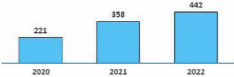
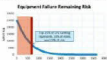


**Public Safety
Long Term Incentive Plan (LTIP)
Target Setting**

November 23, 2020



PG&E Evolution of the LTIP metric from units of work completed to amount of risk being reduced

	2020-2022 LTIP Plan	2021-2023 LTIP Plan
System Hardening <ul style="list-style-type: none"> Risk Exposure - Count of circuit miles system hardening in High Fire Threat Districts (HFTD) and High Fire Risk Areas (HFRA). Goal was "1,021" circuit miles over 3 years; 235 miles hardened YTD in 2020 	<ul style="list-style-type: none"> Risk Exposure - Count of circuit miles system hardened in the HFTD and HFRA Risk Profile - 80% of system hardening miles have to be highest risk miles; highest risk miles include - 1) top 20 % of the risk buydown curve; 2) fire rebuild and; 3) PPS mitigation miles Risk Effectiveness - Prioritizes higher risk reduction mitigation options (Undergrounding and Line removals) 	
Substation Enablement <ul style="list-style-type: none"> Number of substations out of possible 64 substations that are "energizable" during a Transmission-Level PSPS event 62 high priority substations are now operationally ready within 48 hours (LTIP 3-yr 2.0 target = 50 substations) 	<ul style="list-style-type: none"> Replace the Substation Enablement metric for the 2021-2023 LTIP Period with EVM Risk Reduction Public Safety Metric. Rational: <ul style="list-style-type: none"> 3 Year target has been achieved Improved weather forecasting capabilities reduces the criticality of number of substations needed to reduce PSPS impact 	
Enhanced Vegetation Management (EVM) <ul style="list-style-type: none"> No metric was established for EVM 	<ul style="list-style-type: none"> Risk Exposure - Count of EVM miles worked in the HFTD and HFRA Risk Profile - 80% of EVM miles worked in the top 20% of the HFTD's includes fire impacted areas Risk Effectiveness - Execute work consistent with defined EVM scope 	



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Distribution overhead assets represent a significantly higher ignitions risk

System Hardening and Enhanced Vegetation Management focus on Distribution Overhead Assets, which have demonstrated a much higher rate of ignitions

- Distribution assets represent high ignitions risk due to a combination of huge exposure area, proximity to risk factors (i.e. falling vegetation), and intrinsic asset traits
- SH and EVM mitigation work, by addressing these risk factors on Distribution Assets, are key programs to continue addressing ignitions risk

Initiating Cause	2015-2020 YTD CPUC Reportable Ignitions in HFTD – Asset Family		Estimated Ignitions per 100 Circuit Miles in HFTD ⁽¹⁾	
	Distribution	Transmission	Distribution	Transmission
Equipment – PG&E	217	30	0.8477	0.5413
Vegetation	305	11	1.1915	0.1985
All Other	195	34	0.7618	0.6135

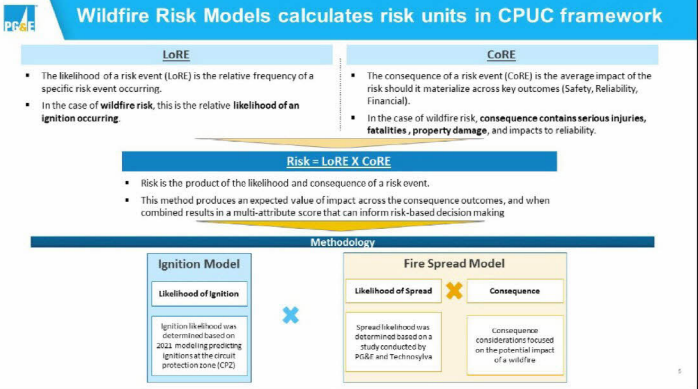
For Equipment-driven ignitions, the Distribution ignitions / Mile rate is 1.5x greater than Transmission.

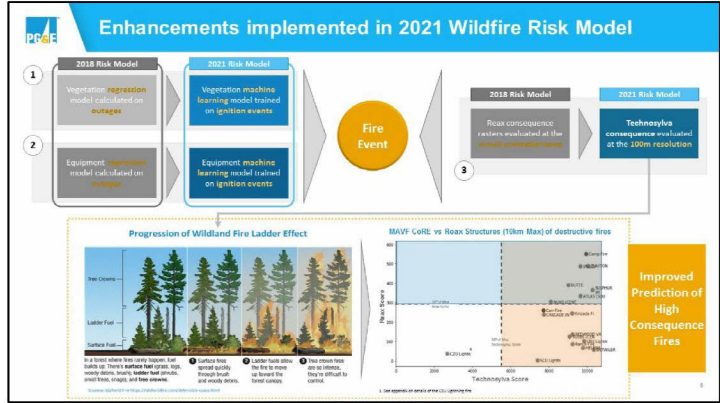
For Vegetation-driven ignitions, the Distribution rate is 6x greater than Transmission.

(1) Circuit mileage in HFTD areas source 2020 Wildlife Safety Plan – 25,988 of distribution overhead mileage in HFTD areas, 5,543 of transmission overhead mileage.

