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BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Implement Electric Utility Wildfire Mitigation Plans Pursuant to Senate Bill 901 (2018).	**R.18-10-007** (Issued October 25, 2018)

REPLY COMMENTS ON THE WILDFIRE MITIGATION PLAN OF PACIFIC GAS AND ELECTRIC COMPANY (U 39 E)

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INTRODUCTION

In response to the catastrophic wildfires that have devastated California in recent years, the Legislature enacted Senate Bill ("SB") 901, which includes numerous provisions to mitigate future wildfires and protect Californians. One provision, which modified Public Utilities Code Section 8386,[1] requires electrical corporations to file annual wildfire mitigation plans and to submit these plans to the California Public Utilities Commission ("Commission") for review and approval. These plans are intended to "minimize the risk of catastrophic wildfire posed by . . . electrical lines and equipment."[2] Section 8386 includes a detailed list of the required elements for the electrical corporations' wildfire mitigation plans, as well as the timing and process for Commission review, approval, and compliance monitoring. The Commission initiated this proceeding to implement Section 8386 and review and approve the wildfire mitigation plans.

Pacific Gas and Electric Company ("PG&E") welcomes this opportunity to present to the Commission, parties, and the public its 2019 Wildfire Safety Plan ("Plan"). PG&E takes seriously the critical role that it plays in preventing wildfires caused by electrical equipment in Northern California. PG&E's Plan, submitted February 6, 2019, provides extensive detail about what PG&E proposes to do in 2019 in advance of the wildfire season, during the wildfire season, and in subsequent years to mitigate the risk of wildfires. PG&E's Plan includes a list of each of the statutory requirements adopted by the Legislature, how PG&E proposes to address these requirements, and the enhanced, accelerated, and new programs that PG&E is and will continue to implement to prevent wildfires in 2019 and beyond.[3] And while this proceeding is critical, PG&E has not waited to act. PG&E has proactively proceeded with implementing the Plan to reduce the risks of a wildfire season that is just months away.

This proceeding provides the opportunity for all parties to engage in a collaborative effort to find the best solutions to address the growing threat of wildfires that affects all Californians. PG&E has approached this proceeding as an opportunity to work together in a short time frame to develop the best possible approach to preventing wildfires. To that end, after filing its Plan, PG&E worked intensively to answer numerous questions about each aspect of its proposal. PG&E participated in three (3) days of workshops and technical conferences, answered approximately 470 data requests (counting subparts), which were posted on PG&E's website,

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[1] All statutory references are to the California Public Utilities Code ("PUC"), unless otherwise noted.

[2] PUC § 8386(a).

[3] *See* PG&E Plan at pp. 11-12, Table 2.

produced approximately 2,684 pages of material and documents plus 153 excel worksheets, and provided 52 pages of material and documents responding to two (2) requests for additional information from the Administrative Law Judges. PG&E has made every effort to provide all of the information it has available and to be open and transparent.

No party has disputed that PG&E's Plan addresses each of the requirements adopted by the Legislature in SB 901. Moreover, many of PG&E's proposals are supported by the parties as important steps to mitigate wildfire risk. Some parties do dispute aspects of PG&E's Plan; their concerns are addressed below. Overall, most parties appear to support all or a majority of PG&E's proposals. PG&E believes that its proposals are well supported and will reduce the risk of wildfires in the 2019 wildfire season, which is imminent. PG&E urges the Commission to approve its Plan.

Finally, there are two issues that need to be briefly addressed up front. First, neither the Legislature nor the Commission intended the wildfire mitigation plans to be comprehensive multi-year programs that would be litigated over months or years. The Legislature expressly intended the plans to be made annually and with urgency, so that the Commission, parties, and utilities could act quickly while also gaining experience and learning lessons that could be incorporated into future annual plans. As President Picker stated at the first pre-hearing conference, developing and improving plans is an iterative process and will continue to improve year after year. PG&E's initial Plan is primarily focused on its 2019 efforts. While there are aspects of the Plan that lay out a longer-term vision, PG&E understands that these aspects may change as we learn from our experience and our collaboration with customers, communities, and industry experts. In this proceeding the Commission should focus primarily on the proposals to be implemented in 2019 to address this year's fire season, recognizing that longer-term aspects of the wildfire mitigation plans can be addressed in future, annual proceedings.

Second, many parties focus their comments on cost recovery and the meaning of Plan approval. These are important issues, but we cannot lose sight of what matters most. The primary issue in this proceeding is not cost recovery or the legal impact of approving a specific utility's plan. What matters in this proceeding is that the parties work together to come up with immediate and concrete proposals to address wildfire risks that are imminent. We are committed to this effort and have put forward proposals that we believe will best address those risks. The remainder of this brief is organized using the common outline agreed to by the parties.

1. Meaning of Plan Approval

1.1 Implementation of the approved programs is reasonable.

SB 901 requires electrical corporations (e.g., utilities) to operate their facilities in accordance with the wildfire mitigation plans approved by the Commission. Under SB 901, each utility must annually prepare and submit its plan to the Commission.[4] The Commission then reviews and approves plans, and "oversee[s] compliance with the plans."[5] To accomplish this oversight, the Commission conducts an annual review of each utility's compliance with its respective plan.[6] As part of the Commission's review, an independent evaluator under the direction of the Safety and Enforcement Division ("SED") will assess compliance including "whether the electrical corporation failed to fund any activities included in the plan."[7] The Commission can assess penalties for failure to "substantially comply with its plan."[8] Approval of a plan by the Commission therefore creates compliance obligations on the part of the utility. Therefore, the utilities' activities to execute the plans must be deemed reasonable if they are in substantial compliance with the approved plans, and the utilities must be allowed recovery of just and reasonable costs to implement those plans. To do otherwise would constitute an unfunded mandate.

Notwithstanding these statutory requirements, several parties argue that approved plans should provide only a "framework" or "guidelines" for utility behavior. The Utility Reform Network ("TURN"), for example, analogizes approval of the Plans to approval of the Smart Grid Development Plans ("SGDPs"), arguing that the directive to develop the SGDPs came from the Legislature, but approval was guidance, not a finding of reasonableness of any specific project. The SGDP legislation, however, did not include auditing and penalties for non-compliance with the SGDPs; approval of the SGDPs itself constituted compliance. The California Large Energy Consumers Association ("CLECA") also argues that the Commission previously refused to "pre-bless" PG&E's plans to implement the safety recommendations in the Safety Investigation.[9]

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[4] PUC § 8386(b).
[5] *Id.* § 8386(b).
[6] *Id*. § 8386(h).
[7] *Id.* § 8386(h)(2)(B)(i).
[8] *Id*. § 8386.1.
[9] CLECA Comments at p. 6-7.

But, in that proceeding, PG&E was not bound to a specific plan or subject to penalties for failure to implement it.[10]

In contrast, here the utilities may be penalized for failure to substantially comply with approved plans. The plans cannot be both a mere "framework" that utilities may later be denied cost recovery for implementing and, at the same time, expose the utilities to potential penalties for failing to implement the plans. This Catch-22 is intrinsically unjust and would discourage utilities from submitting plans with aggressive and innovative wildfire risk mitigation measures, and instead would encourage them to propose only the bare minimum.

TURN argues that Section 8386(g) requires consideration in the General Rate Case ("GRC") of whether the cost of implementing each plan is just and reasonable, meaning that approval cannot find that any specific project is reasonable.[11] According to TURN, the Commission must determine in the GRC: (1) whether each program is necessary, reasonable in scope and pace, and otherwise cost-effective; and (2) if so, whether the costs to perform the scope of work are just and reasonable. But seeking cost recovery for implementation of the wildfire mitigation plans deviates in a critical aspect from the usual GRC, which relies upon historical test years to determine forecasts of **future** costs. Here the utilities have presented their proposed plans to the Commission for approval and must implement plans upon approval. Thus, the utilities will incur substantial costs – subject to penalties for noncompliance – before reasonableness can be assessed after-the-fact in the GRC. This can be reconciled through separating the two steps: The Commission decides reasonableness of the proposed programs through approval of the plans and reasonableness of the costs in a GRC.

