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September 10, 2024 VIA ELECTRONIC FILING

Tony Marino
Acting Deputy Director
Electrical Infrastructure Directorate
Office of Energy Infrastructure Safety

RE: MUSSEY GRADE ROAD ALLIANCE COMMENTS ON OFFICE OF ENERGY SAFETY INFRASTRUCTURE DRAFT DECISION ON SOUTHERN CALIFORNIA EDISON COMPANY 2025 WILDFIRE MITIGATION PLAN UPDATE

Dear Acting Deputy Director Marino,

The Mussey Grade Road Alliance (MGRA or Alliance) files these comments pursuant to the Cover letter to the Stakeholders for San Diego Gas and Electric Company 2025 Wildfire Mitigation Update[1] which authorizes stakeholders to file comments on SCE's and SDG&E's 2023-2025 Wildfire Mitigation Plan Draft Decisions by September 10th, 2024. The Alliance filed comments on the 2022 Wildfire Mitigation Plans of all major IOUs April 11, 2022,[2] and filed Reply Comments on April 18, 2022.[3]

The Alliance reply comments are authored by the Alliance expert, Joseph W. Mitchell, Ph.D.

[1] 2023-2025-WMPs; OFFICE OF ENERGY INFRASTRUCTURE SAFETY; DRAFT DECISION; 2025 SAN DIEGO GAS AND ELECTRIC COMPANY 2025 WILDFIRE MITIGATION UPDATE (Draft Decision or DD)
[2] 2023-2025-WMPs; MUSSEY GRADE ROAD ALLIANCE COMMENTS ON 2023-2025 WILDFIRE MITIGATION PLANS OF PG&E, SCE, AND SDG&E; May 26, 2023. (MGRA Comments)
[3] 2023-2025-WMPs; MUSSEY GRADE ROAD ALLIANCE REPLY COMMENTS ON 2023-2025 WILDFIRE MITIGATION PLANS OF PG&E, SCE, AND SDG&E; June 6, 2023. (MGRA Reply)

Respectfully submitted this 10th day of September, 2024,

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COMMENTS ON THE OFFICE OF ENERGY SAFETY INFRASTRUCTURE DRAFT DECISION ON SAN DIEGO GAS AND ELECTRIC COMPANY 2025 WILDFIRE MITIGATION PLAN UPDATE ON BEHALF OF THE MUSSEY GRADE ROAD ALLIANCE

The Mussey Grade Road Alliances' (MGRA or Alliance) comments are authored by MGRA's expert witness Joseph W. Mitchell, Ph.D.[4]

1. INTRODUCTION

MGRA supports portions of Energy Safety's Draft Decision for San Diego Gas and Electric Company's 2025 Wildfire Mitigation Plan Update, and appreciates that OEIS recommends adopting MGRA suggestions in the areas of covered conductor.

As MGRA noted in its comments in last year's comments, OEIS has taken a cursory view of the utility plans and has not delved particularly deeply into some areas, leaving fairly extensive swathes of the utility safety landscape only partially examined or entirely ignored. It is in these areas that external stakeholders who might have specialized knowledge or expertise may be particularly helpful. Integrating this input in a correct manner improves regulation. However, this year's update review seems to have further restricted its scope from last year's.

The timing for this reduction of supervision could not be worse. It is precisely now that all three major utilities are deploying their hardening programs, and advanced wildfire mitigation technologies, and to a great extent the ratios chosen depend on the calculated efficiencies of these mitigations. These estimates are still in flux, as shown in MGRA's WMP comments. However, to a large extent utilities are not being asked to keep these as open questions as they move into their 2026-2028 WMPs. The Commission and public trust the OEIS to set the standards by which utility wildfire mitigation is measured, and this information is needed immediately and not at utility discretion late in the 2026-2028 cycle.

For these reasons MGRA believes that additional analysis and scrutiny must go into the final Decision in order for it to be appropriate for Commission ratification.

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2. GENERAL IMPROVEMENTS FOR THE DRAFT DECISION

2.1. Reduced Scope and Depth of the Review of the Draft Decisions

In its 2023 WMP review of the 2023-2025 Wildfire Mitigation plan updates, MGRA noted that the overall scope and depth of the review had significantly decreased from what were previously in-depth and comprehensive analyses. MGRA noted that the ratio of the number of pages in the Draft Decision to the ratio of pages submitted had dropped more than 50%. Among MGRA's recommendations was to ensure that the Wildfire Mitigation Plan reviews were adequately staffed and resourced.