Risk Model and Risk Quantification

1/20/2014

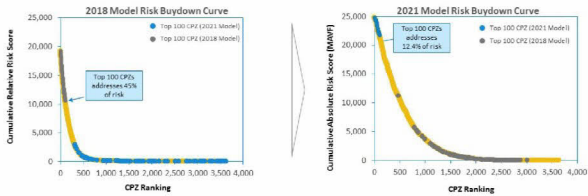






Risk models provide risk buydown curves to guide workplan

The risk buydown curve shows the amount of risk that can be addressed with every subsequent mile within a CPZ that is mitigated. This view shows the relative magnitude of potential projects and can compare impacts of programs with varied effectiveness. The visualization helps to highlight the consolidation of risk by CPZ as you move down the prioritization list.

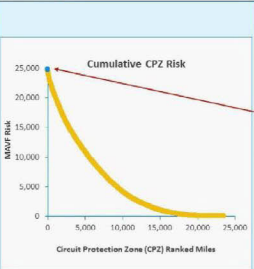


Equipment (Conductor) Risk Buydown curves highlight the significant shift of where the top 100 CPZ's are between the two models primarily as a result of the shift in the consequence model

Project Example

1/20/2014

The top 50 highest risk-miles represent 1.4% of the total risk

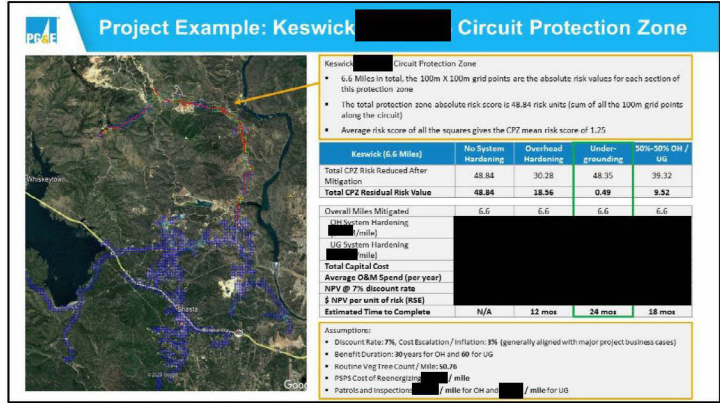


Protection Zone Name	Miles	Cumulative Miles	Mean MAVP Score	Total CPZ MAVP	% total risk reduced*
INDEPENDENT	0.02	0.02	3.16	3.16	0.01%
CALPINE	0.01	0.03	1.88	1.88	0.01%
MARIPOSA	0.08	0.12	1.69	1.69	0.02%
SHEPHERD	0.01	0.13	1.44	1.44	0.02%
MIDDLE	0.06	0.19	1.30	3.20	0.03%
SUPPES L	1.00	1.17	1.26	3.77	0.04%
RESWICK	6.66	7.83	1.25	48.84	0.17%
MIDDLET	4.71	12.04	0.92	48.56	0.23%
STODOL	5.61	17.65	0.88	51.70	0.42%
MARIPOSA	0.64	18.29	0.77	10.81	0.44%
BUCKS L	4.29	22.58	0.72	3.55	0.47%
SILVER	0.09	22.67	0.72	4.36	0.47%
MIDDLET	0.42	23.08	0.72	8.70	0.48%
MIDDLET	24.80	47.88	0.72	151.83	0.57%

*Based on assuming an OI hardening risk mitigation (62% risk reduction effectiveness)


Key Takeaway

On each project a more granular risk spend efficiency evaluation will be performed on an NPV basis (total cost of ownership for the asset life) once the project is fully scoped similar to what is shown on the Reswick circuit protection zone on the next slide



Target Setting

11/20/2014



System Hardening

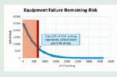
System Hardening Targets (Risk Miles)

Conditions

Condition 1: 80%¹ of system hardening miles have to be highest-risk miles over the three-year period or LTIP is 0

Risk Profile (Highest Risk Miles defined as)

1. Top 20%² of risk buydown curve
2. Fire rebuild miles
3. PSPS mitigation miles



Condition 2: Minimum percentage of miles mitigated with either Line Removal or Undergrounding over the three-year period or LTIP is 0

Risk Effectiveness

- 10% of Undergrounding or Line Removal work in the System Hardening project portfolio³

Risk Exposure

- Count of circuit miles system hardened in the HTD and HFRA

	LTIP 0.5	LTIP 1.0	LTIP 2.0
2021	305	320	350
2022	350	368	403
2023	396	416	455
2021-2023	1,051	1,103	1,209

1. Basis of the 80% is to allow for operational execution considerations including permitting, weather related access, and mob/demob efficiencies
2. Basis of the top 20% correlates to ~70% of the risk on the risk buydown curve
3. Risk reduction effectiveness for Overhead Hardening is estimated at 62% and Undergrounding or Line Removal is estimated at 99%