The California Environmental Justice Alliance ("CEJA") agrees that SB 901 requires utilities to follow their approved plans, but suggests that the Commission limit approval and metrics to projects necessary to meet current requirements or demonstrated in practice to be effective for mitigating wildfire risk.[12] CEJA argues that the plans should largely implement existing requirements such as General Order ("GO") 95, which "delineate the minimum requirements utilities should meet to mitigate the potential of catastrophic wildfires."[13] But if compliance with existing requirements were adequate to combat the new and increasing risk of

[10] Decision ("D.") 18-11-050 at p. 4.
[11] TURN Comments at pp. 5-7.
[12] CEJA Comments at p. 4.
[13] CEJA Comments at pp. 4-5.

catastrophic wildfire in California, there would have been no need for the Legislature to enact SB 901.

TURN argues that the targets within the plans are too vague and unspecific to qualify as compliance requirements.[14] PG&E disagrees. The utilities' plans included tangible, quantifiable, and auditable targets. For example, PG&E's Plan includes targets to inspect 685,000 distribution poles, 50,000 transmission structures, and 200 substations; to complete 150 miles of system hardening; and to perform 2,450 circuit miles of enhanced vegetation management in High Fire-Threat District ("HFTD") areas.

Parties also argue that the process has not allowed sufficient time to review the plans or develop a record. Setting aside the approximately 470 data requests that PG&E answered, most within three business days, and the documents cited in PG&E's Plan, all of which are posted online, the Legislature was aware of the timing issues when it enacted SB 901. Recognizing the urgent need to reduce the risks of wildfire facing all of California, the Legislature chose to impose these deadlines on the utilities, the Commission, and interested parties.

The Office of Safety Advocates ("OSA") and the Energy Producers and Users Coalition ("EPUC") raise concerns that strict adherence to the scope of Commission-approved plans will prevent maximization of safety risk reductions by discouraging post-approval changes in light of new data.[15] PG&E agrees with these parties that a degree of flexibility is important to allow continuous improvement of the plans, especially in this early stage of the process. Therefore, divergence from the plans should be allowed, subject to reasonableness review. The plans submitted by the utilities include proposed programs and mitigations to address wildfire risk, as well as targets associated with these programs. A utility's approved plan may include exceptions to the proposed mitigations and targets. For example, PG&E's Plan includes 2019 targets, but also specified the execution risks associated with those targets, which may result in targets not being met or revisions to work plans. As PG&E explained in its Plan, compliance should be based on a reasonable manager standard, understanding that events outside of PG&E's control may impact its ability to comply with all of the mitigations and targets outlined in the Plan.[16]

In addition, as mitigations are implemented during a year, a utility may determine that there is a more effective approach to address certain risks. The utility should be able to present

[14] TURN Comments at p. 9-10.

[15] OSA Comments at p. 2-3; EPUC Comments at p. 9.

[16] PG&E Plan at p. 39, Table 9 and pp. 132-133.

evidence during the compliance review that any deviation was reasonable and prudent based on information obtained after the Plan was approved or changed circumstances. The utility would have the burden to demonstrate that its actions outside of the Plan were reasonable and prudent. Strict adherence to a plan without flexibility could necessitate continuing with less efficient measures despite increased knowledge or experience that would allow for improvements. The Commission's approval of the plans should expressly acknowledge that the utilities retain discretion to reprioritize work to address changing conditions or as a result of external factors beyond their control. This is particularly important in the early years of the plans as the utilities substantially change their equipment in the high fire threat districts.

Programs should be approved as a part of the Commission's review of a utility's plan. This review should include consideration of cost estimates for the program to determine if the plan is reasonable. Once the plan is approved, the specific program costs that are incremental to costs already being recovered through other mechanisms will be tracked in a memorandum account,[17] and the reasonableness of those incremental costs may be addressed in the GRC.

1.2 The Commission should authorize a new memorandum account with Plan approval.

With approval of the plans, the Commission should direct the utilities to establish memorandum accounts to track costs incurred to implement the approved plans.[18] SB 901 provides for two memorandum accounts to record costs incurred to mitigate wildfire risk. The first memorandum account is required to be established upon approval of a utility's plan "to track costs incurred to implement the plan."[19] Upon establishment, PG&E would record costs (not included in rates) for activities approved in the Plan to this new Wildfire Plan Memorandum Account ("WPMA"). The costs recorded in the WPMA will be considered in PG&E's next GRC.[20] The Commission, however, also retains authority to approve a forecast of these costs outside of a GRC to ensure that the utilities have sufficient revenues to conduct the work. In light of the multi-year intervals between GRCs and the likely substantial costs to implement the annual plans, the Commission should also authorize utilities to seek interim cost recovery via

[17] PUC § 8386(e).
[18] *Id.* § 8386(e).
[19] *Id.*
[20] *Id.* § 8386(g).

application, with costs subject to refund upon reasonableness review in the GRC.[21] The Commission should not adopt inflexible cost recovery rules that limit cost recovery to triennial GRC proceedings as this may slow the pace of the utility's critical fire safety work.

The second memorandum account is intended to "track costs incurred for fire risk mitigation that are not otherwise covered in the electrical corporation's revenue requirement."[22] On March 12, 2019, the Commission approved PG&E's second memorandum account, the Fire Risk Mitigation Memorandum Account ("FRMMA"), effective January 1, 2019, as compliant with Section 8386(j). Before submitting its Plan, PG&E began significantly enhancing its wildfire risk mitigation efforts, for which PG&E is recording costs to the FRMMA. Upon approval of the WPMA in conjunction with approval of PG&E's Plan, PG&E would stop recording costs for work approved in its Plan to the FRMMA and would instead record costs not included in rates to the new WPMA. PG&E would continue to record the costs of wildfire mitigation activities, if any, not included in the approved Plan to FRMMA. This allows utilities to continue to innovate and improve wildfire mitigation measures in between plan approval. PG&E anticipates that the recovery of costs recorded to the FRMMA would occur through future applications at which time the Commission would review the costs for reasonableness.

The Commission should direct the utilities to file a Tier 1 Advice Letter to implement a WPMA within five business days of issuance of the decision approving the plans to record the costs of the approved plans, effective as of the date of approval of the plans.

2. Overall Objectives and Strategies

The objective of PG&E's Plan is straightforward – to prevent electrical lines and equipment causing wildfires that have the potential to become catastrophic wildfires. Section 2 of the Plan provides an overview and Table 3 of PG&E's Plan identifies each program and strategy to achieve this objective, as well the timeframe in which these programs will be implemented. Consistent with comments from other parties, most of PG&E's programs are near-term efforts focused on 2019.[23] As Table 3 demonstrates, many of PG&E's programs are either in place or in process and will be completed before the upcoming 2019 wildfire season or the

[21] While the review of costs to implement plans should ordinarily occur in connection with GRCs, the Commission has acknowledged its authority to approve cost recovery for wildfire mitigations outside of the GRC. In D.19-01-019, the Commission determined that while the GRC is the preferred venue for recovery of wildfire mitigation costs, it has authority to approve such costs outside of a GRC in a cost recovery application filed by a utility. *See* D.19-01-019 at p. 7.

[22] PUC § 8386(j)

[23] *See e.g.* Public Advocates Office ("Cal Advocates") Comments at pp. 4-5; TURN Comments at p. 13.

next Plan filing. However, as TURN acknowledges in its comments, some objectives are necessarily longer-term, such as PG&E's comprehensive system hardening program, which require a multi-year approach given the scope and scale of the project.[24]

OSA does not raise concerns about PG&E's objectives, but suggests that PG&E take into account wind speeds in its enhanced inspections and system hardening.[25] Mussey Grade Road Alliance ("MGRA") makes similar comments regarding how meteorological and other factors, referred to by MGRA as known local conditions, should impact PG&E's proposals.[26] PG&E agrees that wind speeds and topography are some of the important factors to consider in its programs. This type of information is already included in, for example, PG&E's proposed pole loading and replacement program. More generally, PG&E's Plan provides that its system hardening proposal will "evaluate the design considering local conditions . . .."[27] PG&E is also accessing local conditions for its operational practices, such as its Wildfire Reclosing Disable program which "is adjusted daily as necessary based on the fire index rating for specific areas."[28] PG&E's Plan does not describe every local condition for each aspect of its proposed programs; this massive amount of information would simply be impracticable for a filing such as this. However, consistent with OSA's and MGRA's comments, PG&E's Plan describes generally how it has and will consider local conditions.