For the 2024 decisions on the 2025 Wildfire Mitigation Plan Update, Energy Safety review is even briefer and less in-depth. Of course, the 2025 Update is only supposed to note critical modifications to the previous full WMPs, so it is understandable that it should not require the full resources allocated to a full Wildfire Mitigation Plan. However, determinations in the Draft Decision help to set the scope for the upcoming 2026-2028 WMPs and so it is important that key issues remain live during this period.

2.1.1. Reporting versus Evaluation

For most of the technical sections, the recitation of what the utility reported is described in adequate detail with relevant citations to the utility's wildfire mitigation plan update. This is followed by a "Energy Safety Evaluation" section. The vast majority of these "Energy Safety Evaluation" sections are substantially shorter than the descriptive section, often just consisting of a short paragraph or as little as a single sentence.

Of particular concern are the issues for which Energy Safety is requiring no further reporting or no further improvement on for the 2026-2028 WMPs, which will be a major update. Many of these issues, at least according to stakeholders, still are under significant flux and may be controversial. For SCE, these include:

- Risk model evaluation
- Issues related to hardening, including covered conductor and undergrounding

- PSPS impacts
- Deployment of programs such as FCP at an acceptable rate.

2.1.2. Integrating Stakeholder Input

Additionally, OEIS incorporation of external stakeholder input was minimal, with no stakeholder data requests cited in SDG&E 2025 Update Appendix C. While it would be presumptuous for stakeholders to state their value to the WMP process, OEIS management has always allowed stakeholders to have a voice in OEIS processes and feedback has often been incorporated into OEIS's final products. Many stakeholders, such as MGRA, have a deep interest and stake in the prevention of catastrophic wildfires and control over mitigation costs and have appreciated the opportunity to participate in these efforts.

The California Public Utilities Commission (CPUC), also recognizes the value that stakeholders play in the review of wildfire mitigation plans, particularly as it is the duty of the CPUC to review and ratify these plans, and that specifically it was in the interest of adhering to Commission requirements that intervenors be able to participate in plan reviews. In D.22-09-023, the Commission states that:

"*In short, the Pub. Util. Code has created a complex and interrelated regulatory scheme to address utility wildfire risks. The work of the Commission and Energy Safety is dependent upon and informs each other, and the participation of intervenors in the WMP reviews at Energy Safety is essential to assisting the Commission in performing its statutory duties. Given the required ratification of the WMP disposition by the Commission, the Commission's determination of ratemaking impacts of approved WMPs, the Commission's role in enforcing WMPs, and the importance of ensuring the WMPs adhere to Commission requirements, we find as a matter of policy that it is consistent with the objectives of the statute to encourage the effective participation of intervenors in the WMP reviews at Energy Safety*."[5]

While it may be OEIS's prerogative to determine what level of scrutiny Wildfire Mitigation Plans and their updates must undergo, these determinations feed into California Public Utility

[5] p. 4.

Commission determinations that affect utility spending and liability. They can also be utilized as an "unbiased" source of utility data and analysis. For this reason, the CPUC must ratify each WMP Decision produced by OEIS to ensure that it meets Commission needs. MGRA suggests that OEIS re-evaluate issues that are particularly sensitive or active, providing additional content to the current review, to ensure that utilities continue to provide the required materials in their 2026-2028 WMPs.

3. TECHNICAL ISSUES

3.1. SDG&E-23B-03. PSPS and Wildfire Risk Trade-Off Transparency

In Energy Safety's evaluation of SDG&E's PSPS risk and Wildfire Risk Tradeoff, it determined that "*SDG&E provided information on its decision-making process, leading to greater transparency into how SDG&E integrates wildfire risk and PSPS risk into its considerations. SDG&E also provided examples of how PSPS risk may impact project prioritization, as three of the projects listed in the table were delayed due to the projects having limited or no additional PSPS risk mitigation benefit. With that, SDG&E sufficiently responded to this area for continued improvement; no further reporting is required on this area for continued improvement in SDG&E's 2026-2028 Base WMP*."[6]

MGRA would like to warn OEIS that PG&E's current RAMP process (A.24-05-008) includes mandated inclusion of the Berkely ICE model to estimate costs from power shutoff. Initial analysis of this model indicates that it increases predicted potential harm from outages by orders of magnitude, especially when industrial customers are on the circuit. MGRA has included some of the data presented by PG&E in its second pre-filing workshop as Appendix A.

