 (similar to 2018). This results in 358 non MEDs.
- **Target calculation:** Using the 5 year trend as the baseline (2.214), this would result in an estimated full year target of **793** wire down events due to equipment failure.

The difference in count between the two examples is 54 wire down events due to equipment failure. The only difference in the calculation is the count of forecasted MEDs. Given the variability we have experienced over the last 5 years, the team proposed going with the rate approach to avoid trying to forecast number of MEDs in 2021.

Wire Down Events due to Equipment Failure Target Details

		Oct-Dec		YE Total	
YTD Sep 2015	489	2015	302	2015	771
YTD Sep 2016	631	2016	262	2016	893
YTD Sep 2017	703	2017	243	2017	946
YTD Sep 2018	649	2018	241	2018	890
YTD Sep 2019	635	2019	206	2019	841
YTD Sep 2020	537	2020	187	*2020 Fct*	724 <= forecast

=@TREND(E9:E13,A9:A13,A14)

		Oct-Dec		YE Total	
YTD Sep 2015	489	2015	302	2015	771
YTD Sep 2016	631	2016	262	2016	893
YTD Sep 2017	703	2017	243	2017	946
YTD Sep 2018	649	2018	241	2018	890
YTD Sep 2019	635	2019	206	2019	841
YTD Sep 2020	537	2020	251	*2020 Fct*	788 <= forecast

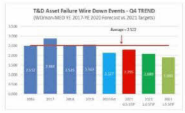
=AVERAGE(E9:E13)

5 Year Linear Trend & 5% Improvement

2020 YE Forecast: 2.127
5-Year Avg (2016-2020 YE Forecast): 2.522

- 0.5 Target (**2.396**) set based on 5% improvement from the 5-year average
- 1.0 Target (**2.270**) set based on 5% improvement from the 0.5 target
- 1.5 Target (**2.163**) set based on 5% improvement from the 0.5 target

5 Year Linear Trend & 9% Improvement



2020 YE Forecast: 2.127
5-Year Avg (2016-2020 YE Forecast): 2.522

- 0.5 Target (**2.295**) set based on 5% improvement from the 5-year average
- 1.0 Target (**2.089**) set based on 5% improvement from the 0.5 target
- 1.5 Target (**1.901**) set based on 5% improvement from the 0.5 target

5 Year Avg Trend & 5% Improvement

2020 YE Forecast: 2.310
5-Year Avg (2016-2020 YE Forecast): 2.559

- 0.5 Target (**2.431**) set based on 5% improvement from the 5-year average
- 1.0 Target (**2.309**) set based on 5% improvement from the 0.5 target
- 1.5 Target (**2.194**) set based on 5% improvement from the 0.5 target

5 Year Avg Trend & 6% Improvement

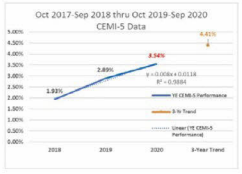
2020 YE Forecast: 2.310
5-Year Avg (2016-2020 YE Forecast): 2.559

- 0.5 Target (**2.405**) set based on 5% improvement from the 5-year average
- 1.0 Target (**2.261**) set based on 5% improvement from the 0.5 target
- 1.5 Target (**2.125**) set based on 5% improvement from the 0.5 target

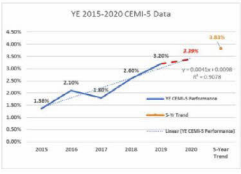
CEMI-5 Target Details

3-year average

3-year trend



5-year trend



Reportable Fire Ignitions Targets

3 Year Historical Average

Category	Average Annual Total
Equipment & Animal(40%)	54
Vegetation (40%)	47
Other (20%)	31
Total	**131**

2021 Ignition Reduction % (RAMP)

Category	2021 % Reduction (RAMP Report)
Equipment & Animal(40%)	1.55%
Vegetation (40%)	2.01%
Other (20%)	1.57%
Total	**1.70%**

Target Setting Approach

1. Rolling 3-year average was used as a performance baseline.
2. 1.0 targets were set equal to the 2021 commitment made in the RAMP report filing.
3. The 0.5 and 1.5 targets were set +/- 10% from the 1.0 targets

2021 0.5 Targets

Month	Equipment & Animal (40%)	Vegetation (40%)	Other (20%)	Total
Jan	0	0	0	0
Feb	1	2	0	3
Mar	1	0	1	2
Apr	1	2	1	4
May	3	3	3	9
Jun	7	10	4	21
Jul	9	15	3	27
Aug	8	11	5	24
Sep	7	5	4	16
Oct	5	5	2	12
Nov	5	2	3	10
Dec	1	1	1	5
Total	**48**	**56**	**27**	**131**

2021 1.0 Targets

Month	Equipment & Animal (40%)	Vegetation (40%)	Other (20%)	Total
Jan	0	0	0	0
Feb	1	2	0	3
Mar	1	0	1	2
Apr	1	2	1	4
May	3	3	3	9
Jun	6	9	4	19
Jul	9	14	2	25
Aug	8	10	5	23
Sep	6	5	4	15
Oct	4	5	2	11
Nov	5	2	3	10
Dec	1	1	1	5
Total	**45**	**53**	**26**	**124**

2021 1.5 Targets

Month	Equipment & Animal (40%)	Vegetation (40%)	Other (20%)	Total
Jan	0	0	0	0
Feb	1	1	0	2
Mar	1	0	1	2
Apr	1	2	1	4
May	3	3	3	9
Jun	6	9	4	19
Jul	8	13	2	23
Aug	7	10	5	22
Sep	6	4	3	13
Oct	4	5	2	11
Nov	5	2	2	9
Dec	1	1	1	5
Total	**43**	**50**	**24**	**117**

RAMP Data for Ignition Target Setting

	% Frequency	YoY Reduction	
Aggregated	100%	1.7%	***source from 2020 RAMP Report, workpaper bowtie v1.1.1_WF_HFTDonly.xlsm
Vegetation	43%	2.0%	***frequency based on 2015-2019 data
Equip Failure	26%	1.6%	
3rd Party	17%	1.3%	
Animal	10%	1.5%	
Unk or Other	4%	1.5%	
CC - Seismic Scenario	0%	0.1%	

Weight	Scenario1	
Vegetation	43%	2.01%
Equip Failure+ Animal	36%	1.53%
All Other	21%	1.37%
Total	100%	1.70%

Weight	Scenario2	
Vegetation	43%	2.01%
Equip Failure	26%	1.56%
All Other	31%	1.40%
Total	100%	1.70%