Company: San Diego Gas & Electric Company (U 902 M)
Proceeding: 2024 General Rate Case – Track 2
Application: A.22-05-016
Exhibit: SDG&E-T2-06

PREPARED REBUTTAL TESTIMONY OF JONATHAN WOLDEMARIAM ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY (TRACK 2 - WILDFIRE)

(PUBLIC VERSION)

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

July 26, 2024

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PREPARED REBUTTAL TESTIMONY OF JONATHAN WOLDEMARIAM ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY

I. INTRODUCTION AND SUMMARY OF TESTIMONY

San Diego Gas & Electric Company's (SDG&E) commitment to wildfire safety goes without question. In the aftermath of the 2007 wildfires in SDG&E's service territory, SDG&E committed itself to establish a position as an innovator leading the utility industry in wildfire mitigation, risk assessment, and situational awareness. That innovative process was only enhanced after catastrophic wildfires related to utility equipment ravaged the state in 2017 and 2018, and in response to California's mandate to "construct, maintain, and operate [] electrical lines and equipment in a manner that will mitigate the risk of catastrophic wildfire posed by those lines and electrical equipment."[1]

My Revised Direct Testimony describes the enhancement of SDG&E's wildfire mitigation program in response to Assembly Bill (AB) 1054 and Senate Bill (SB) 901, and in support of SDG&E's 2019-2022 Wildfire Mitigation Plans (WMP). These efforts and the associated costs were reasonable and cost effective to promote the safe and reliable operation of SDG&E's electrical infrastructure, particularly in the High Fire Threat District (HFTD) that comprises 64% of the company's service territory. SDG&E's WMP initiatives met the requirements of Public Utilities Code Section 8386, *et. seq*. and fostered improved safety and operations through the development of targeted risk assessment methods, situational awareness of weather and high-risk conditions, enhanced inspections leveraging new technologies, enhanced vegetation management, emergency operations, and hardening SDG&E's infrastructure to foster safety, reliability, and resiliency.

In addition to being cost-efficient, SDG&E's 2019-2022 WMP efforts were effective. SDG&E has experienced 16 years without a utility-related catastrophic wildfire. This success has been recognized across the utility industry, by the California Public Utilities Commission (Commission or CPUC), and by the investment community.[2] Assumedly recognizing this success, most of the intervening parties do not object to SDG&E's wildfire mitigation efforts and

[1] Public Utilities (Pub. Util.) Code §8386(a).

[2] *See* Revised Prepared Direct Testimony of Jonathan Woldemariam on Behalf of SDG&E, Chapter 1 (Track 2 – Wildfire) (February 9, 2024) (Ex. SDG&E-T2-01R (Woldemariam)) at 2.

focus their recommended reductions to limited aspects of SDG&E's incremental wildfire mitigation activities, or question their incrementality to activities authorized in SDG&E's Test Year 2019 General Rate Case Decision (SDG&E's TY 2019 GRC), Decision (D.) 19-09-051. This rebuttal testimony establishes that the activities and direct costs in support of SDG&E's 2019-2022[3] wildfire mitigation efforts and addressed in my Revised Direct Testimony were both reasonable and incremental.[4] In summary:

- SDG&E prudently managed its WMP and the associated costs are reasonable. As discussed in SDG&E's WMP submissions, SDG&E assessed the risks and effectiveness of its wildfire mitigation initiatives, in addition to assessing their cost effectiveness. While cost effectiveness is but one of the factors that the Commission considers when assessing the reasonableness of an activity,[5] SDG&E performed cost effectiveness analyses for its WMP initiatives, as evidenced by the Risk Spend Efficiency Calculations included in SDG&E's WMP submissions for applicable initiatives.
- SDG&E's direct costs are incremental to those authorized in D.19-09-051. The California Legislature understood the magnitude of costs that would be associated with complying with approved Wildfire Mitigation Plans and directed the Commission to authorize memorandum accounts to allow the rapid implementation of enhanced wildfire mitigation activities.[6] The analysis of SDG&E's authorized and direct costs, further described in Mr. Gentes' Direct and Rebuttal Testimony, establishes their incrementality. SDG&E should not be held to account for incremental units of work—which were not forecast or authorized in D.19-09-051, nor should the Commission give credence to the Public Advocates Office at the California Public Utilities Commission (Cal Advocates) calculations of incrementality, which are based on what appear to be inadvertent

[3] As discussed in my Revised Direct Testimony, the Commission authorized SDG&E's WMPMA to record costs incurred for wildfire mitigation effective June 30, 2019. For ease of reference, I refer to costs incurred to implement SDG&E's 2019-2022 WMPs, but as further discussed in the Direct Testimony of Mr. Gentes, the incremental WMPMA costs sought in the Track 2 phase were incurred from June 30, 2019-December 31, 2022.

[4] As a preliminary matter, the absence of a response to any issue in this rebuttal testimony does not imply or constitute agreement by SDG&E with the proposal or contention made by these or other parties.

[5] D.22-06-032 at 7-8 (citing D.17-11-033) (emphasis added).

[6] Pub. Util. Code §8386.4(a).

calculation errors that mischaracterize authorized costs associated with the WMP initiative categories.

- SDG&E's direct and indirect labor costs are incremental to those authorized in D.19-09-051. Contrary to the testimony of Cal Advocates, SDG&E demonstrated that it developed an entirely new Wildfire and Climate Science Division to implement its WMP, and hired at least 40 new employees to focus on wildfire and PSPS.
- The Commission should authorize SDG&E's costs related to work outside the HFTD. In many cases, the non-HFTD work is foundational and a core component of project scope. For example, SDG&E's Distribution Communications Reliability Improvements required the installation of base stations outside the HFTD because they must be in communications with SDG&E's operational hubs. Additionally, the very small percentage of work outside the HFTD was reasonable to accommodate the design of SDG&E's existing infrastructure and address known risk, since most non-HFTD projects were installed in the Wildland Urban Interface (WUI), or within mere feet of the HFTD boundary. This work is reasonably justified and tailored to the wildfire risk posed by that area, system needs, or reducing the need for Public Safety Power Shutoff (PSPS).
- The other direct costs addressed by intervenors are also reasonable and incremental. For example, Cal Advocates' objections to the Alerts By SDG&E app are ill founded, as the recommended reductions are untethered to the app and instead cover the entirety of SDG&E's PSPS Communications Practices, including customer and public safety partner notifications designed to comply with Commission requirements.
- Cal Advocates' recommendations regarding forecasted future ratepayer savings associated with undergrounding should be disregarded, as those savings will be recognized by ratepayers at the time they are realized—in the form of reduced vegetation management and inspection costs—consistent with principles of intergenerational equity.
- The Protect Our Communities Foundation's (PCF) repeated attempts to continually relitigate a Solar Plus Storage alternative to wildfire hardening and other utility-related wildfire mitigation should be rejected outright. PCF's SPS proposal shifts costs to

customers,[7] and is narrowly tailored to single family residential needs. Further, relying on a combination of SPS and prolonged de-energization for wildfire mitigation fails to comply with mandates the SDG&E "maintain and operate" its lines in a manner that reduces the risk of wildfire and take measures to "reduce the need for, and impact of" PSPS on frequently de-energized circuits.[8] PCF's proposals would leave SDG&E's businesses, first responders, hospitals, and its most vulnerable residential customers in the dark.

Because SDG&E's 2019-2022 WMP costs were reasonable and incremental, the Commission should authorize their recovery in full, through the Affordability Proposal mechanism further discussed in the Direct and Rebuttal Testimony of Ms. Bille.

II. SDG&E HAS DEMONSTRATED THE REASONABLENESS AND COST EFFECTIVENESS OF ITS WILDFIRE MITIGATION COSTS

My Revised Direct Testimony provides an extensive analysis and discussion of SDG&E's total direct costs recorded to the Wildfire Mitigation Plan Memorandum Accounts (WMPMAs), the WMP initiatives those costs supported, and whether those costs were incremental to any amounts previously authorized in D.19-09-051. Where applicable, my Revised Direct Testimony also provides the number of units associated with the activity broken down by year, and a risk reduction estimation based on the ignitions reduced by the initiative.

The Utility Reform Network (TURN) claims that SDG&E failed to understand that its demonstration of reasonableness and compliance with the prudent manager standard would "need to be rigorous."[9] Repeatedly citing various Commission decisions addressing the prudent manager standards, TURN claims that SDG&E failed to put forth any evidence regarding the cost effectiveness of WMP initiatives or a presentation of incremental units of work. TURN's testimony demonstrates a failure to review or understand SDG&E's Wildfire Mitigation Plan

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[7] Prepared Direct Track 2 Testimony Powers of Bill Powers, P.E. on Behalf of PCF (June 14, 2024) (Ex. PCF-41 (Powers)) at 20-21 ("[T]he cost of the SPS whole house generator can largely be ***borne by the customer***—and not as an SDG&E asset paid for by the ratepayers—under the net metering tariff.") (emphasis added).

[8] Pub. Util. Code §8386(a); Pub. Util. Code §8386(c)(8).

[9] Prepared Testimony of Robert Finkelstein on Behalf of TURN (June 27, 2024) (Ex. TURN-1 (Finkelstein)) at 2.

filings—public documents available on SDG&E's website, the components of the thousands of cumulative pages that SDG&E presented to the Commission as evidence in support of the reasonableness of its WMP initiatives and their incremental direct costs, and attempts to characterize cost effectiveness as the sole standard by which costs should be deemed reasonable and prudent. For these reasons, further discussed below, TURN's testimony as to SDG&E's direct wildfire mitigation expenditures should be disregarded.

A. TURN Misrepresents the Prudent Manager Standard

TURN devotes several block quotes to reciting Commission standards regarding the Prudent Manager Standard, as well as how a utility may establish that costs are '"reasonable and prudent.'"[10] "A utility must show that its actions, practices, methods, and decisions show reasonable judgment in light of what it knew or should have known at the time, and in the interest of achieving safety, reliability and reasonable cost."[11] As the Commission recognized in the recent decision approving Southern California Edison Company's (SCE) incremental wildfire mitigation costs for 2021, at the time the WMPMAs were approved, the Commission did not indicate any minimum information requirements for applications requesting cost recovery of expenses tracked in the WMPMA … ."[12] The same holds true for SDG&E.[13] TURN's attempts to impose requirements beyond those known to SDG&E at the time it incurred and recorded costs to its WMPMAs would impose an inappropriate burden of foresight inconsistent with the prudent manager standard.

TURN acknowledges that "[t]he prudent manager is standard is not a standard of perfection, [citing D.14-06-007]" and agrees that:

> A reasonable and prudent act is not limited to the optimum practice, method, or act to the exclusion of all others, but rather encompasses a spectrum of possible practices, methods, or acts consistent with the utility system needs, the interest of the ratepayers and the requirements of government agencies of competent jurisdiction.[14]

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[10] *Id.* at 4.

[11] D.18-07-025 at 3 (citation omitted).

[12] D.24-03-008 at 8.

[13] D.19-05-039 at Ordering Paragraph 13-14.

[14] Ex. TURN-01 (Finkelstein) at 4 (citing D.22-06-032 at 7-8).

Further,

> The act or decision is expected by the utility to accomplish the desired result at the lowest reasonable cost consistent with good utility practices. Good utility practices are based on *cost effectiveness, reliability, safety, and expedition*.[15]

But then TURN proceeds to disregard the authorities it cites and limit the definition of "reasonable and prudent" to one simple factor: cost effectiveness. Claiming that this is the "key element" of the showing required to establish eligibility of rate recovery, TURN ignores the various factors that the Commission must consider when assessing whether the costs recorded in SDG&E's WMPMAs are consistent with "good utility practices." Cost effectiveness is of course important, but it is not the sole determinant of whether costs or activities are just and reasonable, as evidenced by the Commission decisions cited in TURN's own testimony. "The Commission has been clear that RSEs are one factor among many that [utilities] may use to select a mitigation strategy."[16]

Consistent with Commission precedent, SDG&E's mitigation selections were influenced by many factors, including cost-effectiveness (whether measured by RSE or other analysis), "funding, labor, resources, technology, planning and construction lead time, compliance requirements, and operational and execution considerations."[17] As evidenced in my Revised Direct Testimony, this Rebuttal Testimony, and the thousands of pages of SDG&E's WMP submissions over four years, SDG&E acted as a prudent manager to achieve the safety, reliability, and wildfire mitigation goals of Assembly Bill 1054 and Senate Bill 901 by implementing cost effective solutions quickly to address wildfire risk.

TURN further misunderstands and mischaracterizes the references to SDG&E's WMP submissions in my Revised Direct Testimony as an attempt to relitigate the question of whether WMP approval equates to a finding of the reasonableness of the associated WMP costs. Had that been the case, there would have been no need for the scores of pages addressing SDG&E's WMP initiatives and their costs in turn. SDG&E could simply have pointed to the WMP approval decisions in support of a reasonableness determination. While the Commission has

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[15] *Id.*, (citing D.17-11-033) (emphasis added).

[16] D.23-11-069 at 41.

[17] Id. at 42 (citing D.18-12-014, *Phase Two Decision Adopting Safety Model Assessment Proceeding (S-Map)* Settlement Agreement with Modifications (December 13, 2018) Attachment A, A-14.

been clear that approval of a WMP should not be "construed as an approval of any WMP-related costs,"[18] the Commission has never extended that to a statement that the contents of a WMP cannot be relied on as *evidence in support of* the reasonableness of WMP activities. My Revised Direct Testimony cites to SDG&E's WMP submissions because they provide a comprehensive picture of the evolution of SDG&E's WMP initiatives from 2019-2022, and provide layers of detail in support of the factors considered by the Commission in a reasonableness determination. They provide a trove of factual information and evidence illustrative of SDG&E's understanding—based on what the company knew at the time—regarding initiative selection, safety and reliability, and cost effectiveness. The Commission should rely on these submissions as evidence when considering the reasonableness of SDG&E's WMP costs.

The Commission should decline to apply the inappropriately limited standard of prudence put forth by TURN. Further, the Commission should disregard TURN's arguments that it may not consider a utility's WMP as evidence of reasonableness.

B. SDG&E Reasonably and Prudently Managed its Wildfire Mitigation Program and Associated Costs

Compounding on the errors discussed above, TURN then proceeds to claim that SDG&E performed no analysis of the cost-effectiveness of its WMP initiatives. This flies in the face of the reams of evidence to the contrary. At the outset, SDG&E has developed numerous means of risk assessment used to weigh the cost effectiveness of mitigations. TURN seems to deliberately ignore that SDG&E's Resource Allocation and Prioritization initiatives include the development of risk models designed to "balance safety with customer affordability impacts."[19] This includes the Wildfire Next Generation System Model (WiNGS):

> Which enables risk assessment and further prioritization of distribution grid hardening based on both an assessment of SDG&E's overall system risk and the risk of the specific circuit segment under analysis. WiNGS' systemwide risk assessment is build upon the RSE methodology adopted in SDG&E's Risk Assessment Mitigation Phase (RAMP) an the model also allows for risk analysis at the portfolio level. By aggregating the all the segment risks and mitigations to arrive at an overall risk reduction result, this dual look approach allows for a

[18] Resolution WSD-005 at 3.

[19] Ex. SDG&E-T2-01R (Woldemariam) at 15.

better understanding of the costs and benefit of the investments as opposed to just a segment level view.[20]

But even accepting TURN's erroneous standard that cost-effectiveness is the sole determinant of reasonableness, SDG&E meets that burden. TURN is simply incorrect that SDG&E's WMPs or my Revised Direct Testimony "contain little if any discussion of the indicia of reasonableness or compliance with the prudent manager standard, such as cost effectiveness, or identification of the explanation of the choices that the utility made that led to the recorded costs at issue here."[21] For instance, SDG&E's 2022 WMP Update presents each initiative or category of work, the risk that work mitigates and in many cases the estimated risk reduction, the initiative selected, the region prioritized, progress on the initiative and planned updates. Many aspects of the prudent manager standard, including the reliability and safety impacts of WMP initiatives, are established in these discussions. Further, SDG&E's 2022 WMP Update contains a detailed assessment of the cost-effectiveness of covered conductor—one of the "two very expensive initiatives" that TURN cites,[22] completed as a joint effort between the large investor-owned utilities (IOUs). This included a comparison of capital costs per circuit mile, and a detailed discussion of SDG&E's costs associated with covered conductor installation.[23]

Even more relevant to TURN's argument, however, is that in SDG&E's 2020, 2021, and 2022 WMP submissions, it included tables listing the Risk Spend Efficiency (RSE) for WMP initiatives for which an RSE could be calculated. The estimated RSE is further broken down by location, including territory-wide, non-HFTD, Tier 2, and Tier 3. As further discussed in SDG&E's 2022 WMP Update, SDG&E's "Risk Quantification Framework is based on the

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[20] *Id.* at 15-16. The WiNGS model process is further depicted in Appendix 3 to this testimony. Further, SDG&E's risk assessment and mitigation approaches continue to evolve as our risk models and data inputs become more informed by weather developments and risk events occurring in the last few years. In September of 2023, the National Oceanic & Atmospheric Administration reported that the combined total damage related to disasters through August of the same year alone to be $57.6 billion. One of the 23 disasters included that year—and one of the costliest—was the Lahaina Fire at $5.5 billion. Of course, since the Lahaina Fire, there have been catastrophic wildfires in Texas and Chile. SDG&E continues to assess risk as informed by these events.

[21] Ex. TURN 01 (Finkelstein) at 9.