The requirement to switch to the ICE model will also affect SDG&E within the 2026-2028 period. Energy Safety should require that in its 2026-2028 WMP SDG&E provide an outline of how it projects that using the ICE model with his larger potential contributions from PSPS harm will affects its planning and operations.

[6] DD; p. 14.

3.2. 7.1.2 SDGE-23B-06. Demonstration of Proper Decision Making for Selection of Undergrounding Projects

Energy Safety determined that SDG&E has provided sufficient justification for its undergrounding program and does not need to report further on this issue in its 2026-2028 WMP.[7] This is an ill-considered judgement.

MGRA's Comments provided a number of reasons why SDG&E's response was inadequate.[8] Specifically:

- SDG&E is reducing only 2% residual wildfire risk with its undergrounding program.
- A substantial fraction SDG&E's cost for reducing PSPS risk by undergrounding comes from circuits where there are relatively few customers per mile, leading to an excessive cost per customer.
- SDG&E's expensive undergrounding plan will reduce PSPS risk by only 18% by 2031.
- SDG&E uses an extremely low value for covered conductor efficiency: 64%. Analysis of SCE field data shows this is closer to 85%.
- SDG&E's decision-tree analysis needs to include advanced technologies such as FCD and EFD.

Also, while Energy Safety notes SDG&E's "decision tree" model,[9] it does not follow the implications of that model: by setting the "decision tree" threshold at its own discretion, SDG&E effectively chooses the fraction of undergrounding to covered conductor that it incorporates.

Energy Safety should require additional data on selection of undergrounding projects in the 2026-2028 WMP, including:

- Effect of higher covered conductor efficiency.
- Effect of advanced technologies such as FCD and EFD.

[7] DD; p. 20.
[8] MGRA Comments; pp. 62-65.
[9] DD; p. 19.

3.3. 8.1.1 Grid Design and System Hardening

3.3.1. SDG&E-23B-08. Continuation of Grid Hardening Joint Studies

Covered Conductor Field Data

Among areas for continued improvement, Energy Safety finds that: *"... many of these workstreams must continue, given ongoing developments and importance of sharing knowledge as various IOUs continue implementing mitigations, observing actual in-field effectiveness, and observing potential alternatives and new technologies to deploy.*"[10] MGRA is gratified that Energy Safety recognizes the importance of field data. However Energy Safety's areas for continued improvement as stated are unlikely to provide additional data in the next years.

Energy Safety accepts the SDG&E estimate that its covered conductor effectiveness is 64%. MGRA has been analyzing SCE covered conductor field data for the past several years, and with each year of additional data its conclusion becomes stronger. Current data was described in MGRA comments,[11] and shows that the ignition rate for covered conductor deployed by SCE is a factor of two less than expected by SMEs and external consultants. The reason for this is not clear: outage rates and wires down rates seem to be consistent with SCE expectations, but ignitions are far less. As noted in MGRA's comments: This Is A Big Deal. One disturbing fact is that MGRA has been consistently raising this point in the last WMPs and GRC cycles, and SCE has yet to refute MGRA's results, although they are in a strong position to do so if the results are in error.

Covered conductor effectiveness is used to calculate RSEs and cost/benefit ratios for comparison to undergrounding and for deciding mitigations. While determining costs is not a core mission for OEIS, the effectiveness of mitigations is a critical input, and it is the responsibility of OEIS to ensure that the utilities are calculating these values in an accurate and uniform manner.

Energy Safety's guidance is therefore inadequate to bring about a tangible result in a reasonable timeframe. MGRA has shown the data is there, the utilities must simply analyze the SCE data and use it until they have collected a comparable data set.

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[10] DD; p. 22.
[11] MGRA Comments; pp. 19-24.

Energy Safety should therefore modify the conclusion that no further reporting is required in this area and require SDG&E to provide further updates based on estimates based on actual field data (including SCE field data and SDG&E-specific adjustments) as part of its 2026-2028 WMP.

Erroneous Covered Conductor Degradation Calculation

Without further analysis, Energy Safety presented SDG&E's claim: "*SDG&E clarified that for long-term investment planning, it is more appropriate to use a long-term effectiveness value. Therefore, previous studies on traditional (bare conductor) hardening were used to estimate the effectiveness of covered conductor over time. SDG&E stated that its estimate of the effectiveness of covered conductor installations decreased from 78 percent in year 1 to 65 percent in year 10.*"[12]

MGRA presented a detailed analysis of the raw SDG&E data, showing that their calculation was both mathematically and statistically erroneous.[13] Energy Safety did not mention or refute this analysis, which would appear to be evidence that they do not in fact thoroughly review public comment, even detailed and well-supported analysis (even if to refute it), and instead simply report utility claims without critical analysis.