MGRA also discusses the utilities' previous Fire Prevention Plan ("FPP") filings and correlating the wildfire mitigation plans to previous FPPs.[29] PG&E provided this correlation in Table 9 of its Plan and MGRA seemed satisfied with this approach. The Joint Local Governments also focus on previous FPP, incorrectly asserting that a "side-by-side" comparison of the FPPs and the Plan show that many measures are "substantially similar."[30] For the programs and strategies identified in Table 9, more than 70 percent were either not included in the FPPs or the program proposed in the Plan is not included in the current FPP scope.[31] The

[24] TURN Comments at p. 13.

[25] OSA Comments at p. 5.

[26] MGRA Comments at pp. 8-9. MGRA also discussed sectionalizing, the implementation of Supervisory Control and Data Acquisition ("SCADA"), and weather stations in this section of its brief (*id.* at pp. 9-12), and generally expressed support for PG&E's proposals in those areas.

[27] *See* PG&E Plan at p. 61 (system hardening) and p. 65 (pole loading calculations factor in wind speeds).

[28] PG&E Plan at p. 48.

[29] MGRA Comments at pp. 13-14.

[30] Joint Local Governments Comments at p. 3.

[31] PG&E Plan at pp. 39-45.

Joint Local Governments then list a series of comparisons between the FPPs and the Plan, but, as even these parties concede, in many cases the Plan significantly enhances activities such as inspections so that a comparison is apples to oranges.[32]

The Joint Local Governments conclude that the Plan should not be approved until PG&E quantifies "the effectiveness of [FPP] measures and correlates the component of that plan to the [Plan]."[33] Given the urgency expressed by the Legislature and the upcoming wildfire season, there is no need to delay approving the Plan while waiting for this correlation. Nor would this correlation provide much benefit given the differences between the FPPs and the Plan – an apples to oranges correlation. PG&E does agree with the Joint Local Governments' proposal that in future Plan filings, the effectiveness of current Plan measures be evaluated.

Cal Advocates notes that some of PG&E's strategies are multi-year efforts and suggests calling these programs "pilots" that will be re-examined in future annual filings.[34] PG&E agrees that its proposed programs should be evaluated in future Plan filings. While PG&E believes that it has made the best proposals based on available information, it has also proposed extensive plan performance evaluation to inform future Plans.[35]

In his comments, Mr. Abrams notes that the utilities should have "an overarching measurable goal that drives accountability."[36] This is exactly what PG&E's Plan does. There is a single goal – the reduction of catastrophic wildfire risk. This goal is measured both by targets, which are primarily related to the proposed programs and strategies, and indicators, which are events such as the number of wire down events or ignitions.[37] These targets and indicators are described in more detail in Section 6 below. Mr. Abrams also raises issues concerning PG&E's risk analysis,[38] which are addressed in Section 3 below. Finally, Mr. Abrams criticizes PG&E claiming that it lacks a sense of urgency.[39] This claim is unfounded. PG&E is expending extraordinary effort to mitigate wildfire risk. Even a cursory review of Table 1 in PG&E's Plan shows the substantial commitment and effort made by PG&E and Table 3 demonstrates the

[32] Joint Local Governments Comments at p. 4.
[33] Joint Local Governments Comments at p. 6.
[34] Cal Advocates Comments at pp. 5-6.
[35] PG&E Plan at pp. 131-140 (describing Plan evaluation and internal and external review).
[36] Abrams Comments at p. 7.
[37] PG&E Plan at pp. 133-136.
[38] Abrams Comments at p. 8.
[39] Abrams Comments at pp. 11, 13.

speed with which it is acting, with more than 65 percent of the programs or strategies either already in place, to be completed before the wildfire season, or to be completed before the next Plan filing. Many other programs that are multi-year in nature have already been started.

3. Risk Analysis and Risk Drivers

PG&E's Plan describes its methodology to identify and evaluate wildfire risks and how the Plan addresses wildfire risks, including wildfire mitigation risk assessments such as PG&E's electric circuit prioritization based on wildfire risk, wildfire evaluation study, and use of probabilistic assessments. PG&E submitted a robust and sophisticated analysis that expanded upon its 2017 Risk Assessment and Mitigation Phase ("RAMP") Report, as explained in PG&E's 2020 GRC. Furthermore, PG&E's risk analysis incorporated engineering failure analysis and detailed assessments of the likelihood that specific mitigations could have reduced the potential risk of particular actual incidents.

EPUC argues that the submitted plans do not meet RAMP standards for risk assessment and mitigation,[40] and Cal Advocates argues that PG&E's programs lack sufficient information regarding risk reduction and program effectiveness.[41] EPUC also argues that SB 901 "requires that WMPs be at least as rigorous as RAMP filings, [so] the WMP should have included RSEs and rankings."[42] Section 8386(c)(10) states that the plans must include "[a] list that identifies, describes, and prioritizes all wildfire risks, and drivers for those risks, . . . including all relevant wildfire risk and risk mitigation information that is part of Safety Model Assessment Proceeding and Risk Assessment Mitigation Phase filings." SB 901 does not require the utilities to re-perform the S-MAP and RAMP analyses annually with each plan, but rather to include relevant wildfire risk and risk mitigation information from prior filings. In its Plan, PG&E incorporated the updated RAMP analysis in the GRC risk model, which also included calculated Risk Spend Efficiency values for mitigations in the Plan.[43] Further, as explained in Section 6, below, PG&E provided available information on many of these topics in Section 3 of its Plan and in discovery.

Green Power Institute ("GPI") argues that the utilities need to take a more granular approach to fire-risk assessment beyond the CAL FIRE forestlands assessment.[44] PG&E agrees

[40] EPUC Comments at pp. 12-13.
[41] Cal Advocates Comments at pp. 8-9.
[42] EPUC Comments at p. 14.
[43] PG&E Plan at pp. 31-32.
[44] GPI Comments at p. 3.

that a more granular assessment is important, which is why its assessment starts with the Commission's HFTD map, further refined by consideration of wind-related outage data and CPUC-Reportable Ignition Data to gain further insights into the HFTD areas of highest concern.[45] PG&E also considered topographic and climatological risks by evaluating fire risk based on the Fire Danger Climate Zones.[46] PG&E further refined the assessment by analyzing individual circuit risks based upon wildfire spread, which considers local conditions such as fuel type, fuel density, weather, and wind; consequences, which consider population density, structure density, and negative impacts to natural resources; and egress risks.[47]

The Joint Local Governments suggest that PG&E include specific factors in the evacuation study.[48] PG&E will consider the suggestion, but at this stage of the study process, PG&E is unable to confirm whether these factors will be included. Moreover, PG&E cautions against requiring a recitation of every factor that informs the evacuation methodology in future plans as the Joint Local Governments suggest. Each utility must file a wildfire mitigation plan every year – it would be onerous and inefficient to identify every factor of every step of every analysis in each Plan. Nor is it necessary. The parties had substantial discovery in this process, and PG&E expects they will have similar opportunities for future plans.

CEJA argues that the utilities should go beyond "biophysical risk" and consider socioeconomic factors that make certain populations more vulnerable to impacts of wildfires.[49] PG&E welcomes specific and constructive suggestions on how to incorporate socioeconomic factors or vulnerable population information into future plans.[50]

Mr. Abrams raises a number of concerns regarding the risk analysis in PG&E's Plan. First, Mr. Abrams suggests that PG&E's collaboration with UCLA should be stricken as immaterial, although there is no reason for doing so.[51] PG&E is partnering with this organization to leverage the nuclear industry's rigorous modeling to develop a model for wildfire

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[45] PG&E Plan at p. 25.