[22] *Id.* at 3.

[23] *See* SDG&E's 2022 WMP Update Progress Report (February 11, 2022) at Attachment H: Joint IOU Response to Action Statement-Covered Conductor, entitled 2022 WMP Update Progress Report, Effectiveness of Covered Conductor (PDF page 563).

Settlement Agreement [] that the IOUs and intervenors reached in the S-MAP proceeding and which was adopted by the CPUC as the guiding framework for conducting risk assessments for RAMP."[24] The RSE analysis required for the 2022 WMPs was consistent with Resolution WSD-011 (WSD-011), which defined RSE as "[a]n estimate of the **cost-effectiveness of initiatives**, calculated by dividing the mitigation risk reduction benefit by the mitigation cost estimate based on the full set of risk reduction benefits estimated from the incurred costs."[25]

Thus, analyzing the cost-effectiveness of WMP initiatives was a required key component of WMP submissions. TURN, a seasoned participant in WMP-related proceedings and a stakeholder that commented on WSD-011,[26] was aware of these requirements and the RSE calculations contained within SDG&E's WMP submissions.[27] TURN itself has cited to RSEs as an indica of cost effectiveness by which the Commission should judge the reasonableness of mitigations.[28] TURN, however, conveniently argues against all facts to the contrary, claiming that SDG&E did not assess the cost-effectiveness of initiatives.

To further support the record and ease the burden of review, a summary of RSEs across SDG&E's WMP initiatives, sorted by initiative categories is attached to this Rebuttal Testimony as Appendix 1. SDG&E has included initiatives where no RSE applies—in those instances the initiative itself does not necessarily serve to reduce risk; rather the work is foundational to other WMP efforts where risk is reduced. For instance, SDG&E's risk modeling efforts are foundational to other tools that reduce risk, such as hardening efforts or PSPS decision making.[29]

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[24] *Id.* at 34.

[25] WSD-011, Attachment 2.2 at 12.

[26] *Id.* at 2, n.2.

[27] It was perfectly reasonable for SDG&E to repeatedly refer TURN to SDG&E's WMP submissions in response to data requests requesting information regarding cost-benefit analyses of SDG&E's WMP programs. The tables in SDG&E's WMP submissions contained all of this information and were attached to SDG&E's Track 2 application materials and also available on SDG&E's WMP website. Thus, referring TURN to the publicly available locations of this information was a reasonable response.

[28] D.23-11-069 at 22.

[29] For certain initiatives, namely LiDAR inspections of Vegetation Around Distribution Equipment and HFTD Tier 3 inspections, the RSEs were not included in the 2022 Table 12. SDG&E has included the updated RSE in Appendix 1. Further, SDG&E has updated the actual unit count for detailed transmission inspections (Distribution Underbuild) and Distrubtion System Hardening to reflect minor errors in my Revised Direct Testimony. The actual counts in Appendix 1 are the correct numbers in alignment with SDG&E's WMP reporting.

SDG&E is also including the total units of work in Appendix 1 to again establish the incremental volume of work associated with its WMP. As many of the initiatives have no authorized forecasts, every unit of work is incremental to the amounts authorized in D.19-09-051. The Commission should reject, however, TURN's attempt to require that "[i]ncrementality should also be tied to consideration of whether the above-forecasted spending achieved a commensurate amount of above-forecasted work."[30]

There is no support for such a standard, which is inconsistent with general principles of GRC forecasting and existing Commission precedent. In the recent SCE WMPMA Decision, the Commission found that SCE met its burden of establishing incrementality using a "portfolio approach," examining the "collective total of recorded costs across the wildfire mitigation activities SCE was permitted to record in the applicable memorandum and balancing accounts compared to the total amount authorized for [those] activities."[31] At the holistic level, this approach is similar to that of Mr. Gentes in determining SDG&E's total WMPMA balance. While SDG&E submitted its Track 2 Request prior to D.24-03-008, my direct testimony also provided a comparison of GRC authorized and actual costs on an initiative by initiative basis to provide additional transparency, consistent with the Commission's direction to SCE in future WMPMA applications.[32] In doing so, SDG&E's submission met or exceeded the requirements for similar cost recovery applications known to SDG&E at the time of filing.

Further, at no point has the Commission required a demonstration of incremental units of work, which is inconsistent with SDG&E's TY 2019 GRC forecasts and authorization. Through the GRC, the Commission authorizes a forecast that may be tied to an average of annual costs and wholly unrelated to units of work. This is particularly true for SDG&E's TY 2019 GRC, which did not include any forecasted units of work. Thus, SDG&E cannot point to any authorized units because they do not exist. The Commission should not rely on one Administrative Law Judge (ALJ) ruling[33] to set a new precedent that not only must a utility

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[30] Ex. TURN-01 (Finkelstein) at 14.

[31] D.24-03-008 at 12; Conclusion of Law 5 ("Determining incrementality using a portfolio approach, which considers all 2021 wildfire mitigation costs collectively as compared to all wildfire mitigation costs approved in D.21-08-036 … is consistent with established prospective ratemaking principles.")

[32] Ex. SDG&E-T2-01R (Woldemariam) at 75-76.

[33] Ex. TURN-01 (Finkelstein) at 14.

establish that costs are incremental, but also track incremental units of work. Further, to do so in this case would be unduly prejudicial to SDG&E, as it would impose a standard unknown to SDG&E at the time the work was performed, inconsistent with the prudent manager standard.

As TURN relies on inaccurate statements of Commission precedent and an incomplete understanding of the evidence submitted to support the reasonableness of SDG&E's 2019-2022 WMP costs, the Commission should disregard TURN's recommendations related to resubmitting its Track 2 request. This unduly punitive effort to further delay recovery of these costs is unwarranted.

III. SDG&E HAS ROBUST PRACTICES IN PLACE TO ENSURE PROPER COST TRACKING OF WILDFIRE MITIGATION COSTS

A. SDG&E's Invoicing Practices Allow Sufficient Transparency Into Projects

As further addressed in the testimony of Mr. Gentes, SDG&E's invoicing protocols ensure proper booking of the costs underlying its request for recovery.[34] Invoices are a component of a supply management process that includes contract negotiations to specify pricing, terms, and invoicing processes.[35] SDG&E subject matter experts, who have the knowledge of work being performed by a particular vendor, are responsible for reviewing the accuracy of the vendor invoices before they are approved for payment.[36] Thus, a particular invoice may not contain or repeat every statement within a contract or applicable agreement; it does not need to because the SDG&E subject matter expert tasked with reviewing and approving invoice payments and appropriately recording them has the knowledge of the underlying project and business terms to address business accountability.

SDG&E has already provided substantial evidence of the work performed between June 2019 and December 2022 to implement its WMP and support this Track 2 request. Cal Advocates' testimony demonstrates continued misunderstandings of SDG&E's wildfire mitigation work as well as the regulatory requirements associated with this cost recovery proceeding. SDG&E has the burden of proof to demonstrate by a preponderance that recovery of costs recorded to its WMPMAs are just and reasonable. Contrary to Cal Advocates'

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[34] Prepared Rebuttal Testimony of R. Craig Gentes on Behalf of SDG&E (July 25, 2024) at 2-3.

[35] *Id.*

[36] *Id.*

representations,[37] there is no requirement that SDG&E provide all invoices, or every piece of supporting documentation for three years and billions of dollars of expenditures. While there is no requirement that SDG&E provide workpapers in support of its request, SDG&E provided many files of workpapers and hundreds of pages of testimony and exhibits that meet its burden of proof.

Moreover, in response to data requests, SDG&E provided Cal Advocates a complete list of all expenditures—thousands of line items—supporting its request, sorted by WMP category and budget code/internal order. In response, Cal Advocates sought supporting documentation for 90-93% of the total O&M and capital direct costs in SDG&E's request. Because this sampling population consisted of over 500,000 line items, the volume and relevance of such a request would have been unreasonable for both production and review.[38] Despite repeated requests from SDG&E that Cal Advocates limit its request to a reasonable sample, they refused to do so.[39] Eventually SDG&E produced a sample of a size similar to that received by Ernst and Young in its report in hopes of facilitating Cal Advocates' review.[40]

Cal Advocates concedes that SDG&E was able to prove that it "spent money on activities for which SDG&E claims rate recovery in its Track 2 proceeding."[41] Cal Advocates points to four—of hundreds—of invoices to support its allegation that despite this documentation, it was unable to "fully verify" the reasonableness of SDG&E's costs.[42] But each of these costs was recorded consistent with SDG&E's invoice approval and accounting processes.[43] These can be described in turn as follows:

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[37] Cal Advocates' Report on SDG&E's Submission and Supplemental Testimony Supporting its Track 2 Request to Authorize Recovery of Incremental Wildfire Mitigation Costs Incurred from 2019-2022, Indirect Costs (Leah Rassam) (June 14, 2024) (Ex. CA-04 (Rassam)) at 4.

[38] *See, e.g.* SDG&E's Response to Cal Advocates Data Request PAO-SDGE-301-CQU (January 19, 2024), Question 1.

[39] SDG&E Response to PAO-SDGE-313-CQU (March 22, 2024).

[40] Mr. Gentes's testimony provides additional detail.

[41] Cal Advocates' Report on SDG&E's Submission and Supplemental Testimony Supporting its Track 2 Request to Authorize Recovery of Incremental Wildfire Mitigation Costs Incurred from 2019-2022, Direct Costs, Part 1 of 2 (Chauncey Quam) (June 14, 2024) (Exhibit (Ex.) CA-02 (Quam)) at 6.

[42] *Id.*

[43] The invoices are provided at Appendix 4 [CONFIDENTIAL] in the Confidential submission of this testimony.

UC San Diego Invoice

The Center for Western Weather and Water Extremes (CW3E) within the Scripps Institution of Oceanography, is a recognized leader in atmospheric research and real-time weather forecasting. CW3E runs a 200-member ensemble weather model at 9 km horizontal grid spacing covering the entire SDG&E service territory to include non-HFTD and HFTD daily during peak fire season from October to April. This weather model creates the Santa Ana (SA) index, which is an operational product of paramount importance used by SDG&E to determine the strength and probability of Santa Ana wind events. During fire season, the index is posted here and an example is provided below: cw3e.ucsd.edu/sdge/

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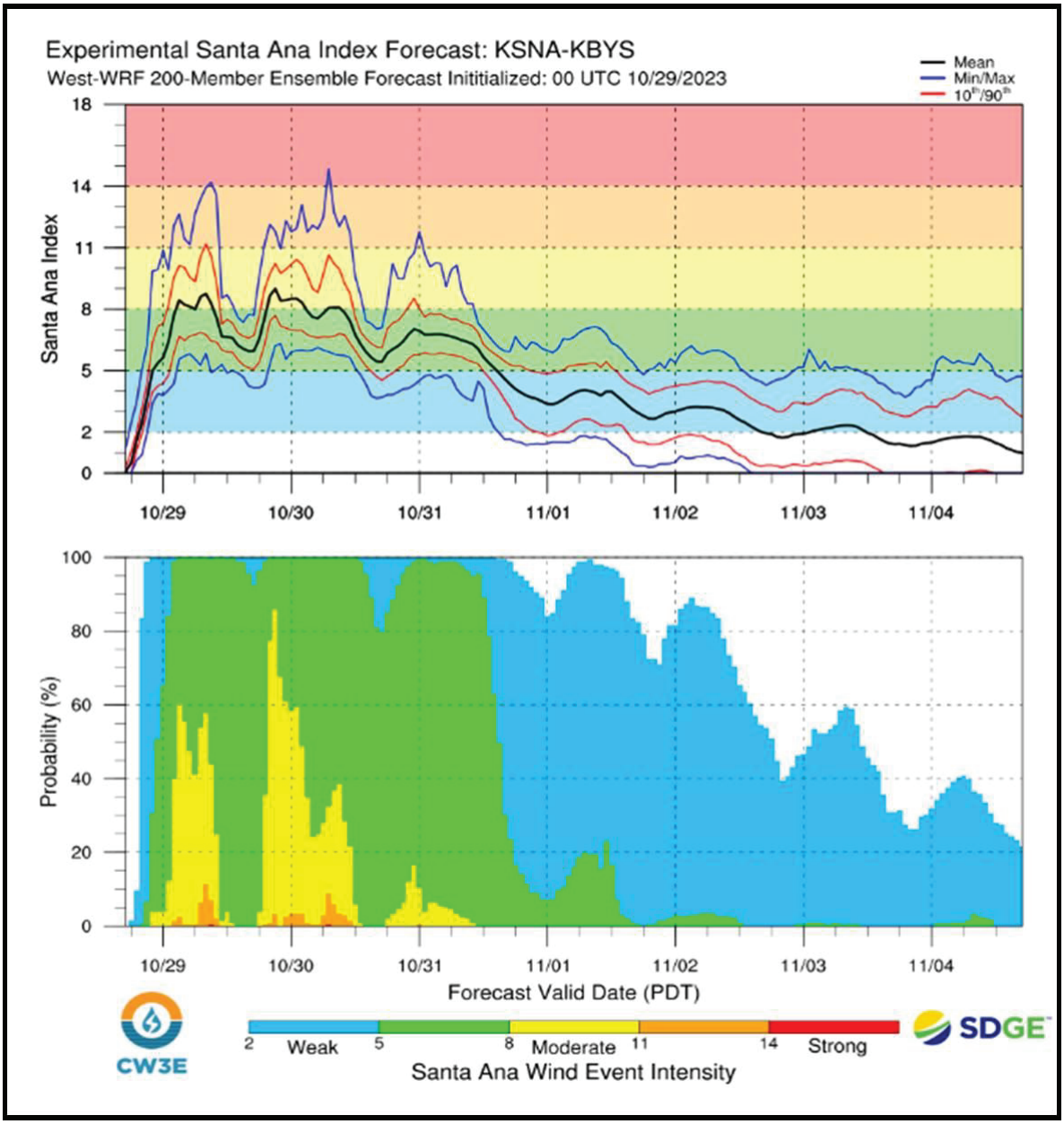
Figure JW-1: Santa Ana Index



The Santa Ana index has proven itself operationally viable, fostering a renewed partnership between SDG&E and CW3E with the intent of refining the current product and exploring new ideas for characterizing and predicting fire weather conditions.

The Santa Ana Index predicts dangerous fire weather conditions 7 days in advance. Figure 1 Top Panel shows the forecast time series of the Santa Ana index strength with the mean (black line), min / max (blue) and 10th / 90th percentiles (red). The Lower Panel shows the

forecast probability range (e.g., weak, moderate, strong) based on the West-Weather Research and Forecasting (WRF) ensemble distribution.

Figure JW-2: Santa Ana Forecast Probability Range

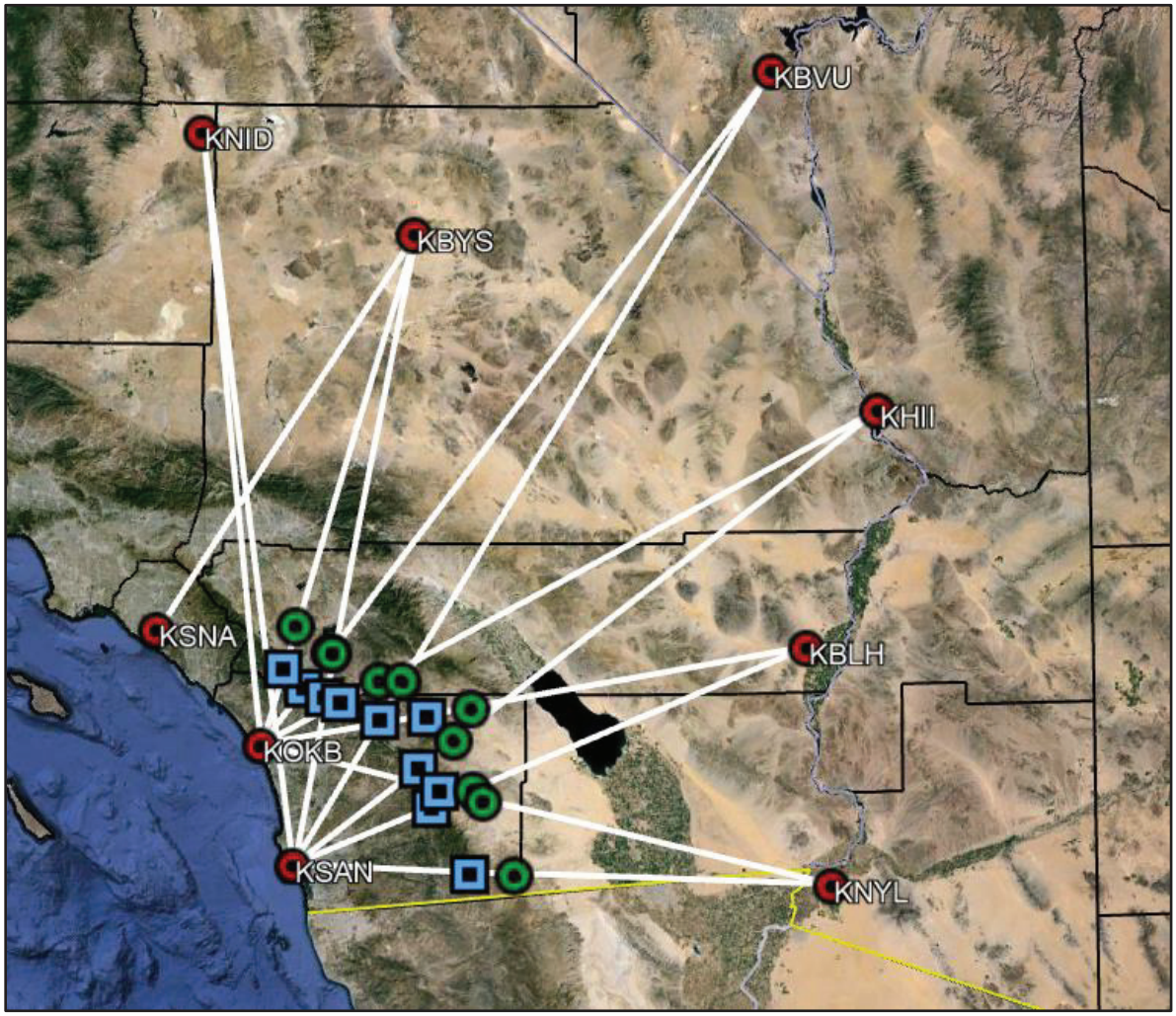


Figure 2 shows that the Santa Ana Index is calculated along multiple line segments in Southern California and consists of 3 meteorological inputs: Mean Sea Level Pressure gradient in hPa/100km (red dots), wind speed (825 hPa approx. 5,000ft) along segment (blue dot), and cold air advection 825 hPa (blue - green dots).

