

**PACIFIC GAS AND ELECTRIC COMPANY
10 Year Electrical Undergrounding Plan (EUP)
Data Response**

PG&E Data Request No.:	OEIS_001-Q002
PG&E File Name:	EUP-PhI_DR_OEIS_001-Q002
Request Date:	October 7, 2026
Requester DR No.:	Energy Safety-DR-EUP-26-06
Requesting Party:	Office of Energy Infrastructure Safety
Requester:	Adam Berlinerman
Date Sent:	October 12, 2026
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QUESTION 002

Benefit-Cost Ratios (BCRs) and CPUC Data Template

- a. WP006 states that PG&E is using a real discount rate of 4.61% (nominal ATWACC adjusted for inflation) for decision making. PG&E also provides discounted values under the Hybrid and Societal discount rates, consistent with the Risk-Based Decision- Making Framework (RDF).
 - a. What are the "real discount rates" that were used under the Hybrid and Societal discount rate scenarios?
 - b. Given that long-term expected inflation (2.28%) is greater than the Societal discount rate (2%), the "real" Societal discount rate would be a negative value. However, the 2% rate is the social rate of time preference (SRTP) estimated by the Office of Management and Budget (OMB) that is already a real rate that is adjusted for inflation.¹ Confirm whether an additional inflation adjustment is being applied to the current 2% SRTP.
 - c. Per the RDF Phase 3 decision, the Hybrid discount rate incorporates the "10-year effective average inflation rate as measured by the California statewide consumer price index."² Confirm whether an additional inflation adjustment is applied to the Hybrid rate to derive a "real" rate when calculating BCRs.
- b. Are the BCRs calculated only over the project's useful life? For all Confirmed Projects in CPUC Table 1, the useful_life for ALT! is 48 years. However, in CPUC Table 7, ALT! accrues costs over 55 years and not 48 years. Why is this the case?
- c. PG&E has provided different "total cost" numbers in separate parts the tabular data submission. Looking only at Proj000I Undergrounding as Scoped as an example, in Energy Safety's Screen 4 Table (Table C.13), total_costs =17.2725. In CPUC Table 1, present_value_project_costs=15.45557.

¹ <https://www.whitehouse.gov/wp-content/uploads/2023/11/CircularA-4DiscountHistory.pdf>.

² <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M533/K099/533099839.PDF>.
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- a. As outlined in WP006, the denominator of the BCR is the NPV Lifetime Costs which equals the present value of installation capital costs and incremental lifetime O&M costs. Do either of the provided total cost numbers represent the NPV Lifetime Costs as defined in WP006?
- b. If the answer above is no, then describe which cost components are missing and describe how to derive the NPV Lifetime Costs from the given total_costs and present_value_project_costs values.
- d. In CPUC Table 7, where costs_type = "Total CapEx" or "O&M Costs (NBB)," the reported annual_costs_in_year_1 appear to include pre-year 1 costs that were incurred.
 - a. Confirm whether annual_costs_in_year_1 only includes year 1 costs or if it also includes pre-year 1 costs.
 - b. If pre-year 1 costs are included with year 1 costs, provide the pre-year 1 costs broken out by year along with a revised year 1 cost for these cost_types.
- e. In CPUC Table 4, the fields wildfire_rebuild_miles, associated_asset_miles, associated_assets_present_value_capital_costs, and associated_assets_total_mitigation_benefit are listed also for every Confirmed Project in the initial portfolio. Are these values correct? If so, explain the zeroes. If not, provide correct values.
- f. Provide detailed inputs and steps on how the unscaled and scaled BCRs were calculated for one example rru_id from PG&E's portfolio. At a minimum, the response should include:
 - a. all detailed benefit and cost lines for the complete BCR time horizon,
 - b. the discounted cost and benefits for the complete BCR time horizon,
 - c. the total present value of the numerator and denominator,
 - d. an explanation of at which point the risk scaling function is applied and a comparison between scaled and unscaled inputs.
- g. PG&E uses the BCR for 100% Undergrounding (100% UG) at the end of Screen 2 and start of Screen 3 where Circuit Segments are filtered. PG&E uses the 100% UG BCR again for the Screen 3 Benefit-Cost Comparison.
 - a. Are these two 100% UG BCRs values identical? Prior to the Screen 3 Benefit-Cost Comparison, PG&E inputs scope mileage and unit cost assumptions into their Foundry WPC Feedback Loop Tool. Updated mileage and unit cost assumptions are input again following the Desktop Scoping Meeting. Does this result in revised 100% UG BCRs?
 - b. If the 100% UG BCR does change, provide the revised 100% UG BCR that is utilized for the Screen 3 Benefit-Cost Comparison for all Confirmed Projects that have passed through Screen 3.
 - c. As stated in WP004, each feedback loop record is assigned a status: Draft, Pre-DSM, or Final. For all Alternative Mitigations, are the BCRs reported in the Screen 4 Table the "final" BCRs following the Desktop Scoping Meeting or are they the BCRs evaluated prior to the initial Screen 3 Benefit-Cost Comparison?