Energy Safety should modify its reporting on SDG&E's statement and remove quantitative claims that have been refuted. MGRA concurs with SDG&E that a long-term effectiveness value should be used, however utilities should be directed to develop these estimates based on sound statistical models.

FCP Effectiveness and Rate of Deployment

Energy Safety reiterated SDG&E's FCP deployment policy: "*SDG&E explained that this method aims to provide protection on circuits where there is no other mitigation before implementing the combined mitigation of FCP with covered conductor installation. SDG&E stated that this approach is done to gain immediate risk reduction on circuits expected to remain as overhead bare conductor before applying additional mitigation measures on circuits that have*

[12] DD; p. 27.
[13] MGRA Comments; pp. 66-69.

already had risk reduction associated with covered conductor installation."[14] Energy Safety's evaluation then stated that "*SDG&E sufficiently responded to this area for continued improvement; no further reporting is required on this area for continued improvement in SDG&E's 2026-2028 Base WMP*."[15]

While SDG&E's FCP deployment policy sounds reasonable, it is actually problematic because SDG&E has de-scoped lines that are planned for undergrounding in the long term. These in general are the highest-risk circuits. SDG&E's undergrounding plan extends out in time several years, meaning that residence at risk from the highest risk circuits will not benefit from FCP or advanced technologies and will be exposed to longer term risk. Due to the modest cost of deploying these technologies, MGRA in its comments recommended that advanced technologies remain in scope for circuits unless undergrounding is planned within two years.[16]

3.4. 11.3 Grid Design, Operations, and Maintenance

3.4.1. SDGE-25U-04. Continuation of Grid Hardening Joint Studies

MGRA is gratified that Energy Safety has recognized the importance of covered conductor field data in determining its effectiveness.[17] However, there is only one utility that has deployed enough covered conductor to supply usable data at this point in time and that is Southern California Edison. MGRA has presented unrefuted data and analysis from SCE field data from its much more extensive covered conductor deployment that implies that actual covered conductor effectiveness may be more than a factor of two higher than this.[18]

To wait until the other utilities have gathered enough data would effectively allow them to complete a considerable portion of their proposed undergrounding plans before it can be effectively determined that this was not the wisest course, resulting potentially in billions of dollars of extra costs to ratepayers. Hence, given Energy Safety's goal, its method to achieve this goal is erroneous and will not achieve the desired result.

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[14] DD; p. 33.
[15] Id.
[16] MGRA Comments; p. 61.
[17] DD.; p 70, A-12.
[18] MGRA Comments; pp. 22-24.

Energy Safety should therefore modify the conclusion that no further reporting is required in this area and require SDG&E to provide further updates based on estimates based on actual field data (including SCE field data and SDG&E-specific adjustments) as part of its 2026-2028 WMP.

4. CONCLUSION

MGRA has always held Energy Safety and its work in high regard, but does not consider the current review up to OEIS's previously high standards. MGRA urges Energy Safety to undertake additional analysis and review in active and sensitive areas to ensure that critical areas are addressed in the upcoming 2026-2028 Wildfire Mitigation Plans. MGRA also respectfully requests that OEIS make the additional changes that MGRA has suggested in the technical sections.

Respectfully submitted this 10th day of September, 2024,

By: __/S/ ***Joseph W. Mitchell, Ph.D.***_____

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Attachment A: *Selected pages from:*
PG&E 2024 Risk Assessment and Mitigation Phase Workshop #2:
Cost-Benefit Approach Demonstration; April 11, 2024

APPENDIX A

PG&E 2024 Risk Assessment and Mitigation Phase Workshop #2: Cost-Benefit Approach Demonstration

April 11, 2024

Principle 5 – Monetized Levels of Attributes

Element Description and Requirements

RDF Element No. 6: *"Apply a monetized value to the Levels of each of the Attributes using a standard set of parameters or formulas, from other government agencies or industry sources, as determined by the Phase II Decision Adopting Modifications to the Risk-Based Decision-Making Framework Adopted in D.18-12-014 and Directing Environmental and Social Justice Pilots in Rulemaking (R.) 20-07-013.*

A utility may deviate from the agreed upon standard set of parameters or formulas by submitting a detailed explanation as to why the use of a different value would be more appropriate. The use of a different set of parameters or formulas to determine the Monetized Levels of Attributes requires an analysis comparing the results of its "equivalent or better" set of parameters or formulas against the results of the agreed upon standard set of parameters or formulas."