These calculation values are all in the HFTD and as such 100% WMP related. Further, the weather model index was already functioning and placed into service in December 2021. As the invoice in question covered trailing costs associated with the index, they were capitalized immediately (i.e., as of payment at the end of 2022), because it provided immediate benefits and

expanded the usefulness of the asset, which was already deemed used and useful for its intended purpose. The benefits associated with an asset and all related costs that can be capitalized continue forward over the asset's anticipated life.

The costs associated with the weather forecasting were recorded to a common plant account. The common plant allocation factors are developed annually based on labor statistics taken from the annual FERC Form 1 filing. In 2022, the distribution and transmission splits were approximately 85.2% and 14.8%, respectively. As such, of the invoice total, 85.2% of the costs were allocated to distribution and 14.8% was allocated to transmission.

Lockheed Martin/Sikorsky

The invoice was for the initial payment for the purchase of a Sikorsky S70M model helicopter that was converted into a "Firehawk" aerial firefighting asset and "heavy lift" construction asset for fire-hardening purposes (i.e., installing heavy steel poles in back country of our service territory where trucks cannot access) for SDG&E.

The costs associated with the helicopter were recorded to a common plant account. The common plant allocation factors are developed annually based on labor statistics taken from the annual FERC Form 1 filing. In 2020, the distribution and transmission splits were approximately 86.0% and 14.0%, respectively. As such, of the invoice total, 86% of the costs were allocated to distribution and14% was allocated to transmission.

Electrical Consultants

The services provided include a 'Constructability Review,' a critical quality control measure implemented at the 90% design milestone by the Quality Assurance & Quality Control (QA/QC) team of SDG&E Portfolio & Project Management (PPM). This review process is comprehensive and is conducted by a Qualified Electrical Worker (QEW), who brings specialized expertise to this type of work. The QEW's role is to validate the design of the job package, ensuring it adheres to relevant codes, contracts, standards, and specifications. Furthermore, the reviewer, with insight from their experience as a Lineman, offers a constructability perspective. This perspective is crucial in guaranteeing that project design is optimal and reflective of current industry construction practices. This ensures not only the feasibility of the project but also its efficiency and effectiveness. The review for this project was completed on or around May 27, 2021.

The scope of work for this project was on a circuit (C1458) that is 100% within the HFTD and 100% of the invoice total was allocated to distribution as the costs supported SDG&E's strategic undergrounding program.

SAC Wireless

This invoice is associated with SDG&E's Distributions Reliability Communications Initiative (SDG&E's Private LTE Network). The services provided include:

- Project Management services to perform work and manage the individual projects that are either being constructed during the month of December 2021 and/or the design/engineering process for projects identified for construction in 2022.
- Engineering and design services for all sites planned in 2022 (typically engineering and design services are conducted 1-2 years prior to construction and install to go through the complete process and QA/QC).
- Construction of sites that were installed in December 2021. There is some time attributed to final close out of construction of one other site that was completed at the end of November on this as well, but the close-out work was done in December.
- Job Walks to properly prepare for construction and to perform QA/QC on construction activities when finalized.

The invoice covers the time frame of work done in December except drive tests which covers the November and December 2021 time frame.

As discussed further below, the Distribution Communications Reliability Initiative (DCRI) is focused on providing reliable communication within the HFTD area to enable various devices the ability to communicate effectively signaling potential issues that would help prevent wildfires. In order to properly provide communication in this area, a pathway to this area needs to be built and configured. All work billed focuses and provides communication to the HFTD areas.

The costs associated with DCRI were recorded to a common plant account. As noted, the common plant allocation factors are developed annually based on labor statistics taken from the annual FERC Form 1 filing. In 2022, the distribution and transmission splits were approximately 85.2% and 14.8%, respectively. As such, of the invoice total, 85.2% of the costs were allocated to distribution and 14.8% was allocated to transmission.

IV. CAL ADVOCATES' CALCULATIONS OF SDG&E'S AUTHORIZED COSTS ARE INACCURATE AND INCONSISTENT WITH SDG&E'S TY 2019 GRC

A. Cal Advocates Inaccurately Represents SDG&E's Authorized Costs

Cal Advocates bases its testimony on an unexplained and seemingly random analysis of SDG&E's Test Year 2019 GRC authorized dollars, in a manner inconsistent with SDG&E's Test Year 2019 General Rate Case decision, supporting workpapers, the WMP Categories, or subsequent accountability reporting. SDG&E requested additional data and explanations to support Cal Advocates' calculation of SDG&E's prior authorized amounts, and received two things: 1) a spreadsheet containing Excel versions of Ex. CA-05 (Benitez) at Tables 5-4 and 5-5, with no additional calculations or information describing how Cal Advocates derived those numbers, and 2) a printout from a website containing the definition of the word "incremental."[44] Cal Advocates did not elaborate on their methodology nor did they submit a spreadsheet with working formulas or supporting documentation with sources for the Capital and O&M amounts presented as authorized costs for each work category. Additionally, nowhere else in the testimony does Cal Advocates explain or provide support for how they calculated a yearly authorized amount for the various activity categories, yet Ex. CA-05 (Benitez) presents authorized capital and O&M in a vastly different fashion than my Revised Direct Testimony.

After substantial efforts to understand Cal Advocates proffered authorized WMP dollars, it appears that Cal Advocates inadvertently applied authorized amounts to the wrong WMP categories. The workpapers provided by Cal Advocates are in alignment with SDG&E's total authorized Capital of $600.740 million and O&M of $150.322 million.[45] However, Cal Advocates' breakdown of authorized dollars by WMP initiative category is inconsistent with my Revised Direct Testimony and does not reflect SDG&E's TY 2019 GRC Decision. By either intentionally or inadvertently reallocating authorized amounts to the incorrect initiative

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[44] Public Advocates Office Data Response 01 (July 9, 2024) at Question 1 and supporting workpapers. SDG&E notes that Witness Benitez's qualifications note a college major in Environmental Studies and prior experience as an environmental researcher and consultant on several environmental issues. Witness Benitez does not describe any experience, however, in accounting, regulatory accounting, or economics, and has not participated in any IOU GRC related proceeding that would address calculation of authorized dollars.

[45] *See* Ex. SDGE-T2-01R (Woldemariam) at 7-8 (Table JW-1); Cal Advocates Response to SDG&E DR (showing "total authorized" Capital as $600.739 million and O&M as $150.322 million).

categories, it appears there is a dispute regarding the incrementality of direct costs, when in fact no such dispute exists.

Cal Advocates' testimony at CA-05 is based on a completely flawed premise and inaccurate representations of SDG&E's authorized amounts; as such, it does not reflect the reality that SDG&E is significantly overspent across all wildfire mitigation capital activities, and only minorly underspent in two O&M activities, as reflected in Table JW-1 of my Direct Testimony. Witness Benitez's testimony convolutes SDG&E's authorized amounts across every category. These errors are highlighted by deriving the four year totals for the WMP categories outlined in Cal Advocates workpapers, included in Appendix 2 of my testimony, and described as follows:

- Cal Advocates represents that SDG&E had a total authorized of $12.987 million in capital dollars for "Stakeholder Cooperation and Community Engagement."[46] This WMP initiative category covers PSPS communications and public safety partner engagement. Because most of these activities arose from the PSPS Order Instituting Rulemaking (OIR) and WMP requirements, no capital dollars were forecast or authorized in SDG&E's GRC and authorized O&M was $1.096 million. The $12.987 million used by Cal Advocates to represent that SDG&E is overcollected in this category appears to in fact be the authorized capital for the "Situational Awareness and Forecasting" category. The authorized capital for this category, which covers initiatives such as SDG&E's weather station network, is a) unrelated to stakeholder cooperation and community engagement, and more importantly b) already reflected in Table JW-1 of my Revised Direct Testimony and offset against SDG&E's direct costs to demonstrate incremental direct costs.
- Similarly, Cal Advocates represents that SDG&E had total authorized O&M costs associated with "Stakeholder Cooperation and Community Engagement" of $7.732 million.[47] As reflected in Table JW-1, the actual authorized for this category was $1.096 million. The $7.732 million figure correlates to SDG&E's authorized for the "Emergency

[46] Cal Advocates' Report on SDG&E's Submission and Supplemental Testimony Supporting its Track 2 Request to Authorize Recovery of Incremental Wildfire Mitigation Costs Incurred from 2019-2022, Incremental Costs (Brandon Benitez) (June 14, 2024) (Ex. CA-05 (Benitez)) at 4.

[47] *Id.* at 6.

Planning and Preparedness" category, also reflected in my Revised Direct Testimony. Thus, any alleged overcollection associated with Stakeholder Cooperation and Community Engagement is similarly wrong.

- Cal Advocates represents that SDG&E is undercollected in the O&M category for "Data Governance," based upon a purported authorized of $9.587 million. SDG&E's authorized for this category, in reality, was $2.013 million. The $9.587 million figure is instead associated with O&M costs related to the "Situational Awareness and Forecasting" initiative category, and is reflected in Table JW-1 as an offset against overall costs. Thus, any alleged overcollection associated with Data Governance is incorrect.
- Cal Advocates represents that SDG&E is undercollected in the O&M associated with "Resource Allocation Methodology," based upon an alleged authorized of $36.176 million."[48] SDG&E's actual authorized for this category was $5.234 million. The $36.176 million figure is aligned with authorized O&M for the "Grid Operations and Protocols" initiative category, and is reflected as such Table JW-1 of my Revised Direct Testimony. Thus, any alleged overcollection associated with Resource Allocation Methodology is incorrect.
- Finally, Cal Advocates represents that SDG&E is undercollected in the O&M category associated with "Risk Assessment and Mapping," based on an alleged authorized of $2.013 million. Activities in this initiative category—which covers work involved leveraging several models such as weather models, fire models, vegetation models, asset models and customer models—were not forecast in SDG&E's TY 2019 GRC. These models provide the inputs needed to do a more granular analysis of the probability of ignitions and the wildfire consequences using SDG&E's main wildfire risk model, WiNGS, developed in 2020. Thus, all capital and O&M costs associated with these initiatives are incremental. Cal Advocates appears to erroneously have transposed the $2.013 authorized for the "Data Governance" O&M into this category.

There is no dispute regarding SDG&E's total authorized for WMP activities, nor does Cal Advocates ever dispute SDG&E's calculation of the authorized amounts. Rather, Witness

[48] *Id.* at 5.

Benitez's testimony seems to be entirely based on a series of spreadsheet errors and transposed figures that inadvertently recategorized the authorized amounts into the incorrect initiative categories. As described in my Revised Direct Testimony, the use of WMP initiative categories was primarily organizational—they are unrelated to SDG&E's process for cost tracking and merely aid in the process of this reasonableness review by aligning costs with SDG&E's WMP submissions. There was no reason for Cal Advocates to analyze incrementality at the category level, but regardless, the obvious errors in Witness Benitez's comparative analysis should lead the Commission to disregard it entirely.

There is, in reality, no dispute between SDG&E and Cal Advocates on authorized direct costs, or the method of their calculation. The bottom line demonstrates that SDG&E and Cal Advocates are in general alignment regarding the incrementality of SDG&E's overall direct wildfire mitigation capital and O&M costs.[49] Further, SDG&E properly accounted for any overcollections in O&M or capital by reducing the total differential amount, consistent with the testimony of Mr. Gentes. The direct O&M and capital costs in my revised direct testimony at Table JW-1, SDG&E's overall undercollection across its WMP initiative categories, and the incrementality of SDG&E's direct costs is thus uncontested.

V. SDG&E'S LABOR COSTS ARE INCREMENTAL TO THOSE AUTHORIZED IN THE 2019 GRC

A. Straight-Time Labor

Cal Advocates misrepresents SDG&E's responses to data requests related to straight-time labor in attempting to argue that SDG&E did not hire additional staff to implement its WMP. Cal Advocates tries to claim that SDG&E objected to data requests and provided no information on labor-related calculations. To the contrary, SDG&E provided Cal Advocates with all "capital and O&M labor cost detail by WMP work categories."[50] As Cal Advocates cites to a question that sought information related to the "total cost for labor included in each [WMP] category," it is perfectly reasonable that SDG&E did not provide an incrementality analysis in response to the question, since that is not what Cal Advocates requested. SDG&E's analyses of incremental

[49] Cal Advocates' recommended adjustments to the direct costs are addressed elsewhere in this testimony.

[50] SDG&E Response to PAO-CQU-301 Q3. To the extent Cal Advocates' represents that SDG&E objected to this question without response, such a contention is clearly belied by SDG&E's answer.

labor, including an analysis of FTEs over the 2019-2022 period, are discussed in the Direct and Rebuttal Testimonies of Mr. Gentes.

Further, SDG&E's responses to Cal Advocates demonstrate a significant increase in new hires. Within SDG&E's Wildfire & Climate Science Division, SDG&E hired an additional 35 full time internal employees between 2019 and 2022. The table below represents the labor and non-labor costs associated with these new employees:[51]

Table JW-1: SDG&E Wildfire & Science Division Costs

	2019	2020	2021	2022	Total
Labor	60,860.58	1,467,153.14	1,990,537.25	2,765,437.62	6,283,988.59
Non-Labor	216,221.19	689,447.03	3,664,429.91	1,482,894.43	6,052,992.56
Total	**277,081.77**	**2,156,600.17**	**5,654,967.16**	**4,248,332.05**	**12,336,981.15**

It is unclear how, in the face of this information, Cal Advocates makes the representation that "SDG&E failed to provide any data documenting new hires while using existing employees whose positions were funded by the 2019 GRC."[52] Further, Cal Advocates cites no support for the blanket assertion that "SDG&E's reliance on supplemental contractors and overtime, and its redeployment of existing employees, demonstrate that its straight-time labor is not incremental."[53] These assertions lack any basis in fact, in SDG&E's data request responses or materials in support. To the contrary, even the data request cited by Cal Advocates provides that SDG&E's answer was limited to employees "*outside* of the Wildfire & Climate Science Division."[54]

The increased responsibilities of wildfire safety, climate science, PSPS communications and awareness, and emergency response all necessitated additional labor unforeseen by SDG&E in its 2019 GRC. In response to the increased requirements and increased wildfire mitigation activities, SDG&E created new departments and FTEs added to some existing departments. For example, SDG&E created a new Wildfire Mitigation Department in mid-2019. The department had a total of 17 FTEs by the end of 2022. The Wildfire Mitigation Department is made up of a

[51] SDG&E Response to PAO-SDGE-304-LRS (February 5, 2024).

[52] Ex. CA-02 (Quam) at 8.

[53] *Id.*

[54] *Id.* at 7 (emphasis added).

Risk Analytics group with data scientists that develop risk models and conduct risk assessment, a Strategy group that develops new advancements, long-term mitigation strategies, and includes working on collaboration with utilities and stakeholders, and a Compliance group with a focus on the annual Wildfire Mitigation plans, data requests, Safety Culture Assessments, compliance reviews with OEIS and quarterly reporting. These positions all support operations and regulatory requirements that did not exist prior to SB 901 and ongoing development of the WMPs at the Office of Energy Infrastructure Safety.

Although not a new department, the Fire Science and Climate Adaptation department has increased by eight FTEs since mid-2019. These include a meteorology program manager and an operational meteorologist following the creation of SDG&E's new Wildfire & Climate Science Division, a climate adaptation advisor, a wildfire resilience operations project advisor, and two FTEs added to the Fire Coordination teams to assist with training and CalFire coordination during fire seasons of increasing length and fire frequency. Finally, an FTE was brought in from academia as a numerical weather prediction scientist in the meteorology business unit and to support situational awareness.

Largely in response to regulatory requirements such as Energy Safety's WMP guidelines and the Commissions' De-energization Rulemaking Proceeding, SDG&E Emergency Management added 10 FTEs since 2019, ranging in positions from manager, program manager, administrative assistant and specialist. These include:

- The Training & Exercise Manager role which is required to lead the development, implementation and management of comprehensive training and exercise strategies to effectively test emergency plans to achieve efficient and effective restoration of operations during emergencies, while ensuring compliance with all applicable regulatory and policy requirements.
- The Training & Exercise Program Manager which ensures the highest level of company preparedness as it relates to operational and financial response and recovery and leads company-wide emergency preparedness trainings.
- An administrative assistant who was hired to coordinate calendars and logistics.
- An Emergency Planning Program Manager role which was created to provide leadership across the enterprise to ensure that each organization is highly prepared to execute its response and recovery responsibilities during and after an emergency.