ANSWER 002

- a.
- a. For the Hybrid discount rate scenario, a real discount rate of 3.73% was used for safety and reliability terms and the WACC real discount rate of 4.61% was used for financial terms. A real discount rate of -0.27% was used under the Societal discount rate scenario (see discussion of WACC Hybrid, and Societal discount rate methodologies in PG&E's Electrical Undergrounding Plan, Rev. 0 (September 30, 2026), OEIS Docket #PGE-EUP, Vol. 1, p. 316).
 - b. Yes. In the EUP as filed, we inadvertently applied an additional inflation adjustment to the 2% Societal discount rate, resulting in the -0.27% real rate identified above. Because the 2% Societal discount rate is already expressed as a real rate, that additional adjustment should not have been applied. We are correcting this error through the October 12, 2026, errata by applying the 2% Societal discount rate directly, without an additional adjustment for inflation.
 - c. An additional inflation adjustment is appropriately applied to the nominal Hybrid discount rate to derive a real discount rate when calculating BCRs. Per the RDF Phase 3 Decision (D. 24-05-064), the Hybrid discount rate formulation incorporates the "10-year effective average inflation rate as measured by the California statewide consumer price index", the "10-year effective average per-capita real growth rate of wages", and the "most recent near-term SRTP"³ of 2%.⁴ The product of the terms of the Hybrid discount rate formulation thus produces a nominal discount rate from which the real discount rate can be derived.
- b. The inclusion of incremental_om_costs and incremental_om_savings values beyond year 48 for Alt1 RRU's resulted from the use of an incorrect 55-year expected useful life for Overhead Hardening. We corrected these values in the SPD-37 Table 7 errata filed on October 12, 2026.
- c.
- a. Yes. The total_costs value of 17.2725 for Proj0001 in Energy Safety's Screen 4 Table (Table C.13) represents the NPV Lifetime Costs as defined in WP006. Accordingly, no additional cost components are required to derive the NPV Lifetime Costs for purposes of the BCR calculation. Note, that the reference to incremental lifetime O&M costs in section 4.1, figure 9: Benefit Cost Ratio Calculation of WP006 is intended to reflect the difference between the lifetime O&M costs associated with the mitigation alternative and the lifetime O&M costs of the baseline scenario.
 - b. N/A
- d.

³ D.24-05-064, *Decision Addressing Phase 3 Issues*, R.20-07-013, pp. 103–104 (June 6, 2024); <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M533/K099/533099839.PDF>.