PG&E adopted the following Monetized Attribute values based on the requirements outlined in D.22-12-027.

Safety

Calculated using the Department of Transportation (DOT) guidance for the Value of a Statistical Life (VSL), adjusted for: 1) California price and real wage data, and 2) the base year of the RAMP filing.

2023 CA-Adjusted VSL:
$15.23 million (1,2)

Electric Reliability

Calculated using the Lawrence Berkeley National Laboratory (LBNL) Interruption Cost Estimate (ICE) Calculator, updated with PG&E-specific information.

Expressed in dollars per customer-minute interrupted.

2023 $/CMI
$3.17 (3)

Gas Reliability

For gas reliability, the Risk OIR Phase II Decision directs IOUs to use the implied dollar value from their most recent RAMP MAVF risk score calculations.

The implied gas reliability value expressed in dollars per customer impacted:

2023 $/Customer:
$1,569.75 (4)

Notes to Results:

1. $2023 VSL calculated by adjusting the $2012 DOT VSL using inflation (CPI) and real wage growth data from the Bureau of Labor Statistics (BLS), per DOT guidance.
2. $2023 California-adjusted VSL calculated by applying price and income modifiers derived from CPI and weekly earning data from the BLS and California Department of Industrial Relations
3. PG&E used PG&E-specific data in the ICE Calculator such as customer class composition and annual energy usage, C&I industry percentages, temporal outage distribution and average interruption frequency. ICE Calculator year 2016 results were adjusted to $2023 using BLS CPI data.
4. $2023 Gas Reliability value calculated by adjusting the 2020 MAVF-implied values, which is in 2020 dollars, using BLS CPI data.

Overview of ICE Calculation Used for Reliability Attribute

Note: This shows an initial screen shot of the ICE calculator *prior to* applying PG&E's User Inputs.

ICE Calculator User Inputs (highlighted in yellow)

Reliability Inputs:

SAIFI	2.000
SAIDI	120.0
CAIDI	60.0

Number of Customers:

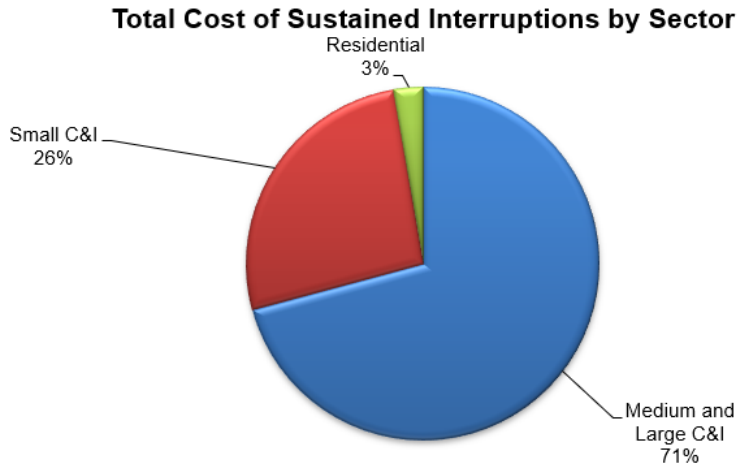
Non-Residential	1,000
Residential	10,000

Choose state/states:

State 1	California

Main Output:

Sector	No. of Customers	Cost Per Event (2016$)	Cost Per Average kW (2016$)	Cost Per Unserved kWh (2016$)	Total Cost of Sustained Interruptions (2016$)
Medium and Large C&I	169	$8,444.8	$161.2	$161.2	$2,854,333.0
Small C&I	831	$643.6	$311.5	$311.5	$1,069,733.4
Residential	10,000	$5.3	$6.5	$6.5	$106,819.7
All Customers	11,000	$183.2	$107.3	$107.3	$4,030,886.1



PG&E used the ICE Calculator spreadsheet tool, 2018 update, found on the ICE Calculator documentation page

RDF Requirement regarding ICE Calculator

The RDF Proceeding Phase II Decision requires each IOU to use the most current version of the ICE Calculator to determine a standard dollar valuation of Electric Reliability risk for the Reliability Attribute.

ICE Calculator Overview

The Interruption Cost Estimate (ICE) Calculator is a tool designed for electric reliability planners at utilities, government organizations or other entities that are interested in estimating interruption costs and/or the benefits associated with reliability improvements.