- The Emergency & Continuous Improvement Program Manager role which conducts after-action reviews after an emergency incident, Emergency Operations Center (EOC) activation, or training/exercise to assess opportunities for process improvement and communicate lessons learned.
- The Emergency Management & Field Incident Command System (ICS) Program Manager role which develops and delivers the field ICS training curriculum and supports the company's First Responder Outreach program.
- Four Aviation Flight Ops Base Specialists who were hired to perform flight monitoring of daily flight operations for the Aviation Services Department, maintaining oversight of all helicopters, UAS, and personnel working with aviation assets in the field and proactively addressing operational concerns.

In addition to the Wildfire & Climate Science Division, SDG&E also added a newly created Access and Functional Needs (AFN) department, consisting of ~5 FTEs, in the Customer Services Division. These positions were created to comply with incremental work within the De-energization OIR[55] and WMP to support individuals with AFN before, during, and after PSPS events. Since adding this department, SDG&E has built a robust PSPS support model and these positions are responsible for maintaining, strengthening, and solidifying key partnerships with community stakeholders to ensure resources and services are in place for individuals with AFN. Additionally, the AFN team plays a critical role in providing emergency preparedness education to the AFN population and customers in the HFTD through a variety of outreach tactics including events, social media, workshops, and trainings. This includes leveraging community-based organization partnerships to amplify PSPS notifications, share available resources and reach SDG&E's most vulnerable populations. During an EOC activation, the AFN team staffs the AFN Liaison position, which is designed to work with key support partners and ensure all individuals who are dependent on electric for their health, safety, and independence, are provided resources to sustain their needs for the duration of a PSPS.

[55] Rulemaking 18-12-005, Order Instituting Rulemaking to Examine Electric Utility De-Energization of Power Lines in Dangerous Conditions (December 13, 2018); *see* D.21-06-034, Conclusions of Law 49 and 50 at 169.

Taken in total, these new positions alone total over 40 new FTEs hired to support SDG&E's wildfire mitigation efforts. As discussed above and in the testimony of Mr. Gentes, SDG&E has repeatedly established that it hired several additional personnel unanticipated in its 2019 GRC, to fill positions and meet responsibilities that did not exist prior to SB 901 and AB 1054. For these reasons, Cal Advocates' contentions to the contrary should be disregarded.

B. Employee Benefits Are Incremental

Cal Advocates recommends that SDG&E's request for incremental capital and O&M costs associated with employee benefits be denied, claiming that SDG&E "did not hire new employees or create new positions to perform the work recorded in the WMPMA."[56] This argument and its faulty logic are correlated to the direct labor costs addressed above. SDG&E hired over 40 new employees and recorded additional FTEs in support of its Wildfire Mitigation Program, as evidenced by SDG&E's data request responses and described herein. Both the underlying labor costs and the related benefits costs are incremental and should be approved.

C. Market Research Costs

Cal Advocates recommends that the Commission deny SDG&E's request for incremental market research costs in support of PSPS stakeholder cooperation and communication efforts.[57] While Cal Advocates claims that SDG&E "failed to verify that its market research costs were reasonable, prudent, and appropriate for rate recovery,"[58] it fails to cite to any data requests or evidence that these efforts were not a component of SDG&E's WMP activities. To the contrary, the market research costs were performed in support of SDG&E's Stakeholder Cooperation work category in support of new PSPS awareness and communications activities.

SDG&E's overall activities in this category are driven by the requirements from Energy Safety's WMP guidelines and Commission directives and orders implemented through the De-Energization proceedings. Both regulators hold utilities accountable for PSPS communications, outreach, and ongoing awareness. As an example, the Commission conducts monthly Fire Season meetings over the course of the highest risk wildfire season, and designed for ongoing

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[56] Ex. CA-02 (Quam) at 9.

[57] *Id.* at 10-11.

[58] *Id.* at 10.

updates on utility activities to advance their PSPS notifications, outreach, collaboration with community safety partners, and addressing critical infrastructure resources, including the Communication Infrastructure Providers on the call to understand their needs during PSPS.

To support PSPS communications and awareness, SDG&E performed market research to better understand customer needs and tailor PSPS alerts. These activities were in support of SDG&E's WMP and wholly unforeseen in SDG&E's TY 2019 GRC, as the PSPS requirements evolved after SDG&E's GRC Decision. An example of this are the various surveys we conduct committed to educating our customers year-round about wildfire safety, preparedness, and Public Safety Power Shutoffs. With continuous improvement at the forefront of everything we do, SDG&E's communications strategy continues to evolve to deliver information important to customer safety. SDG&E's tactics remain far-reaching, tailored and accessible for all intended audiences, including ASL. SDG&E leverages more than 20 diverse communications platforms to reach the public. Some of them include hyperlocal social media messaging, in-community signage and mobile marquees, and a dedicated Spanish media team, to name a few.

When it comes to customer research, every year SDG&E solicits feedback from customers about Wildfire and PSPS communications. This customer research is usually in the form of online or telephone surveys. There are three primary surveys that the company conducts in the Wildfire and PSPS space.

- **Wildfire/PSPS Advertising Survey (online):** This survey is conducted territory wide and solicits feedback about retention and comprehension of the SDG&E Wildfire/PSPS marketing campaign. This survey is not CPUC required and offered in English and Spanish.

- **PSPS Pre-season Survey (online/phone):** This survey is conducted territory wide at the start of high-wildfire and PSPS season. The survey solicits feedback about PSPS communications, customer preparedness and resiliency, and awareness of AFN resources and services during a PSPS. This survey is CPUC required, available in the 22 prevalent languages spoken in the region, and there is alignment with the other IOUs with survey content.

- **PSPS Post-season Survey (online/phone)**: This survey is conducted in the HFTD with customers who were notified or notified and had their power cut during a PSPS. The survey solicits feedback about PSPS communications, messaging and awareness/use of AFN resources during a PSPS. If there is no PSPS during a particular year, the company uses the Pre-season Survey to solicit feedback from customers for post-season reporting.

This survey is CPUC required, available in the 22 prevalent languages spoken in the region, and there is alignment with the other IOUs with survey content.

Cal Advocates' assumption that these research activities were previously authorized lacks any support or citations to existing decisions or testimony. Further, Cal Advocates does not dispute the reasonableness of the activities underlying the costs, only that they were not incremental. As these costs were both reasonable and incremental, the Commission should authorize their recovery.

VI. SDG&E'S DIRECT COSTS ARE REASONABLE AND SHOULD BE AUTHORIZED FOR RECOVERY

A. Costs outside the HFTD

In 2021, Daniel Berlant, former Assistant Deputy Director of CAL FIRE stated, "nearly every acre of California has the potential to burn these days."[59] SDG&E must be prepared to mitigate wildfire risk to the best of our ability throughout the service territory. Vegetative fuel conditions and weather conditions drive the risk of rapid wildfire growth and hazard to adjacent communities. Santa Ana easterly wind conditions are often associated with extreme fire risk; however, westerly winds can be equally impactful and can lead to large and damaging wildfires. For instance, the Coastal Fire in southern Orange County, was located just one mile from SDG&E's service territory. Similarly, the recent Del Mar Fire only a few weeks ago—which rapidly burned a coastal area in the WUI—underscores the need for mitigation measures that reasonably align with the risks presented.

The HFTD, developed by the CPUC, is a map of the highest wildfire risk areas in California.[60] Wildfires do not adhere to arbitrary boundaries, however, nor was SDG&E's infrastructure specifically designed to delineate between HFTD and non-HFTD. While the boundaries of Tiers 2 and 3 have been roughly mapped, conditions supporting wildfire growth into the HFTD and system structures can remain high along boundary areas. Strategic

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[59] PBS News Hour, 'Nearly every acre' in California has potential to burn, state fire official warns (August 19, 2021) available at https://www.pbs.org/newshour/show/nearly-every-acre-in-california-has-potential-to-burn-state-fire-official-warns.

[60] CPUC High Fire Threat District, available at https://www.arcgis.com/home/item.html?id=986b9c5900b1424dac71b2f91b9b7475.

investments near the HFTD are crucial for achieving the desired risk reduction within the district. Further, some work may be necessary outside of the HFTD to address PSPS risk or align WMP work with existing system structure. Therefore, in certain instances SDG&E may consider wildfire mitigation work in areas outside of Tiers 2 and 3 of the HFTD.

Cal Advocates incorrectly—and without support—states that "[t]here is little risk of a catastrophic wildfire in a non-HFTD location."[61] The California Fire Office of State Fire Marshal (CAL FIRE) acknowledges both high and very high fire severity zones,[62] which don't perfectly align with the HFTD boundary. Moreover, local cities and fire districts also recognize elevated wildfire risk within boundary areas outside of the HFTD. While the risk may not merit an expansion of the HFTD into boundary areas, utilities need to address the significant risks in these areas. One example in SDG&E's service territory is the community of Rancho Santa Fe, an area in proximity to (but not within) the HFTD, where dense high-risk vegetation conditions, a dry environment, and other environmental factors lead to increased wildfire and PSPS risk.

CAL FIRE is the state authority on areas designated as Wildfire Urban Interface (WUI).[63] WUI areas occur in the service territory both within and outside of the HFTD and include many of the coastal canyons within San Diego County. In part because there are areas outside the HFTD that are identified as WUI, certain mitigations, such as construction and maintenance fire prevention requirements, are applied to the entire service territory and focus on all at-risk activities being performed adjacent to wildland fuels. Additionally, asset inspection programs are enhanced in many of the WUI areas to identify potential issues not visible by traditional ground inspections, where terrain or other constraints may limit the ability to perform a detailed ground inspection or where high-resolution imagery captured by drones would provide better visibility of a potential fire hazard.

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[61] Cal Advocates' Report on SDG&E's Submission and Supplemental Testimony Supporting its Track 2 Request to Authorize Recovery of Incremental Wildfire Mitigation Costs Incurred from 2019-2022, Direct Costs, Part 2 of 2 (Monica Weaver) (June 14, 2024) (Ex. CA-03 (Weaver)) at 8.

[62] Cal Fire, Fire Hazard Severity Zones available at https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones.

[63] U.S. Fire Administration, What is the WUI?, available at https://www.usfa.fema.gov/wui/what-is-the-wui.html.

Cal Advocates' primary objection to SDG&E's requests related to direct Grid Hardening costs lies in work performed outside of the HFTD.[64] Contrary to Cal Advocates' statements regarding work performed outside of the HFTD, SDG&E's risk-informed approach to grid design and system hardening prioritized wildfire mitigation in the highest risk areas, but also reasonably performed some work outside of the HFTD in boundary areas. It is entirely prudent to conduct wildfire mitigation work outside the HFTD within a reasonable scope. This is not just due to the wildfire risk not following HFTD boundaries but also for practical system reasons. For example, covered conductor work ends at a reasonable point along the powerlines where there is a good location for stopping the pull of a wire or where a switch can be placed. This could be outside the HFTD—necessitating some hardening work outside of the HFTD, even though the majority of that circuit segment could be within the HFTD. Another example is replacing electric assets like SCADA capacitors, lightning arrestors, fuses, etc. within a reasonable proximity of the HFTD boundary. This is because an electric asset just outside the HFTD boundary may have just as much of a catastrophic wildfire impact as an electric asset within the HFTD.

Another aspect of the wildfire mitigation work is implementing mitigations that reduce the number of customers impacted by PSPS events. PSPS impacts do not directly align with wildfire risk, so mitigations aimed at reducing PSPS impacts may be placed outside of the HFTD for maximum efficiency and risk reduction. For some initiatives, hardening more of a circuit segment can reduce the amount of customers who need to have their power shutoff during PSPS conditions. This also may mean WMP-related work outside of the HFTD boundary. For example, extending underground work slightly outside the HFTD to reduce the number of customers affected makes a lot of sense. This is because if the upstream section of the underground segment is still overhead, the company may need to shutoff power, which would impact not only the customers that are fed from the overhead section but also the underground section.

SDG&E began refining its risk models early on and prides itself on targeting wildfire mitigation work in the highest risk areas. For most of SDG&E's WMP initiatives, the amount of grid hardening or electric infrastructure work outside the HFTD was kept to a minimum and performed in proximity to the HFTD. These projects were reasonable and prudent. The

[64] Ex. CA-03 (Weaver) at 6-8.

Commission should reject Cal Advocates' claim that any and all WMP work performed outside the HFTD should be disallowed. Such a blanket contention does not allow for reasonable adjustments and work to accommodate the risks posed in those areas, as well as the proximity of the work to the HFTD.

Any work performed outside the HFTD is reasonably justified and tailored to the wildfire risk posed by that area, system needs, or PSPS reduction. For the reasons discussed herein, the Commission should authorize work performed outside of the HFTD in conjunction with SDG&E's WMP.

1. Distribution Communications Reliability Improvements

Cal Advocates a $55.167 million reduction for capital associated with SDG&E's DCRI initiative. Cal Advocates does not dispute the reasonableness of SDG&E's DCRI work, rather the recommended reductions are solely correlated with installations of 16 base stations outside of the HFTD. As further addressed below, SDG&E's DCRI network requires just that—a network of base stations that allows communications and systems to extend into SDG&E's backcountry areas throughout the HFTD, providing support for many WMP initiatives that reduce wildfire risk. Further, the DCRI initiative includes centralized costs, such as licensing and systems, that are not specific to a specific base station. Absent these costs—including work outside of the HFTD, the DCRI program would not work as planned. Thus, Cal Advocates' recommended reductions are unfounded and should be disregarded.

SDG&E's DCRI initiative supports a wireless solution that provides high-speed, reliable, safe, and secure communications to vital assets and personnel within HFTD areas. The initiative supports many of the advanced protection systems SDG&E is developing for the HFTD; such as Falling Conductor Protection, SCADA switches to support PSPS events and day-to-day operations, and Early Fault Detection (EFD). The base stations installed throughout the network also provide essential communications to our field and safety crews, exemplifying SDG&E's commitment to maintaining robust communication lines, even in challenging circumstances.

This service requires the implementation of multiple technology components, including the construction of base stations, the procurement of spectrum, and centralized systems that connect the wireless communications back to the central points where the data is needed for effective response to any mitigation efforts on our distribution and/or transmission lines.

Centralizing communication is essential and will allow our grid operations and crews to successfully identify and address any potential fire hazards and/or downed line outages. The DCRI initiative's costs are allocated to these aspects of installing and providing this communication to our HFTD areas.

SDG&E developed a comprehensive plan to design a route from the base stations in the HFTD back to the centralized data center and mission control, along with developing coverage throughout HFTD areas within SDG&E's service territory. In certain cases, where no other route exists, a base station outside the HFTD was necessary to establish a path to the HFTD. In other cases, SDG&E installed a base station outside of the HFTD to optimize the wireless communications for and within the HFTD, which reduces the need for additional base stations. Strategically placed base stations, both inside and outside of the HFTD, help maximize coverage and reduce costs. As connecting the HFTD infrastructure and assets to mission control and SDG&E's data center required a network consisting of some non-HFTD base stations, these stations were necessary and reasonable to achieve the initiative goals.

Further, Cal Advocates' suggestion that the base stations outside the HFTD totaled $55.167 million in capital is based on inaccurate data based on total project costs divided by the number of base stations. These total project costs included one-time collective project costs such as spectrum licensing and other IT costs. SDG&E has further reviewed the costs associated with building isolated base stations. Rather than $55 million, SDG&E spent $10.2 million in capital associated with base stations that are outside the HFTD but are essential to providing effective high-speed wireless communications for base stations and end point devices (SCADA switches, line monitors, regulators, capacitors, etc.) inside the HFTD. Thus, while the Commission should authorize recovery of all capital and O&M costs associated with this necessary project, there is no reasonable basis for a reduction of $55 million.

2. Covered Conductor Installation

Cal Advocates recommends the removal of costs associated with the 0.25 miles of covered conductors outside of Tier 2 and Tier 3 HFTD, claiming that "this installation does not focus on mitigating the highest wildfire risk and preventing catastrophic wildfires."[65] However,

[65] Ex. CA-03 (Weaver) at 11.

the one covered conductor project in question included less than 20 poles outside of Tier 2 of the HFTD. These poles were inside the WUI and less than 1,000 feet from the western edge of Tier 2 of the HFTD. The costs associated with this covered conductor project were reasonably tied to the proximity to the higher risk HFTD, and the very limited scope of work outside the HFTD. Thus the project is reasonable and should be authorized for recovery.

3. SCADA Capacitors

Cal Advocates recommends removing costs associated with SCADA capacitors installed outside of the HFTD.[66] Cal Advocates acknowledges SDG&E's justification of these capacitor projects, noting that 42 of the capacitors were installed in WUI and coastal canyon areas where wildfire risk is present. These areas pose the risk of significant damage to homes and property, as evidenced by the 2020 Coastal Fire in SCE's service territory. Further, these areas may be more densely populated than backcountry areas in the HFTD. Thus, SCADA capacitors provide a reasonable and tailored lower-cost risk mitigation tool that reflects the fire risk of the area. Additionally, 33 of the 45 SCADA capacitors outside the HFTD are within 2 miles of the HFTD boundary, and 29 are within one mile. As these mitigation investments were reasonable and tailored to the risk, they should be authorized for recovery.