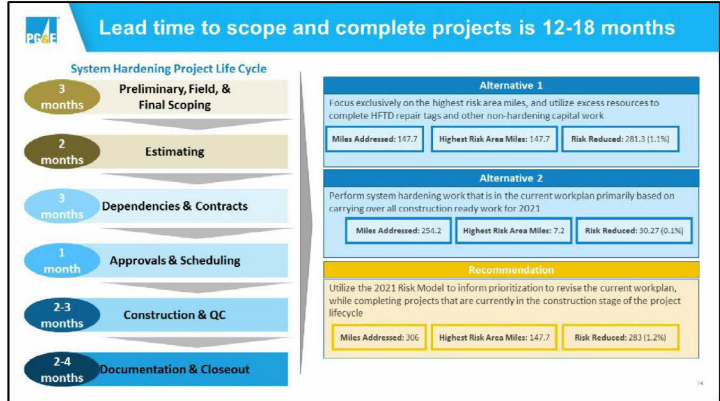
The LTIP targets for system hardening are set based on 2021 risk miles and program funding assumptions

- Program Funding**
 - Forecast of [redacted] Wildfire Mitigation capital spend in 2021 consistent with the Settlement for the 2020-2021 GRC. 2022 forecast escalates 2021 by 15% and 2023 forecast escalates 2021 by 30%.
- Unit Costs**
 - Assumes [redacted] per circuit miles of Overhead SH work and [redacted] per Underground work
- Program Duration**
 - Execution of the 13-year plan focusing on top 20% circuit protection zones by 2032

	LTIP 0.5	LTIP 1.0	LTIP 2.0
2021	305	320	350
2022	350	368	403
2023	396	416	455
2021-2023	1,051	1,103	1,209

- Targets are miles of system hardening work for specific risk-prioritized work
- The total mileage of the proposed 2021 Project Portfolio was set as the threshold goal (LTIP 0.5) for 2021
 - LTIP 0.5 goals in 2022 and 2023 reflect escalation of program funding level
 - The target and stretch goals (LTIP 1.0, 2.0) were set as 5% and 15% higher, respectively

¹ [redacted] includes scoping and engineering costs for future system hardening projects beyond 2021 and additional minor capital spend for other Wildfire Mitigation Programs ¹⁰





Enhanced Vegetation Management (EVM)

Conditions

- Condition 1: 80%¹ of EVM miles have to be highest-risk miles over the three-year period or LTIP is 0**
- Risk Profile (Highest Risk Miles defined as)**
 - Top 20%² of risk model buydown curve
 - Fire impacted miles
- Risk Effectiveness**
 - Execute work consistent with defined EVM scope
 - Achieve 12' recommended radial clearance
 - Access viable potential trees including high risk species
 - Remove overhangs above and within 4 feet of power lines
 - Mitigate vegetative fuels under and adjacent to powerlines on targeted basis
- Risk Exposure**
 - Count of EVM miles worked in the HFTD and HFRA

EVM Targets (Risk Miles)

	LTIP 0.5	LTIP 1.0	LTIP 2.0
2021	1,800	1,890	2,070
2022	1,800	1,890	2,070
2023	1,800	1,890	2,070
2021-2023	5,400	5,670	6,210

Note: Targets are based on 12-yr EVM Program pace (2021 – 2032). Consistent with the PCR. Evaluating viability of 10-yr pace (2021 – 2030).

1. Basis of the 80% is to allow for operational execution considerations including permitting, weather-related access and customer approvals
 2. Basis of the top 20% correlates to ~85% of the risk on the risk buydown curve



The LTIP targets for EVM are set based on work to be completed over the remaining twelve years of the program

- Program Duration**
 - Assumes execution of the 12-year Enhanced Vegetation Management Plan (2021-2032)
 - Evaluating viability of 10-year pace (2021-2030)
- Program Funding**
 - Forecast of [redacted] and [redacted] spend on EVM program in 2021, 2022 and 2023 respectively (in alignment with PCIR)
 - 10-year pace will result in incremental forecast of [redacted] per year
- Unit Costs**
 - Assume [redacted] per miles of EVM work

Enhanced Vegetation Management LTIP Targets

	LTIP 0.5	LTIP 1.0	LTIP 2.0
2021	1,800	1,890	2,070
2022	1,800	1,890	2,070
2023	1,800	1,890	2,070
2021-2023	5,400	5,670	6,210

- Targets are miles of EVM work for specific risk-prioritized work.
- The total mileage of the proposed 2021 Project Portfolio was set as the threshold goal (LTIP 0.5) for 2021
 - The target and stretch goals (LTIP 1.0, 2.0) were set as 5% and 15% higher, respectively



Governance and Oversight

Wildfire Risk Governance Committee

- System Hardening project lists will be formally approved annually by the Chief Risk Officer
- Enhanced Vegetation Miles (specific location) will also be formally approved annually by the Chief Risk Officer

PG&E Board – SNO and Compensation Committees

- Annual submission of a) System Hardening project list and b) specific locations of the Enhanced Vegetation Management miles to the committees by the Chief Risk Officer
- Quarterly progress updates on both System Hardening and Enhanced Vegetation Management will be submitted to the committees by the Chief Risk Officer

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Appendix

11/20/2014