What Interruption Cost Means

Interruption Costs refer to value of electric service reliability estimates developed through either surveys of the economic losses customers experience because of electric service interruptions or customers' willingness-to-pay to avoid/willingness-to-accept compensation for such problems.

PG&E's Electric Reliability Risk Valuation

The natural unit of PG&E's electric reliability attribute is customer minutes interrupted (CMI) per event, however Cost per CMI is not a standard output. Thus, PG&E computes it by dividing ❶[Cost per Event] by ❷[SAIDI] after setting [SAIFI] as 1 and [Number of Customers] as total number of customers.

PG&E Inputs Used in ICE Calculator

PG&E used PG&E-specific data in the ICE Calculator to arrive at $3.17/CMI.

	ICE Calculator Input Variable	User Input Default	PG&E Data	PG&E Data Source
Number of Customers	Non-Residential Residential	1,000 10,000	**633,547** **4,961,426**	2023 recorded accounts data from PG&E's Rate Design and Analytics Department
Number of Accounts by Rate Class	Residential Small C&I Medium and Large C&I	12,971,924 1,567,550 319,434	**4,961,426** **469,588** **163,960**	2023 recorded accounts data from PG&E's Rate Design and Analytics Department
Annual Usage per Customer (MWh)	Residential Small C&I Medium and Large C&I	7.2 18.1 459.0	**5.1** **15.3** **240.6**	2023 recorded usage data from PG&E's Rate Design and Analytics Department
Medium and Large Commercial and Industrial (C&I) Customer Mix	~~Construction~~ Manufacturing ~~All Other Industries~~	~~2.0%~~ 17.1% ~~80.9%~~	~~**2.0%**~~ **9.5%** ~~**88.5%**~~	2023 recorded accounts data from PG&E's Rate Design and Analytics Department
Small C&I Customer Mix	~~Small C&I~~ ~~Construction~~ Manufacturing ~~All Other Industries~~	~~9.5%~~ 5.0% ~~85.5%~~	~~**9.5%**~~ **7.1%** ~~**83.4%**~~	2023 recorded accounts data from PG&E's Rate Design and Analytics Department
Reliability Inputs	SAIFI SAIDI CAIDI	2.00 120.00 60.00	**1.00** **120.00** **120.00**	~~Recorded annual average data from 2013-2022~~
Outages by Time of Day	Morning (6 am to 12 pm) Afternoon (12 pm to 5 pm) Evening (5 pm to 10 pm) Night (10 pm to 6 am)	25% 21% 21% 33%	**13%** **23%** **28%** **36%**	Electric Operations unplanned outage data from 2016-2023
Outages by Time of Year	Summer (June through September) Non-Summer (October through May)	50% 50%	**29%** **71%**	Electric Operations unplanned outage data from 2016-2023

PG&E's Electric Reliability Attribute Risk Valuation

PG&E Plans to Use the Weighted Average Value of Electric Reliability from ICE for its 2024 RAMP.

- Large disparities in Values between C&I and Residential Customers could lead to significant, unintended consequences.
- PG&E will review the policy of using the Average pending the ICE 2.0 update.
- PG&E expresses the Monetized Electric Reliability Attribute as Cost per Customer Minutes Interrupted ($/CMI), shown below in $2023.

$$\frac{\boldsymbol{Cost}}{\boldsymbol{CMI}} = \frac{Cost\ Per\ Event}{SAIDI} = \frac{Cost\ Per\ Event \times Total\ No.of\ Customers}{Sum\ of\ All\ Customer\ Interruption\ Durations}$$

ICE Model Outputs				
	ICE User Input Default		PG&E Data	
Sector	Cost per CMI (2016$)	**Cost per CMI ($2023)**	Cost per CMI (2016$)	**Cost per CMI ($2023)**
Medium and Large C&I	$70.37	$89.34	$61.35	$77.89
Small C&I	$5.36	$6.81	$7.87	$9.99
Residential	$0.04	$0.06	$0.04	$0.06
All Customers	**$1.53**	**$1.94**	**$2.50**	**$3.17**

- To compute Electric Reliability Attribute Risk Values in its risk models, PG&E is using the $3.17/CMI for all customer classes.
- The resulting Electric Reliability Risk Values are approximately 63% higher with PG&E's User Inputs, compared to $1.94/CMI from the default User Input.

Note: PG&E adjusted ICE Calculator year 2016 results to $2023 using BLS CPI data, available at https://data.bls.gov/timeseries/CUUR0000SA0 .