4. Expulsion Fuse Replacements

Cal Advocates recommends removing costs associated with the Expulsion Fuses outside of Tier 2 and Tier 3 HFTD areas.[67] Of the 18 Expulsion Fuses in question, 11 of them were in the WUI, installed in areas immediately adjacent (i.e., within 600 feet of the HFTD boundary) to Tier 2 of the HFTD, or both, as further summarized below:

- P773260 – 30 feet outside of HFTD Tier 2 (3 fuses)
- P192818 – 50 feet outside of HFTD Tier 2 and in the WUI (3 fuses)
- P24321 – 10 feet outside of HFTD Tier 2 and in the WUI (3 fuses)
- P321999 – 600 feet outside the WUI (2 fuses)

[66] *Id.* at 9.

[67] *Id.* at 11-12.

SDG&E's fuse replacements are reasonably tailored to risk and should be authorized for recovery.

5. PSPS Sectionalizing

Cal Advocates recommends removing PSPS sectionalizing costs associated with work performed outside of Tier 2 and Tier 3 HFTD areas.[68] Limiting such work to the HFTD, however, is inappropriate and ill-tailored to the goal of reducing PSPS risk and impacts, which is tied to system configuration, rather than wildfire risk. Sectionalizing switches for PSPS purposes are strategically placed where they can be easily accessible to personnel if manual operation is required. For example, a sectionalizing switch may be placed along a road before the circuit drops across a highway or down a hillside into the HFTD. In addition, it can be more prudent, practical, and sometimes safer to place the switches outside HFTD. For example, if there was no practical location to install a switch within the HFTD and none was installed outside the HFTD, the circuit would have to be de-energized at the substation, expanding the PSPS to additional customers unnecessarily.

Further, the PSPS sectionalizing work was closely tied to high risk areas, and in close proximity to the HFTD. Of the 12 devices that Cal Advocates recommends for reduction, one is in fact in Tier 2 of the HFTD and 11 are immediately adjacent to Tier 2. The 11 that are adjacent to Tier 2 provide rapid isolation during any wind or wildfire incidents. The PSPS sectionalizing projects are reasonable and should be authorized for recovery.

6. Microgrids

SDG&E disagrees with Cal Advocates' recommendation to reduce WMP microgrid spending for two microgrids that fall outside an HFTD: Shelter Valley and Butterfield Ranch.[69] By nature, a microgrid is not meant to reduce the risk of ignition or wildfire, but instead provides resiliency to a community that would otherwise be deenergized. In the context of the WMP, microgrids are resources that provide electric resiliency during PSPS events and support state

[68] *Id.* at 12.

[69] *Id.* at 13.

and regulatory directives to reduce the "scale, scope, and frequency of PSPS events."[70] Therefore, Cal Advocates' assertion that a microgrid should directly reduce the risk of ignition or wildfire is incorrect. As stated in a discovery response to Cal Advocates:

> …The decision to de-energize a power line is a last resort solution to reduce the risk of utility infrastructure causing a catastrophic wildfire. PSPS events result in impacted customers being without power for anywhere from a few hours to up to multiple days for a single event. Microgrids provide power continuity to customers during both planned and unplanned outages. Specifically, during PSPS events, this results in reduced duration and severity of disruption to customers' electric service. The reduction of PSPS impacts is key to increasing resiliency and reliability to customers. This is especially important for critical facilities, as they provide firefighting resources and life-saving services among other things, and AFN customers some of whom require medical devices to be powered 24 hours a day, seven days a week.[71,72]

Cal Advocates also states incorrectly that SDG&E unreasonably prioritized a microgrid outside the HFTD over an alternative location within the HFTD, citing without support that previously identified potential microgrid locations within the HFTD "may have" better served customers.[73] Although the Shelter Valley and Butterfield Ranch microgrids themselves are not located in the HFTD, the circuits that feed both microgrids are located within Tier 2 and Tier 3 of the HFTD. If those circuits experience a de-energization due to high risk conditions, these communities are also affected, despite their non-HFTD location.

Additionally, the two microgrid locations were identified through efforts to identify communities in need of support and customer feedback regarding areas that would benefit from a microgrid, some of which have been identified as AFN. The Butterfield Ranch microgrid is located in a desert community in the eastern part of the service territory and has supported 119 customers since 2020. These customers range from residential, commercial, essential, and medical baseline, and approximately 24% are identified as AFN. During prior de-energizations,

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[70] *See,* Office of Energy Infrastructure Safety, 2023-2025 Wildfire Mitigation Plan Process and Evaluation Guidelines; December 6, 2022 at 9 (WMP evaluation criteria include "The electrical corporation demonstrates a clear action plan to continue reducing utility related ignitions and the scale, scope, and frequency of Public Safety Power Shutoff (PSPS) events.")

[71] SDG&E's Data Request PAO-SDGE-MW5-007 Question 1b.

[72] SDG&E's 2022 WMP Update Progress Report (February 11, 2022) at 200, available at https://www.sdge.com/sites/default/files/regulatory/SDG%26E%202021%20WMP%20Update%2002-05-2021.pdf.

[73] Ex. CA-03 (Weaver) at 13.

the Butterfield Ranch microgrid provided customers PSPS resiliency for a total of 50 hours in 2020 and 37 hours in 2021. In addition to PSPS support, the Butterfield Ranch microgrid provided resiliency during a 9-hour planned outage in 2022.

Shelter Valley microgrid is located in a desert community in the far eastern part of the service territory. The Shelter Valley microgrid has supported 223 customers since 2020. Customers range from residential, commercial, essential, and medical baseline, and include the critical facility of the San Diego County Fire Station #53. Approximately 40% of these customers have been identified as AFN. The Shelter Valley microgrid provided customer resiliency during PSPS events for a total of 48 hours in 2020 and 37 hours in 2021. In addition to PSPS support, the Shelter Valley microgrid provided resiliency for 10-hours during a planned outage in 2022.

As SDG&E's microgrids all serve to meet the requirement to reduce the "scale, scope, and frequency" of PSPS events, and are tailored to PSPS risks related to system configuration, The Commission should authorize SDG&E's requests related to microgrid costs.

7. Hotline Clamps

Cal Advocates recommends removing work that was performed outside of the Tier 2 and Tier 3 HFTD areas.[74] Of the 15 Hot Line Clamps that Cal Advocates recommends for removal, five of them are in fact within Tier 2 of the HFTD and eight are in the WUI. Of the eight Hot Line Clamps in the WUI, six are in close proximity to the Tier 2 boundary:

- P192818 – 50 feet from HFTD Tier 2 boundary (3 Hot Line Clamps)
- P10401 – 15 feet from HFTD Tier 2 boundary (3 Hot Line Clamps)

SDG&E's costs related to Hotline Clamps are reasonably tied to SDG&E's system, in proximity to the HFTD, and reduce risk. The Commission should authorize their recovery.

8. Strategic Undergrounding

Cal Advocates recommends removing $2.1 million in capital costs, and O&M costs associated with strategic undergrounding work performed outside of the Tier 2 & Tier 3 HFTD

[74] *Id.* at 14.

areas.[75] These costs were incurred to achieve the goals of SDG&E's strategic undergrounding program, including reduced PSPS impacts for an otherwise high risk segment, are reasonable, and should be authorized for recovery.

The purpose of the Strategic Undergrounding Program is to mitigate wildfire risk and reduce PSPS events within areas of the service territory that are within the HFTD. In order to achieve PSPS reduction to critical infrastructure within communities such as schools, fire and police stations, libraries, and gas stations, a direct underground feed is necessary from the electrical substation to the infrastructure being served.

Cal Advocates recommends removing the cost of 0.96 miles of a 10.5-mile segment that was installed from 2019 to 2022, however without a direct feed from the substation, the PSPS reduction benefits of this overall 10.5-mile project would not be achieved. If 0.96 miles of the project was not undergrounded, all customers related to the project would still be impacted by PSPS events.

Although the portion of the 10.5-mile project that falls outside the HFTD, which includes Jamacha substation, is not in the HFTD, it is still in a high fire risk area. Figure JW-3 shows an image of Jamacha substation looking southeast along the project. The area includes heavy and continuous wildland fuels, steep topography, and other factors that are aligned with conditions that make up the HFTD.

Figure JW-3: Jamacha Substation

[75] *Id.* at 15.

9. Distribution Overhead System Hardening

Cal Advocates recommends removing costs associated with overhead system hardening work performed outside of Tier 2 and Tier 3 HFTD areas.[76] The majority of hardening associated with this program occurred within Tier 2 and Tier 3 of the HFTD from 2019 to 2022.[77] For work performed outside of the HFTD, most of the poles hardened are less than one mile from the Tier 2 and all are within the WUI. Most of the projects outside of the HFTD were part of the Wire Safety Enhancement (WiSE) program, which focused on replacement of conductors in the WUI. For example, WiSE performed work in the aforementioned Rancho Santa Fe community, where the dense vegetation and mature, taller trees are known contributors to infrastructure failures and wildfires. In some cases, some hardening projects started in Tier 2 of the HFTD and extend a few spans outside of Tier 2. Given the poles are in the WUI and near Tier 2, cost for these projects should continue to be included.

Because the WiSE program pre-dated SDG&E's existing grid hardening risk models, SDG&E also performed overhead hardening in the North Coast District bordering Tier 2 of the HFTD based on analysis of the Vegetation Risk Index (VRI) and historical wind statistics. The VRI quantifies risk based off data from hundreds of thousands of trees, historical power outages, and historical weather data, providing situational awareness to help reduce tree related outages and tree related ignitions before they happen, thus reducing the risk of wildfires. While the VRI is primarily intended for use in PSPS decision making, SDG&E performed an overlay with Vegetation Management Areas (VMA) to obtain a greater understanding of risk based on available data and inform potential hardening solutions. The figure below highlights the North Coast District as a high-risk area. This analysis supports that areas where SDG&E performed overhead hardening work outside of the HFTD were reasonable, and the Commission should authorize recovery of all costs associated with the program.

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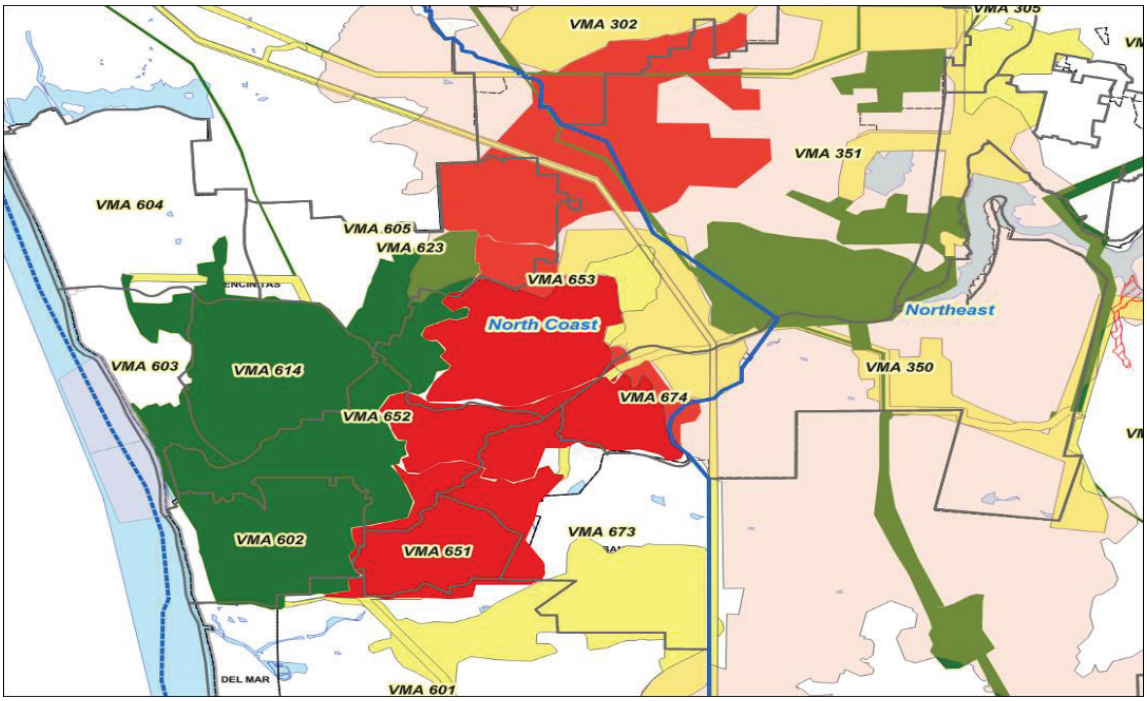
[76] *Id.* at 16.

[77] SDG&E notes that much of its overhead system hardening projects were scoped before development of SDG&E's WiNGS model, which further refined the company's understanding of wildfire risk at the circuit segment level. Thus SDG&E used other models, situational awareness, and subject matter expertise to inform work locations.

Figure JW-4: Comparison with VMA and VRI Demonstrates Risk Areas



10. Lightning Arrestor Replacements

Cal Advocates recommends removing costs associated with lightning arrestor replacements performed outside of Tier 2 and Tier 3 HFTD areas.[78] Of the 14 Lightning Arrestors that Cal Advocates recommends excluding, eight are in the WUI and/or in close proximity to Tier 2 of the HFTD, and three are in Tier 2:

- P773260 – 10 feet from HFTD Tier 2 (3 Lightning Arrestors)
- P192818 – 50 feet from HFTD Tier 2 and in the WUI (3 Lightning Arrestors)
- P24321 –in HFTD Tier 2 (3 Lightning Arrestors)
- P278126 –in the WUI (2 Lightning Arrestors)

As the non-HFTD lightning arrestor replacements described above were reasonably tied to reducing wildfire risk, the Commission should authorize their recovery.

[78] Ex. CA-03 (Weaver) at 19.

11. Avian Mitigation

Cal Advocates recommends removing costs associated with avian mitigation work performed outside of Tier 2 and Tier 3 HFTD areas.[79] Of the three Avian Mitigation projects that Cal Advocates recommends excluding, however, two are in the WUI and one is in Tier 2 of the HFTD. These projects are reasonably tied to SDG&E's WMP goals and should be authorized for recovery.

B. Other Direct Costs

1. Alerts by SDG&E App

Cal Advocates incorrectly associates all costs associated with the PSPS Communications Practices initiative subcategory as tied to the development of the Alerts by SDG&E App, which supports PSPS awareness and communications across the service territory. Cal Advocates' recommendation that these costs be entirely disallowed[80] is based on two flawed premises: first, not all of the costs are correlated with development of the Alerts by SDG&E App; second, Cal Advocates demonstrates a deep misunderstanding of the roles and obligations of state and county emergency management operations in PSPS situations, as well as utility regulatory requirements related to notifications.

There is no basis for Cal Advocates' erroneous conclusion that the entirety of the PSPS Communications Practices category of costs is related to the Alerts app. As described in my Revised Direct Testimony, this category covers costs associated with PSPS-specific communications prior to, during, and following a PSPS event.[81] Cal Advocates appears to have derived the figure it purports to associate with the App from a sort of records under the work category of "Stakeholder Cooperation & Community Engagement." But even Cal Advocates' workpapers clearly establish that only a limited portion of the $15 million in capital and $31 million in O&M are tied to the Alerts App.[82] Rather, these costs are clearly linked to a number of

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[79] *Id.* at 19-20.

[80] *Id.* at 17-18.

[81] Ex. SDG&E-T2-01R (Woldemariam) at 104.

[82] CA-02-WP (A2205016 Public Advocates Office (Quam) Direct Costs Part 1 of 2) at tabs "App Development – Capital" and "App Development – O&M."

activities that Cal Advocates does not contest, including the development of SDG&E's Public Safety Partner Portal and Emergency Notification Enhancement Projects.

With respect to O&M costs, there is nothing to substantiate that the costs recommended for disallowance were correlated with the App. In fact, some of the O&M costs recommended for disallowance here, are the exact same costs that Cal Advocates previously recommended for disallowance because they were related to "market research."[83] It appears that Cal Advocates attempted to simply do a keyword or field sort to identify costs and again inaccurately associates them with WMP initiatives. In making these errors, Cal Advocates argues for some costs that were rightfully and reasonably incurred to be disallowed twice over. Witness Quam's analysis of these direct costs should be disregarded on this basis alone.

In addition to the erroneous financial analysis, Cal Advocates misrepresents the purpose and function of the San Diego County Alerts System, and the County's emergency management obligations with respect to PSPS. The San Diego County Alerts system is a designated local system that requires residents to register for the service. This system serves as a reverse 911 system and also issues emergency alerts & warnings. Alert & warning is defined by the Federal Emergency Management Agency (FEMA) as follows, "... provides authenticated emergency and life-saving information to the public through mobile phones using Wireless Emergency Alerts (WEA)." "WEA alerts only cover critical emergency situations. Consumers may only receive four types of alerts:

- National alerts issued by the President of the United States or the Administrator of FEMA
- Alerts involving imminent threats to safety or life
- Amber [sic] Alerts about missing children
- Alerts conveying recommendations for saving lives and property."[84]

A PSPS does not meet the above criteria for a wireless emergency alert and therefore could not be distributed by the San Diego County Alerts system, even assuming the County

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[83] *See e.g.,* CA-02-WP at tabs "Market Research O&M" and "App Development O&M." The same $585,881 line item is included in both calculations, resulting in an unjustified double reduction of the same costs.