[46] PG&E Plan at pp. 29-31.

[47] PG&E Plan at pp. 32-34.

[48] Joint Local Governments Comments at p. 7.

[49] CEJA Comments at pp. 7-8.

[50] Contrary to CEJA's assertions, however, the Legislature did not require that the Plans include those risks in the Plan. SB 901 states that the electrical corporation must include a list of "all wildfire risks" – not all "risks related to wildfires," as CEJA reformulates the requirement. See PUC § 8386(c)(10).

[51] Abrams Comments at p. 8.

risks for its electrical assets within HFTD areas.[52] Once developed, the model will provide the independent assessment Mr. Abrams wants incorporated into PG&E's risk management and modelling processes. Mr. Abrams also argues that PG&E's use of actual fire ignition data reported to the Commission as a basis to assess the risk event frequency for HFTD areas is not scientifically sound,[53] but using empirical data to assess potential mitigation on actual fire ignitions provides a real-world risk analysis. Mr. Abrams mistakenly asserts that PG&E relies upon "outdated" Fire Index Area ("FIA") indices.[54] PG&E does not use the FIA indices, but only the FIA geographical locations. In collaboration with CAL FIRE, the National Weather Service, and others, PG&E Meteorology developed a sophisticated Fire Potential Index using real time data and PG&E's damage prediction model to forecast highly granular fire danger ratings for the FIA geographic locations within the HFTD areas.[55] Finally, Mr. Abrams criticizes PG&E's use of the bowtie methodology,[56] but the methods included in PG&E's SB 901 filing are the same methodologies and approaches adopted by the Commission.[57] Contrary to Mr. Abrams' comment,[58] in its analysis of wildfire risk, PG&E has gone beyond the use of probabilistic quantitative methods and has incorporated engineering failure mode analysis to determine which actions best mitigate asset failure ignitions.[59]

4. Wildfire Prevention Strategy and Programs

In this section, PG&E uses the common briefing outline to address the strategies and programs proposed in its Plan. In his comments, Mr. Abrams included proposals for additional programs and strategies. These proposals are address in Section 4.7 below.

4.1 Operational Practices

PG&E's Plan identifies four operational practices that will be implemented for the 2019 wildfire season to address wildfire risk including recloser operations, personnel work procedures,

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[52] PG&E Plan at p. 35.

[53] Abrams Comments at p. 9; PG&E Plan at pp. 25-26.

[54] Abrams Comment at p. 9.

[55] PG&E Plan at pp. 29-31 and Attachment A.

[56] Abrams Comments at p. 9.

[57] *See, e.g.,* D.18-12-014.

[58] Abrams Comments at p. 8 ("The primary flaw is that this risk analysis is not based on risk ratios and probabilistic risk assessments").

[59] Mr. Abrams, whose house burned down in the Tubbs fire, also criticizes PG&E for putting lines back in the same location after the fire. Abrams Comments at p. 10. This is not a lack of foresight or risk mitigation as argued by Mr. Abrams, but the need to restore power to customers as quickly as possible – which undergrounding would not allow.

PG&E's Safety and Infrastructure Protection Teams, and aviation resources.[60] Few parties commented on PG&E's operational practices and, those that did, generally did not oppose these proposals. For example, TURN concluded that "the utilities should prioritize the installation of protection schemes and should use recloser disabling (either automatically or manually) liberally in 2019," and the Joint Local Governments support a similar approach.[61] This is exactly what PG&E proposed.

There were, however, some comments on PG&E's operational practices that require a brief response. The Small Business Utility Advocates ("SBUA") advocates undergrounding instead of using reclosers.[62] However, as even SBUA acknowledges, undergrounding requires "significant upfront investment" and time and certainly cannot be done in advance of the 2019 fire season. More importantly, SBUA misunderstands PG&E's program which actually disables many reclosers on a daily basis depending on conditions.[63]

Cal Advocates expresses concern about a statement that PG&E made in discovery related to the evaluation of new recloser devices.[64] However, this data request simply refers to unspecified potential changes in Tier 2 and Tier 3 HFTD boundaries in the future and how PG&E would evaluate its recloser program if this occurs; the data request does not address PG&E's 2019 operational practices which are at issue here. Trying to determine how to best evaluate potential changes to HFTD areas by the Commission at some unspecified future time is certainly beyond the scope of issues in this proceeding.

CEJA's comments on Section 4.1 are exclusively focused on PSPS.[65] These issues are addressed below in Section 4.6. Finally, the Joint Local Governments generally support PG&E's protection team (or SIPT) proposal, but have some questions regarding how the SIPT will interact with local agencies during an emergency.[66] PG&E's Plan provides substantial detail about SIPT staffing, equipment, and activities during an emergency.[67] However, every possible emergency scenario cannot be described, nor does it make sense to specify at this point what

[60] PG&E Plan at pp. 46-51.
[61] TURN Comments at p. 27; Joint Local Governments Comments at p. 7.
[62] SBUA Comments at p. 5.
[63] PG&E Plan at pp. 47-48.
[64] Cal Advocates Comments at p. 11.
[65] CEJA Comments at pp. 11-14.
[66] Joint Local Governments Comments at pp. 8-9.
[67] PG&E Plan at pp. 50-51.

authority local agencies will and will not have over the SIPT effort in specific circumstances. This will, of necessity, vary based on the specific emergency circumstances. PG&E has committed that through its Wildfire Safety Operations Center ("WSOC"), it will coordinate all emergency response efforts, prioritizing the work that is most important to that specific emergency. PG&E agrees with the Joint Local Governments that in future Plans, the activities of the SIPT under the current Plan should be evaluated and revised, if necessary.

4.2 Wildfire Safety Inspection Programs

In the Plan, PG&E explains that it is conducting accelerated inspections of overhead electric facilities in HFTD areas to take a proactive approach to repairing or replacing components that are at-risk of initiating fires. This is in addition to PG&E's routine inspections required under GO 165. Most parties support or do not object to the scope of work under the Wildfire Safety Inspection Programs ("WSIP").

CEJA raises objections to the apparent inefficiency of sending out personnel multiple times to inspect the same equipment.[68] This is why PG&E is performing routine and WSIP inspections simultaneously on the 185,000 distribution structures in the HFTD areas it would have inspected in 2019 under PG&E's routine GO 165 inspection schedule. PG&E is enhancing the existing routine inspections for these 185,000 structures to include the wildfire-specific elements of the WSIP enhanced inspections.[69]

TURN asserts without support that, because PG&E is performing additional inspections, it must have failed in performing its routine GO 165 inspections. TURN argues that GO 165 already requires overhead detailed inspections every five years and repairs of identified "corrective actions"[70] and thus, because the scope of the GO 165 and WSIP inspections appear to overlap, PG&E's GO 165 inspections must have been inadequate. TURN concludes that the Commission will need to "closely evaluate this issue if and when [PG&E] seeks recovery of these costs in memorandum accounts."[71] TURN misapprehends the nature and purpose of the WSIP inspections compared to the GO 165 inspections. In the decision adopting GO 165, the Commission explained the basis for the GO 165 inspection requirements[72] relying upon a 1995

[68] CEJA Comments at p. 14.
[69] PG&E Plan at p. 56.
[70] TURN Comments at p. 22.
[71] TURN Comments at p. 23.
[72] D.97-03-070 at p. 2 (incorporating D.96-11-021 discussion of criteria for overhead inspections).

study regarding industry practices and engineering standards: "Black and Veatch used survey information to develop standards regarded as 'best in class,' which reflect the most stringent practices in the industry and which we believe are good indicators of practices regarded throughout the industry as more than prudent."[73] The Commission stated:

> [B]y leaving utilities more flexibility in the techniques and processes they use, our standards will accommodate cost-effective innovation in inspection technologies, . . . In short, by focusing on acceptable maximum cycles for inspection, we would allow industry practices to continue developing, rather than locking them in.[74]

Thus, the 5-year cycle was adopted in 1997 as the maximum inspection interval consistent with industry practice, while allowing utilities flexibility in their implementation of the requirements. The Commission expected utilities to do more to address safety if warranted: "We have already stated that the standards we adopt today are maximum acceptable lengths for inspection cycles. In certain circumstances, it may be prudent to conduct more frequent inspections to assure high-quality service and safe operations."[75] TURN's argument would dis-incent utilities from doing more, because of the risk for cost disallowances or assumptions of inadequacy.

