

**PACIFIC GAS AND ELECTRIC COMPANY
Wildfire Mitigations Plans Discovery 2026-2028
Data Response**

PG&E Data Request No.:	TURN_002-Q010
PG&E File Name:	WMP-Discovery2026-2028_DR_TURN_002-Q010
Request Date:	April 7, 2025
Requester DR No.:	TURN-PG&E-2
Requesting Party:	The Utility Reform Network
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Date Sent:	April 10, 2025

SUBJECT: 2026-2028 BASE WMP

QUESTION 010

Please provide a narrative explanation of the decision tree shown in Figure 8.2.1-2, including any criteria that PG&E intends to use to determine if conditions in the decision tree are met.

- a. Figure 8.2.1-2 appears to indicate that UG is preferred when $CBR > 1$ and within 50% of the OH + EPSS CBR and UG NB > OH NB. Please explain the basis for the figure of 50%.
- b. It appears that the decision tree begins with UG as the default option and only moves to alternatives when certain criteria are not met. Why doesn't PG&E begin with the more cost-effective hybrid approach and move to UG when absolutely necessary?
- c. Please explain the tree strike scores and how they are determined? Why is a score of 6+ significant?
- d. Please identify and explain each and every criterion that is considered in determining "Are there Egress/Ingress concerns expressed by PSS team? Please provide a narrative explanation of the types of concerns and how they impact risk.
- e. Please provide a narrative explanation of the PSPS polygon and the effect on CPZ.
- f. At any point in the decision tree, are the hybrid project CBRs recalculated based on different permutations/combinations?

Answer 010

- a. PG&E is incorporating the Cost-Benefit Ratio (CBR) into our decision-making framework in anticipation of this requirement as part of the 10-year Electrical Undergrounding Plan (EUP). The Commission has stated that "the utility is not bound to select its mitigation strategy based solely on the CBRs produced by the Cost-Benefit Approach," supporting the concept that CBR does not need to be the

sole determinant of risk mitigation strategies.¹ This is because an over-emphasis on CBR devalues high cost / high benefit projects. CBR does not consider the absolute benefits and holistic value of permanent risk mitigations, and when used as the sole criteria, results in situations where risk is permanently left on the system, including on circuit segments where undergrounding's benefits are greater than those of overhead hardening.

In our decision tree, CBR is used as the primary criteria for selecting mitigation measures. However, for undergrounding (UG) projects where the benefits are more-favorable than OH hardening + EPSS, these projects will also be considered, provided their cost-benefit ratio falls within an acceptable range relative to the CBR of overhead hardening projects. The 50% threshold is a discretionary value intended to ensure that CBR remains a key consideration, while also allowing for the engineering team to weigh the full range of benefits, including mitigation of tree strike risks, reliability risks created by operational mitigations, and ingress/egress considerations, which are often not fully quantified in CBR or risk calculations. In these cases, the CBR must also be greater than 1, indicating the benefits of the mitigation outweigh its costs.

- b. PG&E's approach to system hardening has been, and continues to be, to begin with the mitigation alternative that permanently reduces the greatest amount of risk, which is undergrounding and line removal with remote grid. If these mitigations do not meet our economic decision criteria, we consider overhead hardening where it may be considered more effective than undergrounding.
- c. PG&E describes what the tree strikes scores are and how they are calculated in our 2022 WMP (PG&E's Revised 2022 WMP, July 26, 2022, pages 584-585). The scores represent the number of fall-in trees that can touch and break a hardened overhead line. Scores greater than or equal to 6 represent a moderate or greater tree fall-in risk.
- d. The PSS considers many factors when evaluating ingress and egress concerns, and it is not possible to identify each and every criterion and how that criterion particularly impacts risk in every situation. The specific facts and circumstances of each situation must be considered on a case by case basis. The specific facts and circumstances of a case, when taken together, form our understanding of the real time risk associated with a particular area. Some of the factors considered include, but are not limited to:
 - Population density
 - Time of day (there are differences between evacuating communities at night when most people are at home compared to during the day when fewer people are at home)
 - Amount of time the public would need to evacuate or shelter in place
 - Notifications and information made available to the public
 - Road infrastructure (e.g., road size, number of lanes, type of surface, destination)

¹ Decision (D.) 22-12-027, Appendix A, Row 26.

- Fuel types along an evacuation corridor (e.g., grass vs. brush vs. timber)
 - Elevated Weather conditions (e.g., red flag days including high temperatures, high winds, low relative humidities)
 - Topography/terrain (do evacuation routes place evacuees in danger due to steep slopes, drainages, and chimneys along a corridor which are often associated with extreme fire behavior)
 - Human factors (e.g., elderly, special needs, evacuating large and small pets, knowledge or experience of citizens living in high fire hazard areas)
 - Location of overhead electrical assets (e.g., poles proximity to the road's shoulder and conductor crossings over those ingress/egress thoroughfares should they become impacted by fire and fail onto the evacuation corridor)
 - Firefighting ingress (e.g., number, type, size of equipment, staging areas, etc.
- e. A PSPS Polygon is a geographical area identified for each PSPS event in the lookback period that identifies which of the overhead assets will have required de-energization. Sometimes the polygon will encompass the entire CPZ, other times just parts. For those instances where it encompasses the full zone, the underground option is considered the PSPS mitigation. For those instances where the underground option does not meet our decision criteria and it has events where only parts of the CPZ is impacted, a more targeted approach to PSPS mitigation is considered for underground inclusion.
- f. There are potentially three iterations of the hybrid scenario in which a new CBR may be calculated in the decision tree:
1. The first time is when all three risks are considered (PSPS, Ingress/Egress, Tree Fall-in).
 2. If that does not meet the economic decision criteria, the underground required for PSPS mitigation is removed and a hybrid scenario considering two risks are considered (Ingress/Egress and Tree Fall-in).
 3. If that does not meet the economic decision criteria, the final hybrid scenario considers only the tree fall-in risk.