[84] https://www.fcc.gov/consumers/guides/wireless-emergency-alerts-wea

wished to coordinate on the costs and efforts to implement the required notifications. The Alerts by SDG&E App is thus the sole source for these utility-specific communications and there is no redundancy between these systems. The Alerts by SDG&E app is also a way for customers who are not the billing contact (e.g., customers with master meters such as mobile home parks or multiunit buildings) to receive notifications.

Again, even assuming the County of San Diego were to use the San Diego County Alerts system for PSPS notifications, they would assume an additional cost as their system is built on a cost-per-call basis. A block of calls is pre-purchased annually and more are added, as necessary. If the San Diego County Alerts system was used to send SDG&E messages the associated cost could be passed on to the ratepayers, further supporting the reasonableness of using an app-based system, which reduces the potential for ongoing, long term notification costs.

The County of San Diego has an additional mobile application. SDCountyEmergency, that does not send notifications but provides information on emergency preparedness, response, and recovery activities. However, because a PSPS is not considered an emergency by the San Diego County Office of Emergency Services, PSPS information would not be sent through the SDCountyEmergency app.

Finally, because the SDG&E service territory extends beyond San Diego County and into Orange County, development of an SDG&E mobile app was necessary to ensure a consistent customer experience in both counties. SDG&E partners closely with our San Diego and Orange County Office of Emergency Services partners, who have expressed confidence in SDG&E's ability to notify our customers. They are prepared to magnify our messages upon request but do not send them out as emergency alerts. Use of county notification systems is "at their discretion."[85]

This is consistent with the plain language of the PSPS notification requirements that Cal Advocates seems to ignore, despite citing it in support of their recommended reductions. As D.19-05-042 states, the utilities have the "*primary*" burden of "*initial*" PSPS notifications.[86] The burden is clearly on the utility to provide and update the six required notifications associated with PSPS. The burden also lies with the utility to be coordinated with local governments to

[85] D.19-05-042, Appendix A at A15 – A16 and A1.

[86] *Id.,* Appendix A at A2 (emphasis added).

support the "goal that local governments provide *supplemental or secondary* notifications" after the utility fulfills the burden of the primary notification.[87] While Cal Advocates cites these requirements in trying to shift the burden of PSPS notifications to public safety partners, including San Diego County, the Commission's decisions to this point speak for themselves as to SDG&E's responsibilities.[88] This continued erroneous interpretation of SDG&E's requirements demonstrates that the Commission should disregard Cal Advocates recommendations related to this area.

Additionally, Appendix A at A9 of D.19-05-042, states "Supplemental notification does not supplant the electric investor-owned utilities' responsibility to provide notification to all customers." Use of any third-party app, including the county alert system, would be considered supplemental notification and would still require SDG&E to make the primary notifications. D.19-05-042 also states, "The California Alert and Warning Guidelines state that 'people rarely act on a single warning message alone. To be effective, warnings should be delivered in various formats via various media, both to increase reliability of warning delivery and to provide a sense of corroboration that will encourage recipients to take protective actions.'"[89]

SDG&E' mobile app allows customers and public safety partners to utilize its official notification tools at their discretion and expands the reach of PSPS notifications to customers who may otherwise not receive them. The costs associated with this initiative are reasonable and should be authorized for recovery.

2. Pole Brushing

Cal Advocates' Witness Quam exhibits a continued misunderstanding regarding incremental vegetation management costs, specifically related to pole brushing activities.[90] SDG&E's regular vegetation management activities are separately tracked in SDG&E's Tree Trimming Balancing Account. Costs associated with Pole Brushing were separately authorized

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[87] Id.

[88] *See,* D.20-05-051, Appendix A at A-4 ("Each investor owned utility shall ensure that the public is able to access precise locality information of potential and active de-energization event impact service points. … All notifications to customers regarding potential or active de-energization events shall be communicated with ease of readability and comprehension as a priority.")

[89] D.19-05-042, Appendix A at A18 - A19.

[90] Ex. CA-02 (Quam) at 15.

in D.19-09-051; because these costs are directly tied to SDG&E's WMP, pole brushing costs were recorded to SDG&E's WMPMA and offset by the total authorized amount. Cal Advocates thus inaccurately represents both the scope and purpose of the incremental costs that are the subject of SDG&E's request, Witness Quam also represents the amount of SDG&E's request. Rather than $18.825 million, SDG&E is only requesting $3,139 million in incremental O&M costs associated with pole brushing.[91]

Table JW-2: Pole Brushing Incremental Costs

Year	Units (poles)	Actual Capital	Actual O&M	Authorized Capital	Authorized O&M	Differential Capital	Differential O&M
2019	36563	-	$2,591	-	$3,988	-	$(1,397)
2020	35102	-	$5,435	-	$4,093	-	$1,342
2021	34000	-	$5,558	-	$4,194	-	$1,364
2022	35485	-	$6,107	-	$4,277	-	$1,830
Total	141,150	-	$19,691	-	$16,552	-	**$3,139**

SDG&E is required to perform pole brushing in accordance with Public Resources Code Section 4292 as an ignition and wildfire prevention measure. SDG&E performs this activity on an average of approximately 35,000 poles annually throughout the State Responsibility Area within the service territory. To maintain compliance year-round, most of the pole brushing locations require two separate visits annually. As a component of its WMP, SDG&E may also perform limited discretionary pole brushing in the HFTD on poles that are not subject to the requirements of Public Resource Code Section 4292. My Revised Direct Testimony further discusses both the requirements associated with, and merits of, SDG&E's pole brushing practices.

Between the years 2019 through 2022, annual costs related to pole brushing increased incrementally primarily due to increases associated with contracted labor. Most notably, worker wages increased dramatically beginning in 2020 as a result of SB 247,[92] which brought utility

[91] Ex. SDG&E-T2-01R (Woldemariam) at 79.

[92] SB 247, Stats. 2019-2020, Ch. 406 (Cal. 2019) at Section 2(b), available at https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201920200SB247.

vegetation management (pole brushing and tree trimming) wages on par with utility apprentice line-person workers.

SDG&E properly recorded pole brushing costs in its WMPMA, and consistent with other initiatives with forecasts authorized in D.19-09-051, any authorized amounts were reduced from SDG&E's direct costs. The $3.139 million in incremental costs were reasonably incurred in support of regulatory requirements and SDG&E's WMP, and the Commission should authorize their recovery.

3. Aviation Firefighting

Small Business Utility Advocates (SBUA) was the only party to contest costs associated with Aviation Firefighting, claiming "SDG&E's aerial firefighting costs should be disallowed. In the 2019 GRC, SDG&E was authorized to utilize one helitanker year around under the heading of 'Wildfire Caused by SDG&E Equipment.' It is not clear how this funding amount compares to the amount now requested or whether the assets describe include this same helitanker or a different helitanker."[93] Additionally, "SDG&E has no explanation of how it has assured that customers are not paying for firefighting agency use unrelated to SDG&E's utility activities."[94]

SBUA fails to recognize that SDG&E provided year-over-year comparisons between actual and authorized spend related to Aviation Firefighting, which demonstrate a $32 million undercollection for capital, and an overcollection for O&M. Further, SDG&E described the assets at issue, including the air-crane helicopter, which was the subject of testimony and authorized in D.19-09-051, and the subsequent addition of the Sikorsky UH-60 Blackhawk helitanker. SDG&E's acquisition of the Blackhawk supports night firefighting with appropriate support, as further described in my Revised Direct Testimony.[95] These additional capabilities further mitigate against the propagation of wildfires by adding suppression support and are reasonable for recovery.

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[93] Opening Testimony of Ariel Strauss on Track 2 on Behalf of SBUA (June 14, 2024) (Ex. SBUA-01 (Strauss)) at 10 (citation omitted).

[94] *Id.*

[95] Ex. SDG&E-T2-01R (Woldemariam) at 87.

SDG&E disagrees with SBUA's representations that SDG&E is supplanting county emergency services operations and stepping into provide "conventional public safety services."[96] Any wildfire within the SDG&E service territory can affect our infrastructure, further complicate recovery efforts and service restoration, and threaten customer safety. Extinguishing ignitions quickly, before they can become potentially catastrophic wildfires, no matter the cause of the fire, reduces or eliminates the need for costly electrical infrastructure repairs and enhance reliability. Further, because the cause of the ignition is often not known at the time of initial response, bifurcating suppression responsibility based on cause would lead to inconsistent and delayed response, further exacerbating the effects of an ignition. Therefore, SDG&E has made heavy construction helicopters available to fire authorities within the region for use in fighting fires. SDG&E's aerial fighting resources are available under a Memorandum of Understanding (MOU) with the County of San Diego Fire Authority/CAL FIRE which details how assets are dispatched to aid in firefighting, and includes a cost-sharing arrangement to reduce the burden on ratepayers.

CAL FIRE owns and contracts aerial firefighting assets, however, these can be moved out of the area to aid in fighting fires in other regions and therefore there is less support if a fire occurs in or near SDG&E's service territory. This has been seen in past years for support of fires in other California areas. The MOU also ensures SDG&E assets will not leave the service territory, guaranteeing that suppression assets will remain in the region and available should they be needed.

4. Fire Potential Index Development

SBUA appears to debate the incrementality of SDG&E's Fire Potential Index costs, claiming, "SCE's [sic] application does not reflect any approved expenditures in its table for FPI."[97] In D.19-09-051, costs associated with fire potential index (FPI) and meteorology were aggregated under Emergency Management and multiple other workpapers within Electric Distribution..[98] Because of this approach, the Commission did not authorize dollars specific to FPI. To address SBUA's generalized concerns regarding incrementality, the authorized amount

[96] Ex. SBUA-01 (Strauss) at 10.

[97] *Id.* at 6 (citation omitted).

[98] D.19-09-051 at 271.

for the Emergency Management workpaper is included in table JW-1 in my revised testimony under categories Situational Awareness and Forecasting and Emergency Planning and Preparedness.

The FPI supports situational awareness and risk assessment by producing a 7-day forecast classifying fire potential based on weather and fuels conditions, as well as historical fire occurrences. The situational awareness provided by the FPI delivers guidance to operational groups within SDG&E to understand the types of activities that are safe to perform, and when additional system precautions, such as wildfire protection teams or enabling of sensitive relay profiles are required. Since 2019, SDG&E has invested over $9 million in Fire Science Enhancements working with leading innovators from Academia and Industry to include Technosylva, the San Diego Supercomputer Center (SDSC), San Jose State University (SJSU), and Scripps Institute of Oceanography's CW3E.

Technosylva supports SDG&E's cutting-edge fire behavior and risk modeling software Wildfire Analyst Enterprise with FireRisk/FireSim Software & Risk Forecast Data. The ability to accurately characterize the susceptibility of the environment to support fire is determine using the latest and most advanced data sets to include surface and canopy fuels data, woody and herbaceous Live Fuel Moisture (LFM) data, and UAS LiDAR Fuels Data including biomass data production.

SDSC ingests and stores SDG&E datasets for weather forecast, Fire Potential Index and fuels to enable findability and accessibility of these datasets for various stakeholders through web services and visual maps. Application Programming Interfaces (APIs) enable time range or geolocation and tagged metadata-based querying as well as grouping and subsetting of datasets for context-driven use by authorized users. The map services enable layering of these datasets for use in fire modeling.

The San Jose State University is developing a new Live Fuel Moisture Content (LFMC) tool to better assess fire danger in the SDG&E service territory using state-of-the-science remote sensing data sets. These tools will be developed using the new high-resolution data from various satellite products eventually leading to a dataset and methodology to incorporate these tools into the Technosylva Wildfire Analyst (WFA) fire behavior modeling platform and to improve the SDGE Fire Potential Index.

The CW3E runs the West-WRF forecasting system that includes a 200-member ensemble at 9 km horizontal grid spacing. Due to the large number of members, the West-WRF ensemble can better represent the distribution of physically plausible weather forecast outcomes, capturing the probability of extreme events. Output from the ensemble can be used to provide SDG&E with probabilistic forecast information about key meteorological variables associated with wildfire conditions.

SDG&E's FPI investments are reasonable and incremental, and should be authorized for recovery.

C. Dues Paid To Collaborative and Industry Organizations

Cal Advocates objects to recovery of incremental O&M and capital costs related to Dues, relying on a baseless and unsupported claim that "Dues are typically paid to organizations that engage in lobbying,"[99] The dues that SDG&E seeks to recover through this application are unrelated to any lobbying activity, and support collaborative research work in furtherance of the objectives of Energy Safety. Further, by sharing information, lessons learned, and data through these organizations, ratepayers realize the benefits of potential cost efficiencies and reduction of overlapping work.

The O&M expenses for Dues are for memberships in joint IOU collaborative organizations, including the following:

- International Wildfire Risk Mitigation Consortium (IWRMC): The IWRMC is a consortium of utilities brought together by a utility consulting firm, UMS, to share information on various wildfire mitigations each utility practices.
- California Utilities Emergency (CUEA): The CUEA is an association of utilities to have more effective mutual assistance after major incidents.
- Academic Partnerships, such as the San Jose State University Industry-University Cooperative Research Center – Wildfire Interdisciplinary Research Center (IUCRC-WIRC). The San Jose State – IUCRC-WIRC located at San Jose State University, is an innovative collaboration between universities and industry that provides tools, observational and predictive, and research results for use by first responders, those

[99] Ex. CA-02 (Quam) at 15.

interested in risk analysis, and policy makers for communities and companies/utilities impacted by, and concerned about, wildfires. Center research thrusts include fire weather and atmospheric modeling and forecasting; fire behavior monitoring and modeling; wildfire management and policy, and climate change and wildfire risk.

There were also some smaller O&M costs totaling roughly $11k driven by employee reimbursements for professional licensing renewals.

The capital payment for dues are fees paid for engineering staff working on capital work and attending technical conferences.

As these organizations achieve SDG&Es WMP objectives of fostering collaboration and sharing of best practices, the Commission should disregard Cal Advocates unfounded representations related to these requested costs and authorize their recovery in full.

D. It is Inappropriate to Reduce SDG&E's Request Based Upon Future Cost Savings Associated With Undergrounding

Cal Advocates bizarrely and without any precedent or support advocates that forecasted cost savings associated with SDG&E's Strategic Undergrounding Program should be applied to offset and reduce SDG&E's direct costs for WMP undergrounding completed between 2019 and 2022. Cal Advocates attempts to twist the principle of intergenerational equity to punish SDG&E by disallowing costs even Cal Advocates acknowledges are otherwise reasonable. The installation of new infrastructure is the exact opposite of the "decommissioning" projects Cal Advocates cites as an example in support of their argument. Unlike a decommissioned asset—which by definition is no longer in service—the newly installed undergrounding will benefit customers over forty or more years. Cal Advocates' arguments in this vein are misplaced and should be disregarded.

SDG&E does not dispute that its strategic undergrounding projects will result in a cost savings in the form of reduced PSPS costs, vegetation management costs, and reduced asset inspections. The lifecycle cost savings associated with undergrounding is one reason why SDG&E Strategic Undergrounding initiative is an efficient and effective tool for wildfire mitigation and overall climate resiliency.

That said, the costs savings associated with undergrounding is something that will be realized in the future—and those savings realized by future ratepayers—consistent with principles of intergenerational equity. This concept is also furthered by the method by which

SDG&E recovers the authorized capital costs associated with a large project such as Strategic Undergrounding. Current ratepayers pay for the benefits they receive at the time—i.e., current costs for inspections and maintenance and the capital-related costs (depreciation, return, and tax). Because an undergrounding asset is depreciated over a life cycle of 40-50 years, ratepayers pay for the asset over that period of time. At the same time, those ratepayers will experience the ongoing reduction in lifecycle costs as a corollary benefit of the underground asset. Contrary to Cal Advocates' assertions, current ratepayers take on the entire burden of the undergrounding project and future ratepayers only experience the cost savings (as would more likely be the case in a decommissioning, for instance).

Additionally, Cal Advocates lacks any basis to claim that SDG&E's TY 2024 GRC Request does not include any of the cost savings associated with undergrounding in its forecasted revenue requirement. Even assuming this is true, however, any ratepayer benefits associated with these savings will be realized through SDG&E's proposed Wildfire Mitigation Plan Balancing Account (WMPBA), which would facilitate the return of unspent WMPBA balances to ratepayers.[100]

Finally, to deny recovery of incurred direct O&M costs that are otherwise deemed just and reasonable and in support of a just and reasonable wildfire mitigation initiative, based upon projected cost savings associated with undergrounding that may not even be realized in the 2023-2027 timeframe, would unfairly punish SDG&E and run contrary to all ratemaking principles and the regulatory compact. Cal Advocates' attempts to turn intergenerational equity and ratemaking principles on their head should be rejected, and SDG&E should receive authorization to receive its full request related to its Strategic Undergrounding Program.

VII. PCF'S ATTEMPTS TO CONTINUALLY RELITIGATE A SOLAR PLUS STORAGE ALTERNATIVE SHOULD BE DISREGARDED

PCF's testimony essentially restates several previously raised arguments related to Solar Plus Storage (SPS) alternatives, much like their testimony in Track 1 of this proceeding.[101] As in

[100] *See* Track 1, Second Revised Prepared Direct Testimony of Jonathan T. Woldemariam (Wildfire Mitigation and Vegetation Management) (Ex. SDG&E-13-2R-E).

[101] *See e.g.,* Track 1, Prepared Direct Testimony of Bill Powers, P.E. on Behalf of PCF (March 27, 2023) at 3.