Given the continued and growing threat of extreme weather and wildfires, as seen in 2017 and 2018, that minimum cycle may no longer be adequate. Fire season is now extended due to prolonged periods of high temperatures, extreme dryness, tinder-dry grass, and record-high winds, increasing the number of wildfires and making them more dangerous. Due to climate change, what used to be safe operation may no longer be enough.

To address this issue, PG&E determined it is important to focus specifically on potential fire ignition. PG&E used a risk-based approach to determine what aspects of its overhead electric system could be single points of failure that could lead to fire ignition. Using that analysis, PG&E has accelerated inspections at areas of higher risk of wildfire and enhanced the criteria for inspections of these components. The focus of these enhanced inspections – ignition sources in high fire threat areas – was not contemplated when GO 165 was adopted.[76]

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[73] D.96-11-021 at pp. 3-4.

[74] *Id.* at p. 7.

[75] D.97-03-070 at p.5.

[76] See, e.g., PG&E Plan at p. 56, 57.

Other parties also commented on the WSIP. CEJA argues that PG&E failed to evaluate effectiveness of past inspections before developing the WSIP,[77] but, as explained above, past inspections did not focus on the specific aspects examined by the WSIP. Cal Advocates states the Commission should monitor if PG&E meets inspection targets and ensure PG&E has sufficiently trained personnel to carry out inspections. PG&E agrees; approval of the Plan will indicate that the inspections are appropriate, and compliance will be monitored. PG&E proposed two targets for WSIP: number of distribution and transmission structures and substations inspected under the enhanced inspection programs within HFTD areas, as well as the tracking the quality of Transmission and Distribution ("T&D") Inspections.[78] PG&E will monitor these targets and expects the Commission and the Independent Evaluator will also assess PG&E's compliance with the Plan.

The Joint Local Governments suggest that the utilities partner with local public works departments to take advantage of their skilled labor.[79] PG&E is open to coordinating efforts with our local government partners to help enhance and improve the safety of our customers and the communities we serve.

4.3 System Hardening

PG&E's Plan describes generally the system hardening work that PG&E is proposing to perform, and then describes in detail proposals for pole materials, pole loading and replacement, conductor replacement, system protection through new devices, and changes to equipment.[80] These efforts are intended to address all of the wildfire risk drivers identified by PG&E.[81] A number of parties support PG&E's proposed system hardening. For example, MGRA notes that the "covered conductor approach seems to be promising to address blown-in vegetation" and the Joint Local Governments "generally support PG&E's system hardening efforts . . .."[82]

OSA recommends that PG&E prioritize the replacement of #6 copper conductor as a part of its system hardening program and accelerating PG&E's system hardening program.[83] Cal Advocates also comments on the scope of PG&E's 2019 program, indicating that it will not have

[77] CEJA Comments at p. 14.
[78] PG&E Plan at p. 133.
[79] Joint Local Governments Comments at 10.
[80] PG&E Plan at pp. 60-69.
[81] PG&E Plan at p. 60, Table 13.
[82] MGRA Comments at p. 18; Joint Local Governments Comments at p. 10.
[83] OSA Comments at pp. 12-14.

a substantial impact on the 2019 wildfire season and requesting a schedule for 2020-2024.[84] As PG&E explained in its Plan, it is working hard to address supply chain and labor issues that could impact the schedule of its system hardening program.[85] PG&E believes that the pace and scope of system hardening will be important to consider in future Plans based on its initial implementation experience in 2019. On Cal Advocates' point, PG&E provided a proposed schedule for 2020-2024 in discovery.[86] While PG&E's 2019 program is limited, this will give it an opportunity to evaluate the costs and performance of the program. With regard to #6 copper conductor, the conductor size is one of the factors that PG&E considers within the risk model to determine what areas to replace. While PG&E agrees that #6 copper is a priority to be replaced, there are also other small conductors that are high risk such as 4 ASCR. It is also important to note that one of the primary purposes of the covered conductor is to mitigate vegetation risk, irrespective of conductor size.

Cal Advocates and CEJA express concerns about the impact of higher impedance faults resulting from covered conductors.[87] While PG&E acknowledges this risk, it is outweighed by the significant reductions in fire ignition risk resulting from covered wires.[88] Moreover, PG&E only proposes to perform 150 miles of system hardening in 2019. This will give PG&E and parties an opportunity to evaluate the performance of covered conductor and determine the scope of its use in future years, which is exactly what CEJA proposes.

Protect Our Communities ("POC") and CEJA express concerns regarding the replacement of wood poles with composite or steel poles.[89] However, POC's arguments are based primarily on information related to San Diego Gas & Electric Company's ("SDG&E") 2007 wildfire, which occurred more than a decade ago, or pleadings/testimony from 2015 regarding a specific SDG&E proposal. POC does not address the information provided by PG&E in its Plan, that the composite poles PG&E proposes to use withstand higher temperatures and are more flame resistant than traditional wood poles.[90] Nor does POC address the fact that the steel poles PG&E proposes to use for transmission facilities reduce the risk of pole failure

[84] Cal Advocates Comments at p. 12.
[85] PG&E Plan at p. 63.
[86] *See* PG&E's Response to Cal Advocates Data Request Set #3, Question 4a.
[87] Cal Advocates Comments at p. 12; CEJA Comments at p. 17.
[88] PG&E Plan at pp. 66-67.
[89] POC Comments at pp. 13-17; CEJA Comments at p. 16.
[90] PG&E Plan at p. 65.

during a wildfire and increase the force the asset can withstand, thus reducing potential wires down situations.[91]

CEJA argues that before any system hardening is approved, the utilities should be required to inspect their facilities to ensure these facilities comply with current requirements.[92] PG&E's Plan has a detailed discussion of its inspection and repair program for its electric facilities in compliance with existing requirements.[93] There is no reason, however, to delay a beneficial program such as system hardening while these inspections are ongoing. Moreover, CEJA fails to make any connection between inspections for ongoing compliance and the need for system hardening to reduce ignition and wildfire risk.

TURN incorrectly claims that PG&E failed to show how it was prioritizing the 150 miles for system hardening.[94] PG&E identified the prioritization outputs for TURN in response to TURN Data Request Set #5, Question 4 (referencing Cal Advocates Set #4, Question 1), which included a detailed spreadsheet identifying specific circuits, risk scores, and risk tiers. TURN also criticizes replacement of transformer fluid.[95] However, these replacements are simply to implement PG&E's current equipment standards as it is performing system hardening using fire resistant insulating fluid.[96] TURN offers no reasoned basis for not upgrading to transformers with different insulating fluid.

4.4 Vegetation Management

PG&E's Plan describes the Enhanced Vegetation Management ("EVM") work that it began in 2018 in HFTD areas in addition to PG&E's ongoing vegetation management programs. Many parties did not object to the scope of the enhanced vegetation work, but suggested the utilities improve communication with landowners. PG&E agrees; PG&E reaches out to customers at multiple steps in the vegetation management process and continually works to improve outreach to customers based on feedback received. The Joint Local Governments assert that PG&E should include specific feedback and remediation measures implemented since it began the EVM program and update those measures in each annual plan.[97] As stated previously,

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[91] PG&E Plan at p. 66.
[92] CEJA Comments at pp. 15-16.
[93] PG&E Plan at pp. 52-59.
[94] TURN Comments at pp. 24-25.
[95] TURN Comments at p. 26.
[96] PG&E Plan at p. 62.
[97] Joint Local Governments Comments at p. 12.

