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

PG&E Data Request No.:	TURN_001-Q010
PG&E File Name:	EUP-PhI_DR_TURN_001-Q010
Request Date:	October 19, 2026
Requester DR No.:	001
Requesting Party:	The Utility Reform Network
Requester:	A Mireille Fall
Date Sent:	October 22, 2026
Responsible Person(s):	Justin Sadler

Subject: EUP-PGE

QUESTION 010

Regarding Table 2-5 on page 63.

a. Please provide all analysis in Excel supporting the values in this table.

b. In Excel, please provide all circuit segments in WDRMv4 including ID and overhead mileage. Please calculate each metric for each circuit segment shown in the table, unless not applicable.

   i. Please include all data and assumptions to calculate the metric.

   ii. For each value other than lines 5 and 6 please provide the average value of the metric in PG&E's HFTD. Please provide in Excel with all supporting calculations and assumptions including at the circuit segment level.

   iii. Please indicate which circuit segments meet the threshold criteria set by PG&E.

   iv. For lines 5 and 6, please provide the list of mitigations that can meet this standard.

      1. Please indicate which of these mitigations were modeled in the EUP.

ANSWER 010

a. Please see the requested information provided in "*EUP-PhI_DR_TURN_001-Q010Atch01.xlsx*."

b. Please see the requested information provided in "*EUP-PhI_DR_TURN_001-Q010Atch01.xlsx*."

   i. Please see the table below

Line No	Standard or Threshold	Value	Cell Reference in "*EUP-PhI_DR_TURN_001-Q010Atch01.xlsx*"
1	High Risk Threshold	$0.029M OUR/OH Mile	High Risk!C:3
2	Ignition Tail Risk Threshold	$52.437M per ignition	Tail Risk!D:6
3	High Frequency Outage Program Threshold	5,559 outage minutes/year	Outage Risk!D:6
4	High Risk Project-Level Standard	Varies	High Risk!I:I
5	High Frequency Outage Program Project-Level Standard	90%	See Below
6	Tail Risk Project-Level Standard	90%	See Below
7	Ignition Portfolio-Level Standard – Portfolio Level	$0.045M /OH Mile	Portfolio Level Standards!E:4
8	Outage Portfolio-Level Standard – Portfolio Level	$0.100M /OH Mile	Portfolio Level Standards!E:5
9	Ignition Portfolio-Level Standard – System Level	$0.0023M /OH Mile	Portfolio Level Standards!E:6
10	Outage Portfolio-Level Standard – System Level	$0.0049M /OH Mile	Portfolio Level Standards!E:7

High Frequency Outage Program Project-Level Standard

The EUP Guidelines, Section 2.7.9.2, Project-Level Standards, Subsection (b), High Frequency Outage Program Project-Level Standard, states that the "High Frequency

Outage Program Project-Level Standard is the minimum decrease in Outage Program Likelihood as measured through formal calculations of the KDMMs that any Undergrounding Project considered under the High Frequency Outage Program must achieve to meet the required substantial increase in electrical reliability achieved by reducing the use of public safety power shutoffs, enhanced powerline safety settings, deenergization events, and any other outage programs."

As described in Chapter 7: Risk Modeling Methodology, Section M, Project-Level Thresholds and Standards, 2(b), High Frequency Outage Program Project-Level Standard, a Project must reduce the likelihood of Enhanced Powerline Safety Settings (EPSS) and Public Safety Power Shutoff (PSPS) on a Circuit Segment by at least 90 percent. PG&E selected 90 percent as a conservative Standard to distinguish substantial mitigation from incremental improvement. Under this Standard, a Project must reduce at least 90 percent of pre-mitigation Outage Program Likelihood, leaving no more than 10 percent of the original likelihood remaining. PG&E considers this level of reduction a readily verifiable demonstration of substantial improvement because it requires the Project to materially reduce the underlying hazard rather than merely produce a marginal or measurable change.

Tail Risk Project-Level Standard

The EUP Guidelines, Section 2.7.9.2, Project-Level Standards, Subsection (c), Tail Risk Project-Level Standard, states that the "Tail Risk Project-Level Standard is the minimum decrease in wildfire likelihood that any Undergrounding Project considered under the Ignition Tail Risk Threshold must achieve to meet the required substantial reduction of the risk of wildfire." As described in PG&E's EUP, Chapter 6: Model Report, Section M, Project-Level Thresholds and Standards, 2(c), Tail Risk Project-Level Standard: "PG&E selected 90 percent as a conservative Standard to distinguish substantial mitigation from incremental improvement. Under this Standard, a Project must reduce at least 90 percent of pre-mitigation Ignition Likelihood or Outage Program Likelihood, leaving no more than 10 percent of the original likelihood remaining. PG&E considers this requires the Project to materially reduce the underlying ignition likelihood, rather than merely produce a marginal or measurable change".

ii. Please see the table below

Line No	Standard or Threshold	Value	Cell Reference in "*EUP-PhI_DR_TURN_001-Q010Atch01.xlsx*"
1	High Risk Metric Average	$0.402M OUR/OH Mile	High Risk!C:4
2	Ignition Tail Risk Metric Average	$1.463M /OH Mile	Tail Risk!D:7
3	High Frequency Outage Program Average	103 outage minutes/year	Outage Risk!D:7

4	High Risk Project-Level Standard Average	$0.397M OUR/OH Mile	High Risk!C:5
5	High Frequency Outage Program Project-Level Standard	90%	Not Applicable
6	Tail Risk Project-Level Standard	90%	Not Applicable
7	Ignition Portfolio-Level Standard – Portfolio Level	$0.045M /OH Mile	Portfolio Level Standards!E:4
8	Outage Portfolio-Level Standard – Portfolio Level	$0.100M /OH Mile	Portfolio Level Standards!E:5
9	Ignition Portfolio-Level Standard – System Level	$0.0023M /OH Mile	Portfolio Level Standards!E:6
10	Outage Portfolio-Level Standard – System Level	$0.0049M /OH Mile	Portfolio Level Standards!E:7

iii. See Table Below

Line No	Standard or Threshold	Cell Reference in "*EUP-PhI_DR_TURN_001-Q010Atch01.xlsx*"
1	High Risk Threshold	High Risk!E:E
2	Ignition Tail Risk Threshold	High Risk!R:R
3	High Frequency Outage Program Threshold	High Risk!Q:Q

iv. Undergrounding and Remote Grid with Line Removal are the alternatives modeled in the EUP that can achieve the 90 percent standard. Undergrounding is modeled as eliminating EPSS and PSPS likelihood on the mitigated portion of the Circuit Segment.

Overhead Hardening is also modeled, but it provides no reduction in PSPS likelihood and only partial reduction in EPSS likelihood. As a result, Overhead Hardening alone would not satisfy the 90 percent High Frequency Outage Program Project-Level Standard. For hybrid projects, compliance depends on the combined mitigation effectiveness across the Circuit Segment.