Track 1, PCF's arguments are flawed for several reasons, including the fact that PCF repeatedly limits its Track 2 testimony to the costs included in SDG&E's 2019-2020 WMPs,[102] mischaracterizes prior PCF testimony as Commission direction,[103] and fails to recognize that SPS, standing alone, is not a wildfire mitigation tool—SPS only benefits customers with those systems during a de-energization. Thus, the crux of PCF's arguments supports ongoing use of prolonged PSPS and hoping customers can hold out with a battery system. This argument should continue to be flatly rejected as it is inconsistent with the requirements of Public Utilities Code Section 8386, imposes an unreasonable burden on customers, and contradicts Commission and Energy Safety directives—as well as stakeholder requests—to reduce the use of PSPS and other risk mitigation tools that impact reliability.

In its Track 2 testimony, PCF compounds on its prior errors through a deeply flawed analysis of SDG&E's risk assessment, makes blanket and unfounded statements concluding that essentially none of SDG&E's WMP costs are just and reasonable and maligning SDG&E's motivations in its WMP implementation, and then proceeds to conclude with recommendations that programs should be "discontinued."[104] PCF appears to misunderstand the purpose of this phase of the proceeding, the scope of which addresses SDG&E's 2019-2022 costs and whether the Commission should grant recovery thereof, not whether future activities should be authorized. PCF continues to let their preferred outcome—a 2019 Commission directive to implement broad use of SPS in SDG&E's service territory—bias their analysis. In light of these errors, PCFs testimony should not be given weight.

A. PCF's Risk Analysis and Review of Mitigation Effectiveness Lacks Merit

PCF incoherently performs an analysis of the cost effectiveness of initiatives by taking total spent on each mitigation and dividing that by the number of ignitions avoided—apparently deriving their own estimate of "Amount Spent Per Ignition Reduced or Avoided (2019-

[102] Prepared Direct Track 2 Testimony Powers of Bill Powers, P.E. on Behalf of PCF (June 14, 2024) (Ex. PCF-41 (Powers)) at 2.

[103] *Id.* at 3, nn.3-5.

[104] *Id.* at 6.

2022)."[105] This analysis is inconsistent with any proper risk assessment practices, the general standard for reviewing mitigation cost effectiveness during the time period in question (RSEs), and basic math. PCF's "amount spent per ignition reduced or avoided category" tallies up well over SDG&E's $2.2 billion in wildfire-related spending from 2019-2022, extrapolating that SDG&E spent $3.8 billion on ignitions avoided through avian mitigation. This calculation is an inadequate and uninformed method for assessing cost effectiveness, because it puts the cart before the horse and basis risk assessment on a lagging indicator of ignitions avoided. Additionally, PCF inappropriately limits its risk analysis to the likelihood of an ignition and consciously disregards the potential consequence of ignition. While PCF dismisses the concept that ignitions have the potential to become catastrophic wildfires,[106] recent historical wildfires, including the Dixie, Lahaina, or Camp Fire fires have led to damages in excess of a billion dollars. Even assuming a wildfire of less historical impact, SDG&E anticipates that damages could exceed $350-$500 million in multiple locations across its service territory based on Technosylva simulations. PCF's failure to assess ignition consequence renders their analytical effort unhelpful and misleading.

Further, ignitions avoided has no bearing on several SDG&E initiatives because many WMP costs were incurred for other reasons, including but not limited to fire suppression, PSPS mitigation, situational awareness, or risk assessment.[107] SDG&E's risk assessment methodology properly looks at likelihood and consequence of ignitions to inform RSE development and assess cost effectiveness of mitigations. Where no RSE is available, SDG&E has adequately established the cost effectiveness of initiatives that serve as foundational to SDG&E's WMP.

Because PCF's analysis regarding cost per ignition avoided incorrectly reflects risk reduction, their blanket statement that all mitigations that "cost more than $10 million per

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[105] *Id.* at 4-5 (citation omitted). SDG&E notes that after all intervenor testimony was submitted, PCF served a data request to clarify SDG&E's calculation of "ignitions reduced or avoided in the HFTD." Based upon that response, PCF submitted errata testimony after the deadline for intervenor testimony. PCF did not seek leave from the ALJ or parties to submit late testimony. SDG&E is thus basing this rebuttal on PCF's original intervenor testimony, however, the flaws in the analysis are identical.

[106] *Id.* at 6.

[107] SDG&E, for instance, does not calculate an ignition risk associated with its generator initiatives because generators alone do not mitigate against ignition. They mitigate the impacts of PSPS. It is the de-energization that addresses ignition risk. *See* Ex. PCF-41 (Powers) at 18-21.

reduced or avoided ignitions should be discontinued as economically ineffective" should be disregarded. First, this recommendation has nothing to do with SDG&E's Track 2 request, as it is a forward-looking statement and implies rejecting a forecasted activity, not reviewing an incurred cost. Moreover, PCF fails to explain or justify their reasoning as to this nonsensical threshold.

B. SDG&E's Mitigations Are Cost Effective and Should be Found Just and Reasonable, Consistent with Commission Precedent

PCF uses its faulty risk assessment analysis to specifically object to mitigation measures they classify as "high cost, low benefit." These include *all of SDG&E's grid hardening programs.* Each of PCF's objections to SDG&E's covered conductor installation, strategic undergrounding, overhead hardening, and drone inspections of overhead infrastructure is inconsistent with SDG&E's obligation to harden infrastructure and founded in PCFs admitted bias toward an SPS alternative. The costs associated with these programs are all reasonable, reduce long-term ignition risk (contrary to PCF's short term measurement of effectiveness), and are consistent with the legislative mandate that California's "electrical corporations must invest in hardening of the state's electrical infrastructure and vegetation management to reduce the risk of catastrophic wildfire."[108]

1. SDG&E's Covered Conductor Costs are Reasonable

Covered conductor is emerging as one of the more generally accepted hardening strategies to reduce the risk of wildfire. The Joint IOU Study of Covered Conductor Effectiveness provides additional data that covered conductor can reduce the risk of fire, and in some instances potentially raise the wind speed thresholds for PSPS events. This study, included in SDG&E's 2022 WMP update, addresses the "lack of consistency" in the "rationale" behind covered conductor, incorrectly cited by PCF to imply that Energy Safety was "concerned about the ignition reduction value of the covered conductor mitigation measure."[109] In reality, this directive sought more information and collaboration among the IOUs to better understand the practices and effectiveness of covered conductor—then very much an emerging utility

[108] AB 1054, Stats. 2019-2020, Ch. 79 (Cal. 2019) at Sec. 2(b).

[109] Ex. PCF-41 (Powers) at 8.

technology with respect to wildfire mitigation. Energy Safety and the Commission have recognized the benefits of covered conductor's protection against foreign object-line contacts;[110] and as a cost-effective alternative to undergrounding, particularly in areas where PSPS events are infrequent.

SDG&E's covered conductor program includes a comprehensive approach to hardening, including the technology that is used, and in the post-construction QA/QC process. For example, when conductors are replaced with covered conductors, wood poles and crossarms are also replaced with steel poles and fiberglass crossarms, resulting in a more robust engineering and design process including pre- and post-construction LiDAR survey data and the use of PLS-CADD software to more accurately model and analyze poles, crossarms, guys, and anchors to meet General Order 95 loading requirements and SDG&E standards.

As the company has completed its first complete circuit segment of covered conductor, SDG&E is beginning to realize some PSPS benefits in the form of increased wind speed thresholds. Further, as demonstrated in the table below, ignitions and faults are reduced on circuits including covered lines.

Table JW-3: Faults Reduced by Covered Conductor

Circuit	CC Miles in HFTD by 2023	Pre-Mitigation Fault Ratio	Post Mitigation Fault Ratio	Pre-Mitigation Ignitions (2014-2023)	Post Mitigation Ignitions
157	23.43	1.33	0.33	2	0
448	50.89	4.83	1.00	0	0
176	7.53	0.50	0.00	0	0
212	10.84	1.83	0.00	1	0
73	1.07	0.17	0.00	0	0
445	12.44	2.67	0.00	0	0
972	4.24	1.33	0.00	0	0
1090	3.95	0.67	0.00	0	0

There is generally little to no debate as to the effectiveness of covered conductor for wildfire mitigation—the debate is largely focused on whether it is effective enough to promote

[110] *See, e.g.* D.23-11-069 at 243 ("Covered conductor can reduce the likelihood of faults including contacts and faults caused by animals"); 254 (recognizing covered conductor as a "proven technology.")

PSPS resiliency. PCF's contentions that SDG&E's covered conductor costs are not reasonable thus lack merit and should be disregarded.

2. SDG&E's Strategic Undergrounding Costs are Reasonable

PCF incorrectly relies on Energy Safety's directions regarding Areas of Continued Improvement (ACI) to imply a finding that Energy Safety somehow disputes the cost effectiveness of SDG&E's undergrounding program. These ACIs, rather, call on SDG&E to further vet programs and provide additional information in upcoming WMPs. SDG&E has exhaustively litigated and proven well beyond a preponderance of the evidence that its strategic undergrounding program provides a targeted, cost-effective hardening solution that nearly eliminates both wildfire and PSPS risk. Particularly for communities who face significant PSPS risk, strategic undergrounding is a reasonable solution and these costs should be approved.

The record on SDG&E's strategic undergrounding program is extensive and includes SDG&E's WMP submissions, including the 2023-2025 WMP, and my testimony in Track 1 of this proceeding.[111] Strategic undergrounding is informed by SDG&E's WiNGS model, which enables risk assessment and prioritization of distribution grid hardening based on both an assessment of SDG&E's overall system risk and the risk of the specific circuit. The program scope is risk based and investment decisions are determined and prioritized based on RSE, improving wildfire safety, and limiting the impacts of PSPS on customers. WiNGS also allows SDG&E to prioritize and scope the highest risk segments earlier—over the next four years, 90% of the mileage scoped for undergrounding is in the riskiest 20% of circuit segments.[112] My Revised Direct Testimony provides additional analysis of the cost-effectiveness of undergrounding and SDG&E's Strategic Undergrounding Program.[113]

3. Overhead Hardening Costs are Reasonable

PCF then incoherently also disputes the reasonableness of overhead hardening costs, despite the fact that SDG&E's distribution overhead hardening efforts have been in place since

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[111] SDG&E 2023-2025 Wildfire Mitigation Plan (February 13, 2023), available at www.sdge.com/2023-wildfire-mitigation-plan.

[112] Ex. SDG&E-T2-01R (Woldemariam) at 50.

[113] *Id.*

long before 2019 and the practices—initially included in SDG&E's FiRM, PRiME, and WiSE initiatives—have been found reasonable by the Commission in D.19-09-051.

PCF also incorrectly characterizes this as merely a wood-to-steel program. For clarity, this mitigation program also includes replacing bare conductor, wood crossarms, guys, anchors, and insulators to meet more stringent requirements and extreme wind conditions. PCF also misrepresents the source document and the rationale behind SDG&E's steel pole selection per the 2020 SDG&E Wildfire Mitigation Plan,

> The new electric lines are designed to withstand working loads under the stress of 85 mph wind speeds, and in some specific cases, up to 111 mph, based on known local conditions. […] Steel poles are a more reliable construction material, giving more confidence in their designed strength, and are more resilient should a fire occur, leading to faster restoration times. These new steel pole facilities are being installed in conjunction with the application of higher strength conductors and increased spacing between lines, exceeding the requirements of GO 95, and resulting in a decrease in the likelihood of energized lines coming into contact with one another or arcing after being struck by flying debris.[114]

PCF's testimony lacks a comprehensive understanding of standard overhead line design principles. Steel poles and wood structures come in a variety of heights and sizes and are selected based on topological and electrical requirements. Poles are not assigned a wind rating, as the testimony suggests, rather structures are selected or designed based on structural load analysis. Most wood poles being replaced were designed and built before 2009 and were not selected to meet SDG&E's more recent loading standards of extreme wind (i.e., 85 mph or 111 mph), rather they were designed to meet light loading (i.e., 56 mph wind) if below 3,000 feet of elevation or heavy loading condition (i.e., 48 mph wind with ½ inch radial ice) if above 3,000 feet of elevation, as defined in GO 95.

The loads on individual structures vary significantly. Span length and wire selection make up 75-95% of the load, wind makes up 5-15% of the structure load, and unbalanced vertical loads and P-Delta loads make up the remainder.[115]

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[114] SDG&E's 2020 Wildfire Mitigation Plan (February 7, 2020), Section 5.3.3.17.1 at 86.

[115] *See* U.S. Department of Agriculture, Design Manual for High Voltage Transmission Lines, 2015 Bulletin 1724E-200, available at https://www.rd.usda.gov/sites/default/files/UEP_Bulletin_1724E-200.pdf.

PCF also claims wood poles are as resilient to wind as steel poles but that fails to account for the degradation of wood poles over time.[116] Due to the difference in material, steel poles are more resilient in high wind conditions than wood poles, over the life of the pole. Additionally, the power line system includes not just poles but crossarms, wires, and other equipment. When coupled with steel poles, this system is more wind and fire resilient. Wood poles and crossarms are also susceptible to woodpecker damage whereas steel poles and fiberglass arms are not, which is a prevalent issue in our wood areas and at higher elevations.

Expanded spacing is also a key component of SDG&E's fire-hardening, which often necessitates taller structures. Steel poles offer significant advantages in accommodating the larger height and groundline moment requirements for these fire-hardening projects as wind forces can exceed 4 times that of the original design criteria.

PCF also improperly relies on SDG&E's Safety Performance Metrics as a measurement of the risk reduction of distribution hardening. The SPMR data has no bearing on distribution hardening, the "wires down" measurements cited by PCF include SDG&E's entire service territory, not just the HFTD. The number of faults and wire down events in the HFTD has, in fact, trended downward since 2019. SDG&E notes that 2023 was an anomalous year in which the service territory experienced significant winter storms as well as a tropical storm, which increased the total number of wires down. These events, however, posed no wildfire risk as weather conditions were not conducive to wildfire.

[116] Ex. PCF-41 (Powers) at 11.

Figure JW-5: Outages due to Wires Down, HFTD v. non HFTD.

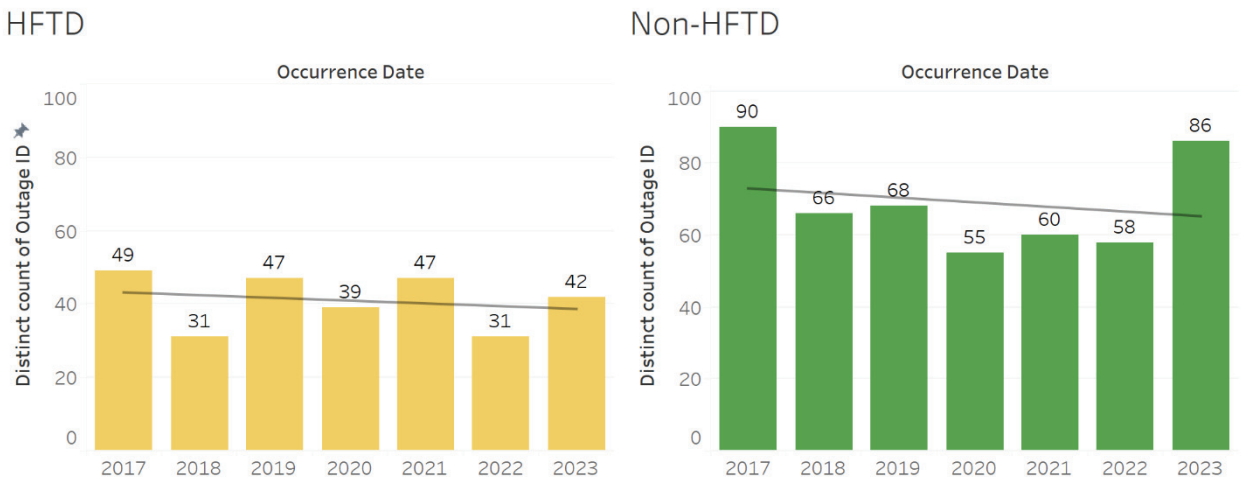
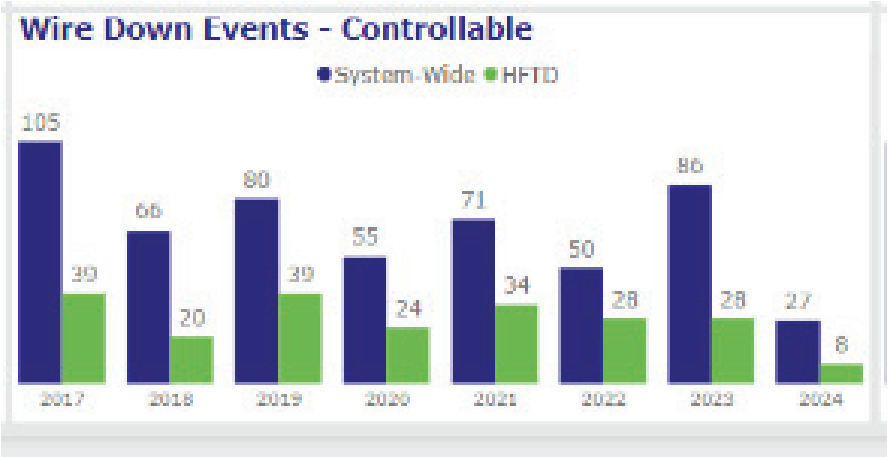


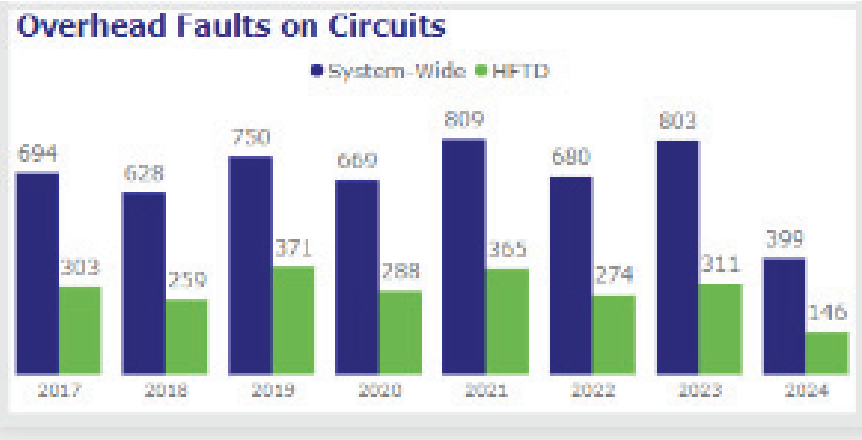
Figure JW-6: Wire Down Events HFTD (Controllable)[117]



[117] Controllable indicates wires down related to SDG&E equipment, and excludes Major Event Days and third party contact (i.e., vehicle contacts).