PG&E will continue to evolve our wildfire mitigation efforts, including the EVM program, and will consider and incorporate feedback as part of that evolution.

Some parties recommend expanding the scope of PG&E's Plan. While acknowledging utilities only have control over their rights-of-way, GPI argues that the utilities should include measures to convey concerns about conditions outside of rights-of-way to landowners and forest managers.[98] As utilities may only be systematically aware of conditions within and adjacent to rights-of-way that may potentially impact utility-owned facilities, GPI's suggestion may have limited efficacy in addressing the broader concerns regarding landowner compliance with fire safe and defensible space regulations. That is best handled by CAL FIRE, which has the authority to monitor and enforce these regulations and has educational materials to notify the public of compliance obligations.[99] Instead utilities should continue to focus on their primary responsibilities regarding the rights-of-way, including by educating the public on what to plant around powerlines.[100]

In addition, the Joint Local Governments and GPI express concerns regarding leaving wood debris for landowners to dispose of and potentially creating fire hazards.[101] Wood debris belongs to the landowners, so PG&E cannot require landowners to turn over that wood to PG&E or dispose of it. However, as part of its enhanced vegetation work, PG&E created a wood management program and notifies eligible landowners that we will remove (at no cost to the landowner) accessible wood debris within a few weeks after completion of the safety work, unless the property owner notifies PG&E that they would like to keep it.

Some parties raise concerns about the overall justification for the vegetation management programs. For example, MGRA suggests that communities be allowed to decide between less vegetation management with a lower de-energization threshold or more vegetation management with a higher de-energization threshold. Setting aside the question of how each community would reach consensus or how this would be binding on individuals in the event of a wildfire, de-energizing may not only impact a single community, but may affect downstream communities as well. Both MGRA and TURN argue that the utilities should expand the analysis of the

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[98] GPI Comments at pp. 4-5.

[99] *See, e.g.,* CAL FIRE's website with compliance information: http://www.readyforwildfire.org/.

[100] *See, e.g.,* PG&E websites providing guidance on powerline safety: https://www.pge.com/en_US/safety/yard-safety/powerlines-and-trees/power-line-safety-and-trees.page; and safe plants near powerlines: https://www.pge.com/righttreerightplace.

[101] GPI Comments at p. 5; Joint Local Governments Comments at pp. 11-14.

interrelationship between covered conductor and the risk from vegetation contact to balance installing covered conductor with vegetation management.[102] Not only did PG&E provide data responses explaining the incremental benefit from both covered conductor and vegetation management, but it also explained that the two programs address different risks.[103]

MGRA also suggests that PG&E accelerate covered conductor efforts along circuits with vegetation contact risk in lieu of vegetation management.[104] PG&E will continue to re-assess vegetation management as we learn more about fire risk risks and mitigation measures, but notwithstanding the above discussion of the complementary nature of covered conductor installation with vegetation management, PG&E is already aggressively performing system hardening, which is subject to various constraints including environmental, manufacturing, and installation. However, it is not possible to install covered conductor across the entire HFTD before fire season, or even in the next five years, and additional wildfire mitigation measures cannot wait. Vegetation management plays an important, near-term risk mitigation role.

4.5 Situational Awareness

PG&E has expanded its efforts to monitor potential wildfire threats in real time and coordinate prevention and response efforts. As the threat of extreme weather and wildfires has grown, PG&E has also advanced its weather forecasting capabilities. In its Plan, PG&E proposes to develop and increase these efforts. Parties generally do not object to the proposed measures program, but questioned how PG&E would coordinate these efforts with third parties.

CEJA asks the Commission to require PG&E and Southern California Edison Company ("SCE") to develop the basic framework implemented by SDG&E of weather stations, camera networks, fire detection, and wireless fault indicators as a best practice,[105] which is what PG&E proposes in the Plan. PG&E is building a network of weather stations to monitor weather conditions to allow it to better predict where extreme wildfire danger could occur. Data collected by these weather stations is streamed in real time (every 10 minutes) and is available to state and local agencies and the public through online sources such as the National Weather Service (a division of the National Oceanic and Atmospheric Administration or NOAA) and Mesowest. PG&E is also building advanced fire modeling capabilities into its weather

[102] TURN Comments at p. 24; MGRA Comments at p. 21.
[103] *See* PG&E Response to Question 13 of TURN's Third Set of Data Request.
[104] MGRA Comments at p. 21.
[105] CEJA Comments at p. 19.

forecasting models and is installing a network of cameras with live feeds on high fire-risk locations, as well as using feeds from public sources, including the Geostationary Operational Environmental Satellite (GOES-16), operated by NASA and NOAA, and the Geospatial multi-agency coordination (GeoMAC), run by the USGS, which shows daily fire perimeter data and past and current fire perimeters. PG&E is piloting wireless line sensor technology for its system and continues to evaluate the efficacy and feasibility of the technology.[106]

The Joint Local Governments ask that PG&E share situational awareness data.[107] As explained above, all data collected from the weather stations deployed as part of this program are already made publicly available. If an agency or municipality is interested in a specific geographical area within PG&E's service area, PG&E can provide direct links to the local station information on NOAA. Likewise, the high definition cameras will be a part of the ALERTWildfire system, which is used by fire managers at the Bureau of Land Management, the U.S. Forest Service, CAL FIRE, and local fire departments. PG&E is in the process of developing its satellite fire detection system, but will consider ways to share data once the system has been fully tested and deployed.[108]

The Joint Local Governments also ask how PG&E's WSOC, the central wildfire-related information hub for PG&E, will communicate with first responders during emergencies. WSOC coordinates with all lines of businesses and first responders and public safety officials to respond to emerging threats, including by deploying Public Safety Specialists and field observers to interface with CAL FIRE incident commanders, report on field conditions, and investigate reported wildfires.[109]

4.6 Public Safety Power Shutoff

PG&E's protocols and procedures for prospective de-energization, or Public Safety Power Shutoff ("PSPS"), exceed the requirements of Resolution ESRB-8 ("ESRB-8"). ESRB-8 specifies the requirements that the electric investor-owned utilities must satisfy for PSPS events, including specifying factors to evaluate whether de-energization was reasonable; requiring public outreach, notification, and mitigation to customers to the extent feasible and appropriate; and requiring reporting to SED after PSPS events. PG&E's Plan describes the factors PG&E

[106] *See* PG&E Plan at p. 111.
[107] Joint Local Governments Comments at pp. 14-18.
[108] PG&E Plan at p. 92.
[109] PG&E Plan at pp. 93-94.

considers to determine whether to turn off power for safety[110] and notification strategies to reach out to customers, first responders and providers of critical services.[111] The Plan does not specifically describe SED notice after a PSPS event, but specifies that PG&E shall utilize a PSPS in accordance with ESRB-8, and PG&E satisfied this requirement after PG&E's initial and only PSPS event to date.[112] PG&E also describes initiatives and services it is implementing or evaluating to mitigate the impact of PSPS events.[113] PG&E will continue to refine and develop strategies that minimize the extent of the disruption of grid power.

One mitigation strategy is PG&E's planned resilience zones, which will allow it to safely provide electricity to central community resources during a PSPS event. As explained in the Plan, PG&E is piloting a resilience zone in Angwin and will subsequently consider resilience zones in other communities. PG&E is encouraged that the Joint Local Governments support resilience zone development.[114] PG&E agrees with their recommendations on local engagement, which align with PG&E's intention to engage local communities when assessing and implementing resilience zones. PG&E followed those procedures when developing the Angwin pilot project, which PG&E previously called a Pre-Installed Interconnection Hub ("PIH"). PG&E first proposed the idea of a PIH in Angwin with Napa County leadership in initial rollout meetings in April-May of 2018. After discussions with Pacific Union College, PG&E had a further conference call with Napa County leadership in June 2018, who indicated that PG&E should move forward with the pilot and stay in touch with the County as plans progressed. PG&E will work to further enhance PG&E's outreach to local governments going forward.