⁴ See WP011, Core Capability 4.1

- a. The annual_costs_in_year_l also includes pre-year 1 costs, in order to accurately reflect the accrued total costs for the RRUs in Portfolio P00, for which costs begin accruing in 2026.
- b. Please see the "Q002.d.b" tab of the attachment "*EUP-Phi_DR_OEIS_001-Q002Atch01.xlsx*".
- e. These values are all correct for the reasons provided below for each case:

wildfire_rebuild_miles: this is currently 0 for all RRUs in P00 because none of the RRUs are associated with a Wildfire Rebuild Project, and because PG&E does not identify a pre-mitigation wildfire_rebuild_miles value for circuit segments which are in a wildfire rebuild area. The designation of a circuit segment as being within a wildfire rebuild area is determined by the presence of recorded damage to PG&E assets and/or facilities as a result of a wildfire incident.

associated_asset_miles: this is currently 0 because the only associated assets PG&E is able to provide in SPD37 T4 is the secondary and/or service circuit segment length for each RRU, and that data is incomplete in PG&E's system of record. PG&E may be able to provide secondary and/or service circuit segment miles for some RRUs in the future.

associated_assets_present_value_capital_costs: this will always be 0 because PG&E does not assign any present value capital cost to secondary or service conductor miles.

associated_assets_total_mitigation_benefit: this will always be 0 because PG&E does not assign any risk mitigation benefit to secondary or service conductor miles.
- f.
 - a. For the detailed benefit and cost lines for the complete BCR time horizon, please see the "Q002.f" tab of the attachment "*EUP-Phi_DR_OEIS_001-Q002Atch01.xlsx*".
 - b. For the discounted cost and benefits for the complete BCR time horizon, please see the "Q002.f" tab of the attachment "*EUP-Phi_DR_OEIS_001-Q002Atch01.xlsx*".
 - c. For the total present value of the numerator and denominator,
 - d. please see the "Q002.f" tab of the attachment "*EUP-Phi_DR_OEIS_001-Q002Atch01.xlsx*". Risk scaling occurs prior to all subsequent calculations performed within the Wildfire Benefit Cost Analysis (WBCA) to derive the risk reduction benefits that go into the numerator of Benefit Cost Ratio (BCR). Scaled or unscaled risk exposure values are provided by the applicable Enterprise Risk Bow Tie and incorporated into the WBCA as an input. The WBCA then uses these risk exposure values in all downstream calculations and data transformations. For additional information on how risk exposure is incorporated into the WBCA, please refer to Section 2.3, Risk Exposure Inputs, of the WBCA Whitepaper (WP006).

For the numerator of unscaled BCR Calculation we use total risk reduction benefits by adding:

 - Unscaled Wildfire Risk Reduction Benefits

- Unscaled EPSS Risk Reduction Benefits
- Unscaled PSPS Risk Reduction Benefits
- Unscaled Baseline Outage Reliability Risk Reduction Benefits
- Unscaled Public Safety Risks Reduction Benefits from PCEEE

For the numerator of scaled BCR Calculation we use a total risk reduction benefit by adding:

- Scaled Wildfire Risk Reduction Benefits
 - Unscaled EPSS Risk Reduction Benefits
 - Scaled PSPS Risk Reduction Benefits
 - Unscaled Baseline Outage Reliability Risk Reduction Benefits
- Unscaled Public Safety Risks Reduction from PCEEEg.
 - a. No, the Screen 2 100% UG BCR used to start Screen 3 is different from the final Screen 3 100% UG BCR. The final Screen 3 100% UG BCR value following scoping is the result of the updated understanding of the site conditions and required route modifications to build the 100% UG solution.
 - b. The 100% UG BCR does change. The revised Screen 3 BCR used for decision-making is in PG&E's underlying dataset housed in Foundry. Please note this BCR is not a required value in EUP Data Table C.12 (Screen 3). These BCRs are shared in Table 13 when the 100% UG solution is selected as the project as scoped. However, what is in table 13 does not provide the 100% UG BCR value in all cases – rather BCR from just the undergrounding portion of the project. To see a comparable 100% UG in screen 2 to beyond, please see the “Q002.g.b” tab of the attachment “ EUP-Phi_DR_OEIS_001-Q002Atch01.xlsx” that shows BCRs for 100% UG from Screen 2 and Screen3/4.
 - c. Yes, the BCRs included in EUP Data Table C.13 Screen 4 are the final BCR values calculated after scoping is completed. No Screen 2 BCR values are used to finalize the mitigation decision in Screen 3, they are all updated to account for the findings in our scoping meetings.