Additionally, the overhead fault rate—also a predictor of ignitions—is down throughout the HFTD.

Figure JW-7: Faults on Circuits



As PCF fails to understand the data behind these programs and their effectiveness, the Commission should disregard their testimony regarding SDG&E's grid hardening programs.

4. Drone Inspections of SDG&E's Distribution Infrastructure Were Reasonable

PCF again demonstrates a lack of understanding of SDG&E's drone program and its cost effectiveness. Drone inspections provide an enhanced view of infrastructure, especially equipment in hard to reach or difficult terrain. SDG&E has extensive data on the effectiveness of its drone inspection programs compared to manual inspections that demonstrates the improved awareness and risk reduction associated with this program, and its cost effectiveness.

SDG&E launched the Drone Investigation Assessment and Repair (DIAR) Program in August 2019 as a pilot program to perform aerial assessments of its distribution poles in Tier 3 of the HFTD. The goal of the pilot program was to investigate how well drones could identify potential damages that could present a fire hazard.

Ten types of issues accounted for 89.4% of the total issues found through the DIAR Program and more than half (71.3%) of the total issues found (in all inspection programs).

- Damaged Arrestor, Insulator, Pole Top Work, and Armor Rod accounted for 39.1% of DIAR issues and 31.2% of the total issues.

- Damaged Crossarms accounted for 10% of the DIAR issues.
- Other issue categories accounted for less than 10% of DIAR issues.

In contrast, the top two issues found through overhead visual inspections (OHVI) were Damaged Poles and Damaged Conductor/Grounding. These issues accounted for 36.84% and 24.44% of the total issues, respectively.

While the primary difference between the DIAR Program and OHVI was the use of drones to provide a view of the top of the pole, there were other differences that contributed to the difference in findings between OHVI and the DIAR Program, including (1) OHVI identified any GO 95 nonconformance, while DIAR inspections only identified potential fire hazards, (2) DIAR inspections included the use of high-resolution imagery that allowed inspectors to zoom, enhance contrast, and manipulate the images to better identify damages that could be difficult or impossible to see from the ground, and (3) a dedicated inspection team was utilized during DIAR inspections to enhance consistency and quality.

Using a chi-squared test to demonstrate the statistical significance of the discrepancy in findings, DIAR inspections were shown to have a wildfire-associated finding rate twice as high as that of OHVI over the same period. The chi-squared test also showed that the discrepancy was due to systematic differences in inspection results and not random fluctuations in the data.

PCF compares the effectiveness of drone inspections over manual inspection programs, including ground-level inspections. It is not a reasonable comparison. When SDG&E performed an analysis of inspections with overlapping dates within 0-180 days, DIAR found on average 51% more issues than were found by manual Corrective Maintenance Program inspections. Thus, SDG&E has more than established the reasonableness and cost-effectiveness of this program—which is not contested by any other party—and the Commission should authorize recovery of associated costs.

5. SDG&E's Generator Programs and Microgrids Reduce PSPS Risk

SDG&E's generator and microgrid programs directly serve to provide customers with resiliency solutions in compliance with Commission directives.[118] PCF's election to simply

[118] *See* D.21-06-034 regarding PSPS Phase III OIR decision on generators.

ignore Commission orders and guidance on these issues, coupled with their bias toward their preferred end game of SPS systems, should lead to their testimony being disregarded.

C. PCF's Contentions Regarding Utility SPS Should be Rejected

The fatal flaw of PCF's continued pursuit of SPS in lieu of other wildfire mitigation efforts is that simply installing SPS systems for residential customers across the HFTD does not comply with SDG&E's obligation to safely operate its electrical infrastructure, and reduce the scale, scope, and frequency of PSPS events.[119] Also PCF completely ignores the businesses, mobile home parks, critical customers, and other customers who do not have the luxury of a roof on which SPS can be installed for $25,000. PCF's SPS solution might mitigate PSPS risk for single-family residential customers, but it would leave tenants, hospitals, police stations, fire stations, and other critical customers in the dark. This does not comport with SDG&E's obligations to its customers, nor does it support the state's electrification goals. To promote electrification, California requires a reliable, resilient grid, not one subject to shutoff at any time.

Additionally, PCF continues to advocate for an alternative that puts the onus and cost burden on the *customer* to install solar on their home. This policy debate and its flaws were addressed in Track 1 of this testimony and should not be relitigated here. But PCF admits that—despite clear requirements that California utilities enhance their infrastructure to promote wildfire safety—the cost of wildfire mitigation should be "borne by the customer."[120] This solution is untenable for the customers in SDG&E's HFTD, who may lack the means or pockets to foot at $25,000 bill. Many of these customers are AFN, from tribal communities, or low-income. Any solution that turns the burden on these customers to find their own wildfire mitigation solutions should be disregarded outright.

VIII. CONCLUSION

My Revised Direct and Rebuttal Testimony meets the burden to establish that the direct costs incurred to support SDG&E's WMP from 2019-2022 are reasonable and should be fully authorized for recovery.

This concludes my rebuttal testimony.

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[119] Pub. Util. Code §8386.

[120] Ex. PCF-41 (Powers) at 20.

APPENDICIES

SDG&E-T2-06 APPENDIX 1: WMP RISK SPEND EFFECIENCIES

WMP Category	WMP Initiative	Estimated Risk Spend Efficiency				Actual 2019-2022 Units
		Territory	Non-HFTD	HFTD Tier 2	HFTD Tier 3	
Risk Assessment & Mapping	Summarized Risk Map	NA	NA	NA	NA	NA
	WRRM and WRRM-Ops	NA	NA	NA	NA	NA
	WiNGS (Planning and Ops)	NA	NA	NA	NA	NA
	Probability of Ignition	NA	NA	NA	NA	NA
Situational Awareness & Forecasting	Advanced Weather Monitoring and Weather Stations	NA	NA	NA	NA	139
	Air Quality Index	NA	NA	NA	NA	8
	Camera Network	NA	NA	NA	NA	12
	Wireless Fault Indicators	NA	371.78	263.75	247.08	2235
	Fire Science & Climate Adaptation	NA	NA	NA	NA	NA
	Fire Potential Index	NA	NA	NA	NA	NA
	High Performing Computing Infrastructure	NA	NA	NA	NA	NA
Grid Design & System Hardening	SCADA Capacitors	NA	409.37	165.61	31.62	123
	Covered Conductor	NA	NA	10.66	17.92	83.1
	Expulsion Fuse Replacements	NA	NA	117.44	411.11	9876
	PSPS Sectionalizing Enhancements	NA	1067.23	1106.66	2166.36	55
	Microgrids	NA	18.07	1.02	203.25	5
	Advanced Protection	NA	NA	NA	178.31	13
	Hotline Clamps	NA	NA	50.44	149.57	7367
	Generator Grant Program	NA	2.81	164.05	211.3	4651
	Generator Assistance Program	NA	388.94	251.42	601.79	2214
	Standby Power Program	NA	NA	25.04	58.09	806
	Strategic Undergrounding	NA	NA	113.77	57.66	109.5
	Distribution Overhead System Hardening	NA	8.11	13.14	18.14	348.8
	Transmission Overhead System Hardening – Distribution Underbuild	NA	NA	14.44	NA	23
	Cleveland National Forest (CNF) MSUP Powerline Replacement	NA	NA	NA	72.93	54.1
	CNF Distribution Underground	NA	NA	NA	21.63	23.1
	CNF Distribution Overhead	NA	NA	NA	22.73	55.2
	Distribution Communications Reliability Improvements	NA	NA	NA	NA	46
	Lightning Arrestor Replacements	NA	NA	35.44	176.05	4499
	Avian Mitigation	NA	0.68	38.64	55.77	973

SDG&E-T2-06 APPENDIX 1: WMP RISK SPEND EFFECIENCIES

Asset Management & Inspections	Detailed Inspections of Distribution	NA	8.56	87.59	68.39	74595
	Detailed Inspections of Transmission	NA	NA	13.3	28.4	6959
	Infrared Inspections of Distribution	NA	NA	9.49	17.17	42409
	Intrusive Pole Inspections	NA	3	37.88	121.13	43867
	HFTD Tier 3 Inspections	NA	.04	55.68	81	50838
	Drone Assessments of Distribution	NA	NA	39.07	52.13	99174
	Circuit Ownership	NA	NA	NA	NA	NA
	Patrol Inspections of Distribution	NA	NA	173.9	255.2	345787
Vegetation Management & Inspections	Fuels Management	NA	NA	9.09	15.04	1798
	Pole Brushing	NA	6.89	57.76	78.18	141150
	LiDAR Inspections of Vegetation around Distribution	NA	NA	NA	NA	737.5
	Vegetation Restoration	NA	NA	NA	NA	NA
Grid Operations & Operating Protocols	Personnel Work Procedures and Training in Conditions of Elevated Fire Risk	NA	NA	118.3	135.33	NA
	Aviation Firefighting Program	NA	NA	54.11	61.21	NA
Data Governance	Centralized Repository for Data	NA	NA	NA	NA	NA
	Documentation and disclosure of Wildfire-Related Data and Algorithms	NA	NA	NA	NA	NA
Resource Allocation & Methodology	Allocation Methodology Development and Application	NA	NA	NA	NA	NA
Emergency Planning & Preparedness	Emergency Management Operations	NA	NA	NA	NA	NA
	Community Outreach, Public Awareness, and Communication Efforts	NA	NA	NA	NA	NA
Stakeholder Cooperation & Community Engagement	Community Engagement	NA	NA	NA	NA	NA
	PSPS Communication Practices	NA	NA	NA	NA	NA

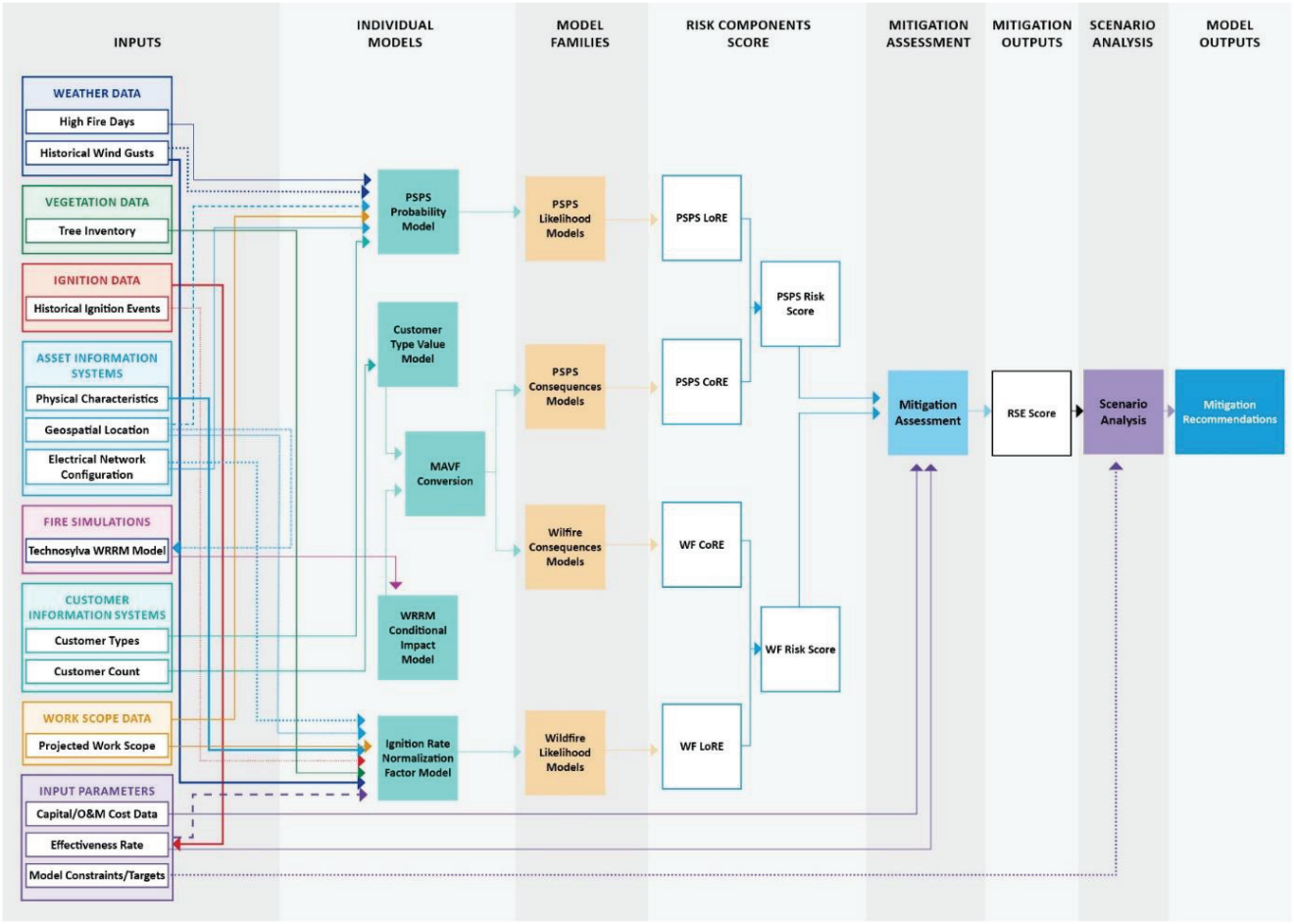
SDG&E-T2-06 APPENDIX 2: CALCULATION OF TOTAL AUTHORIZED PER CAL ADVOCATES CA-05

Work Category - Capital	Cal Adv Direct	Cal Adv Indirect	2019 Authorized	2020 Authorized	2021 Authorized	2022 Authorized	Total Authorized	Incremental
Asset Management & Inspections	126,165	84,493	10,078	11,331	11,695	12,000	45,104	165,554
Data Governance	42,609	-	-	-	-	-	-	42,609
Emergency Planning & Preparedness	6,775	-	3,175	670	688	703	5,236	1,539
Grid Design & System Hardening	1,080,081	-	246,350	94,230	97,185	99,647	537,412	542,669
Grid Operations & Operating Protocols	33,220	-	-	-	-	-	-	33,220
Risk Assessment and Mapping	1,830	-	-	-	-	-	-	1,830
Situational Awareness & Forecasting	15,745	-	-	-	-	-	-	15,745
Stakeholder Cooperation & Comm. Engagement	(671)	-	5,995	2,262	2,335	2,395	12,987	(13,658)
Totals	**1,305,755**	**84,493**	**265,598**	**108,493**	**111,903**	**114,745**	600,739	**789,509**

Work Category - O&M	Cal Adv Direct	Cal Adv Indirect	2019 Authorized	2020 Authorized	2021 Authorized	2022 Authorized	Total Authorized	Incremental
Asset Management & Inspections	134,493	3,603	-	-	-	-	-	138,096
Data Governance	801	(72)	2,373	2,436	2,435	2,343	9,587	(8,858)
Emergency Planning & Preparedness	34,162	(38)	5,307	5,448	5,414	5,134	21,303	12,822
Grid Design & System Hardening	70,673	622	12,197	12,519	12,828	13,083	50,627	20,668
Grid Operations & Operating Protocols	33,962	64	3,988	4,093	4,194	4,277	16,552	17,474
Resource Allocation Methodology	8,716	(951)	8,477	8,700	9,145	9,854	36,176	(28,410)
Risk Assessment and Mapping	1,114	(87)	485	498	510	520	2,013	(986)
Situational Awareness & Forecasting	8,185	(671)	1,261	1,294	1,326	1,353	5,234	2,280
Stakeholder Cooperation & Community Engagement	(1,780)	(580)	1,863	1,912	1,959	1,998	7,732	(10,091)
Vegetation Management & Inspections	17,929	1,079	264	271	278	283	1,096	17,912
Totals	**308,257**	**2,970**	**36,215**	**37,171**	**38,089**	**38,845**	150,320	**160,907**

Source: Cal Advocates Response to SDG&E Data Request 1 and associated workpapers.

SDG&E-T2-06 APPENDIX 3: WINGS MODEL PROCESS



Source: SDG&E 2023-2025 Wildfire Mitigation Plan