Parties raise other concerns and suggestions regarding PG&E's PSPS protocols. As ALJs Thomas and Allen explained, this critique should be examined in the separate de-energization proceeding, Rulemaking ("R.") 18-12-005. As ALJ Thomas explained at the February 26, 2019 prehearing conference, prospective de-energization "requires more in-depth consideration [than] it can receive in this proceeding."[115] The Commission opened the separate proceeding, R.18-12-

[110] PG&E Plan at pp. 97-98.

[111] PG&E Plan at pp. 105-109.

[112] *See* Compliance Report for October 14, 2018 PSPS Event (October 31, 2018); *available at:* https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/PSPS-Report-Letter-10.31.18.pdf

[113] PG&E Plan at pp. 98-105.

[114] Joint Local Governments Comments at pp. 20-21.

[115] ALJ Thomas, Prehearing Conference, R. 18-10-007, Transcript at p. 92, lines 6-14 (February 26, 2019) ("PHC Transcript").

005, to allow stakeholders to provide input on the appropriate procedures and rules for de-energization.[116] As a result, the ALJs expect that the Commission will not do much substantively on de-energization in this proceeding.[117] The plans are subject to ESRB-8's rules regarding de-energization, until ESRB-8 is supplemented or supplanted by another decision.[118]

4.7 Alternative Technologies

4.7.1 Alternative Technologies

PG&E's Plan describes alternative technologies it is evaluating to determine their potential to mitigate wildfire risk, including a rapid earth fault current limiter, enhanced wires down detection, and microgrids.[119] Several parties expressed interest in batteries and microgrids and suggested that these technologies be reviewed in more detail in future Plans.[120] PG&E supports further consideration of microgrids and other alternative technologies in future Plans.

4.7.2 Alternative Approaches

Mr. Abrams does not directly address the programs and strategies proposed by PG&E but, instead, suggests several additional programs such as R&D, the development of a think tank, using "adjacent" technologies, and mutual assistance agreements.[121] PG&E does not oppose these suggestions, but they need more detail. PG&E's Plan describes in some detail its collaboration with universities, technology experts, and other parties to research and develop innovative approaches to wildfire risk.[122] PG&E welcomes the opportunity to work with Mr. Abrams and others on research and alternative approaches to addressing wildfire risks. However, working to evaluate and possibly adopt these measures should not delay approval and implementation of PG&E's current Plan, which is needed to address the imminent arrival of wildfire season.

4.8 Post-Incident Recovery, Restoration, and Remediation Activities

PG&E's Plan provides an overview of the post-incident recovery and rebuilding activities that it undertakes after a wildfire incident, regardless of the cause.[123] While these activities do

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[116] PHC Transcript, p. 92, line 28 to p. 93, line 8.

[117] PHC Transcript at p. 92, lines 26-28; p. 93, lines 12-15.

[118] PHC Transcript, p. 92, lines 17-25.

[119] PG&E Plan at pp. 110-112.

[120] CEJA Comments at pp. 19-20; SBUA Comments at pp. 6-7; POC Comments at pp. 20-21; Peninsula Clean Energy ("PCE") and Sunrun Comments at p. 4.

[121] Abrams Comments at pp. 11-13.

[122] *See e.g.* PG&E Plan at p. 9 (describing research objectives).

[123] PG&E Plan at pp. 113-116.

not prevent wildfires, they are critical to help communities to recover and rebuild after a wildfire occurs.

CEJA comments that the utilities' plans need to include customer protections for disaster relief and protections for low-income customers, and commends PG&E for its low-income programs.[124] Customer payment and low-income programs are addressed in Section 5.2 of PG&E's Plan. EBMUD remarks that PG&E's Plan only covers internal communications regarding restoration.[125] However, as PG&E's Plan explains, post-incident recovery is coordinated with Cal OES, local fire, and other agencies.[126] Restoration of service is also described in Section 5.1.2 of PG&E's Plan.

The Joint Local Governments suggest that future Plans include a discussion of post-incident activities, potential areas for improvements, and lessons learned.[127] PG&E agrees with this proposal. SBUA recommends that the Plan be revised to specifically address how small business customers will be assisted.[128] PG&E's Plan provides a lengthy discussion of customer support in Section 5.2. This support applies to all customer groups. It is not appropriate to single out a specific group of customers for discussion in the Plan. To the extent SBUA has additional questions regarding small business customers, PG&E's Customer Care organization is ready to work with SBUA to address these questions.

5. Emergency Preparedness, Outreach and Response

PG&E's Plan includes a lengthy discussion of its emergency response plan, including public outreach and communications, as well as customer support during and after an emergency, including information and financial support.[129] CEJA expresses concern that some utilities do not have plans for customer communications during an emergency, but instead are focused on PSPS events.[130] As to PG&E, this concern is unfounded. PG&E's Plan described emergency communications and outreach before, during, and after a wildfire emergency.[131] PG&E's outreach efforts are also much more extensive than CEJA represents in its comments

[124] CEJA Comments at pp. 20-23.
[125] EBMUD Comments at p. 7.
[126] PG&E Plan at p. 114
[127] Joint Local Governments Comments at p. 26
[128] SBUA Comments at pp. 7-9.
[129] PG&E Plan at pp. 117-129.
[130] CEJA Comments at pp. 24, 27.
[131] PG&E Plan at pp. 120-122.

(*i.e.*, that PG&E communication is limited to "indirect efforts"), including texts and e-mails directly to customers, making information available through customer contact centers, and other proactive approaches to disseminating information.

The Joint Local Governments express general concern regarding communications between PG&E and local governments and first responders.[132] PG&E takes these comments seriously and is ready to work with the Joint Local Governments to address specific situations and, more generally, to remedy these concerns. Mr. Abrams notes that the effectiveness of communications is critical both before and after wildfire emergencies.[133] PG&E agrees and, similar to the Joint Local Governments' comments, looks forward to working with parties to continue to improve the effectiveness of emergency communications. The effectiveness of communications can be addressed in future Plan proceedings or in other venues identified by the Commission.

GPI suggests that additional outreach is needed regarding de-energization events.[134] This issue is best addressed in the de-energization proceeding, which has specifically scoped in Phase 1 the issue of communication.[135]

SBUA recommends prioritizing small health service providers and small commercial centers for emergency preparedness outreach.[136] While PG&E recognizes the importance of these customer groups, all customers need outreach and information regarding emergencies. This is why PG&E has provided a comprehensive emergency preparedness and response plan intended to meet the needs of all of its customers.

6. Performance Metrics and Monitoring

PG&E's Plan includes targets and indicators to measure plan performance. Targets are goals for specific work to be done and/or the quality of the work performed and include, for example, reclosers enabled with SCADA, number of facilities inspected, number of miles hardened and subject to enhanced vegetation management, and weather stations and cameras

[132] Joint Local Governments Comments at pp. 2, 27.

[133] Abrams Comments at pp. 14-16.

[134] GPI Comments at p. 6.

[135] *Assigned Commissioner's Scoping Memo and Ruling (Phase 1)*, issued March 8, 2019 in R.18-12-005 at p. 4.

[136] SBUA Comments at p. 10.

installed.[137] Indicators track the resulting performance of Plan programs[138] and include wires down events, equipment caused ignitions, and vegetation caused outages and ignitions. PG&E's Plan also includes proposals for monitoring and auditing performance, including internal and external auditing.[139] In addition to PG&E's internal and external auditing, Plan performance will also be evaluated by an independent evaluator that reports directly to the Commission.[140] TURN acknowledges that indicators such as "wire down events, ignitions, and outages" are "potentially worthwhile indirect metrics."[141]

Cal Advocates recommends that for future plans, the utilities provide more detail regarding risk analysis, risk-spend efficiency, and alternative strategies.[142] PG&E provided available information on many of these topics in Section 3 of its Plan and in discovery. There is a trade-off between a reasonable length and level of detail for future Plans. This is something that should be considered in the next Plan cycle.

Joint Local Governments propose that PG&E's metrics include feedback from first responders, local governments, and residents.[143] While PG&E welcomes feedback and input on its Plan, it is unclear how this feedback would be translated into a target or indicator. OSA recommends additional tracking of information related to wires down.[144] PG&E does not oppose tracking additional wires down information as long as the information to be tracked is clearly identified.

EPUC incorrectly asserts that PG&E's indicators are not casually related to the targets.[145] For example, the wires down and equipment caused ignitions can be correlated to where PG&E has performed system hardening. If there are fewer events in the areas where there has been system hardening, this may be one indicator of the success of this program. Similarly, the amount of enhanced vegetation management can be correlated to vegetation caused outages and

[137] PG&E Plan at p. 131.
[138] PG&E Plan at p. 132.
[139] PG&E Plan at pp. 137-140.
[140] PUC § 8386(h).
[141] TURN Comments at p. 29.
[142] Cal Advocates Comments at pp. 22-23.
[143] Joint Local Governments at p. 28.
[144] OSA Comments at pp. 25-26.
[145] EPUC Comments at pp. 17-18.

ignitions. While there may be other factors causing wires down or ignitions, having specific measurable targets and programs will assist in evaluating how these programs have performed.

CEJA argues that the metrics should evaluate harm and the utility response to certain issues, mistakenly relying on Section 8386.1.[146] However, Section 8386.1 addresses factors the Commission is to consider when accessing penalties for non-compliance, not metrics to evaluate performance. CEJA is relying on the wrong statutory provision. Section 8386(c)(4), which identifies the metrics to be included in the plans and thus is the relevant section here, specifies that metrics are to be used to "evaluate the plan's performance." PG&E's Plan identifies targets that track how PG&E is doing with regard to its proposals and indicators which address factors that can cause wildfires, such as wires down and ignitions caused by vegetation or equipment. These are the types of metrics envisioned in Section 8386(c)(4). CEJA also proposes metrics regarding customer outreach.[147] This is a metric that will require further definition and thus is more appropriate for a future Plan.

MGRA recommends that the utilities track certain kinds of data, such as outages, vegetation including tree species, ignition sources, and equipment information.[148] Most of this data is already collected, and frequently reported, by the utilities. It is unclear, however, how this data collection equates to specific metrics. The East Bay Municipal Utility District ("EBMUD") proposes metrics regarding PSPS events.[149] These metrics should be addressed in the de-energization proceeding (R.18-12-005). SBUA proposes that metrics be broken down by customer size.[150] While PG&E recognizes that different customers will have different interests, PG&E's targets (*i.e.*, vegetation management, system hardening) and indicators (*i.e.*, wires down and ignitions) would not be susceptible to a breakdown by customer size.

Mr. Abrams recommends the use of certain risk mitigation approaches and scorecards as metrics to measure Plan performance.[151] Mr. Abrams criticizes the utilities' plans for measuring program activities, rather than risk, and failing to include "measurable and verifiable targets."[152] These concerns are misplaced. First, PG&E's programs were developed based on the risk

[146] CEJA Comments at pp. 28-29.
[147] CEJA Comments at p. 29.
[148] MGRA Comments at pp. 22-24.
[149] EBMUD Comments at p. 7.
[150] SBUA Comments at pp. 11.
[151] Abrams Comments at pp. 16-19.
[152] Abrams Comments at p. 20.

assessment it already performed and described in Section 3 of the Plan. This risk assessment informed the development of the programs and strategies proposed by PG&E. Second, PG&E's targets are intended to measure and verify progress toward the implementation of these risk-informed programs and strategies. Third, the targets and indicators are both measurable and verifiable. Both targets and indicators include specific data and numbers that can be readily verified and measured.

TURN argues that the metrics should include ultimate outcomes, such as number of wildfires, injuries and deaths resulting from wildfires, and acres burned.[153] While this information is already tracked, these outcomes do not necessarily directly correlate to the Plan's performance as the outcomes may result from events outside the Plans. Thus, while important, these outcomes should not be metrics.

7. Recommendations for Future Plans

PG&E agrees with the recommendation of several parties to include improvements in future plans based on lessons learned. PG&E's Plan is premised upon the idea of continuous improvement. PG&E will monitor and assess the programs, ignition drivers, and indicators to allow for the continuous re-evaluation, re-design, and re-prioritization of the wildfire risk reduction programs to continually improve the Plan's efficiency at reducing the risk of catastrophic wildfire. PG&E welcomes the input and feedback of our communities, customers, community leaders, first responders, and others to collaboratively solve the unprecedented wildfire risk facing our state.

CLECA recommends that the decision approving the utilities' plans include a clear timeline for the next wildfire mitigation plan proceeding.[154] PG&E agrees. Several parties including OSA, Cal Advocates, and MGRA propose specific next steps after the initial plans are approved.[155] PG&E does not oppose any specific suggested next steps, but recommends that the Commission convene a pre-hearing conference after approving the initial plans to determine next steps before the filing of the 2020 plans. OSA also recommends certification of the wildfire mitigation plans by a utility officer.[156] It is unclear how the plans would benefit from certification, and this appears to be an additional and unnecessary added requirement.

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[153] TURN Comments at p. 28.

[154] CLECA Comments at p. 13.

[155] OSA Comments at pp. 27-29; Cal Advocates Comments at p. 23; MGRA Comments at p. 25.

[156] OSA Comments at p. 29.

TURN suggests that proof of compliance with GO 165 be included in the wildfire mitigation plans.[157] The plans are already time consuming and cumbersome. Also, the Commission has other processes to ensure compliance with GO 165. GO 165 requires each utility to submit to the Commission an annual maintenance report describing its inspection activities for the prior year, no later than July 1st every year. There is no point to a duplicative and burdensome effort.

TURN suggests that the plans focus on preventing catastrophic wildfires, not simply ignitions.[158] PG&E agrees, which is why its Plan focuses on reducing the risk of wildfires in the HFTD areas – where the risk of an ignition becoming a catastrophic wildfire is greatest – taking into consideration wind-related outage data, CPUC-Reportable Ignition Data, topographical and climatological data, wildfire spread and consequence studies, and an egress risk score, to further expand the risk analysis in the HFTD areas.

8. Other Issues

A number of parties raise other issues beyond those discussed above. PG&E briefly addresses some of these issues. MGRA raises concerns regarding the timing and meaning of Commission approval of the Plan, which is addressed above in Section 1.[159] Mr. Abrams recommends community meetings to review the utilities' plans and a community awareness campaign.[160] While these efforts are not possible for the current Plan review given the short time until wildfire season, PG&E does not oppose community meetings and outreach being included in the next Plan cycle.

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[157] TURN Comments at pp. 13, 30.

[158] TURN Comments at p. 30.

[159] MGRA Comments at p. 26.

[160] Abrams Comments at p. 22.

CONCLUSION

In summary, PG&E has submitted a Plan that complies with the requirements of SB 901 and puts forward an aggressive approach to mitigating wildfire risks in 2019 and in subsequent years. PG&E's Plan is supported by extensive data and analysis, as demonstrated in the Plan and the thousands of pages of data requests and material provided to the Commission, parties, and the public. PG&E urges the Commission to approve its Plan and direct the utilities to file a Tier 1 Advice Letter to implement a WPMA within five business days of issuance of the decision approving the plans to record the costs of the approved plans, effective as of the date of approval of the plans. PG&E also requests that the Commission's approval expressly acknowledge that the utilities will be allowed recovery of just and reasonable costs to implement the approved programs, and, subject to reasonableness review, the utilities retain discretion to reprioritize work to address changing conditions, new information, or as a result of external factors beyond their control. In light of the multi-year intervals between GRCs and the likely substantial costs to implement annual plans, the Commission should also authorize utilities to seek interim cost recovery via application, with costs subject to refund upon reasonableness review in the GRC, to provide utilities with the revenues to implement the plans.

Respectfully Submitted,

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