

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

Office of Energy Infrastructure Safety  
Natural Resources Agency

**COMMENTS OF THE GREEN POWER INSTITUTE ON THE  
OEIS DRAFT DECISION ON PG&E'S 2022 WMP UPDATE**

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## COMMENTS OF THE GREEN POWER INSTITUTE ON THE OEIS DRAFT DECISION ON PG&E'S 2022 WMP UPDATE

The Green Power Institute (GPI), the renewable energy program of the Pacific Institute for Studies in Development, Environment, and Security, provides these *Comments of the Green Power Institute on the OEIS Draft Decision on PG&E's 2022 WMP Update*.

GPI generally supports the Draft decision on PG&E's 2022 Wildfire Mitigation Plan Update. We provide the following recommendations for inclusion in the final Decision.

*All WMP Draft Decisions should include a statement explaining that plan approval does not necessarily imply a utility is safely operating the grid in their territory, especially in cases where remediation plans are proposed in the WMP but critical issues persist.*

It is important to make the distinction that plan approval does not and should not imply that PG&E has achieved core elements that constitute safe operation of the grid in their territory. Rather, WMP approval is the approval of a plan intended to bring wildfire mitigation efforts up to expected standards. That is, WMP elements that provide a plan for remedying critical issues, but for which adequate capabilities or standards are not yet achieved, should be made crystal clear in the plan approval statement and should be taken into account when determining whether a utility is operating safely (e.g. Safety Certificate award). We provide two examples in the case of PG&E Critical Issues, Revision Notice Responses, and the 2022 Draft Decision Approval determination:

- Critical Issue RN-PG&E-22-05: PG&E has significant backlog of repairs and needs a more aggressive plan to address the poor health of its infrastructure.

While providing targets in 2022-23 that are intended to reduce the tag backlog, PG&E is still creating more tags than they are closing and their overdue tag backlog remains an issue, including for high-risk tags (e.g. Priority A and B). The Draft Decision states: "Because of its backlog, PG&E is not currently complying

with relevant GOs (2022 WMP Draft Decision PG&E).” The Draft Decision de-escalates this critical issue on account of PG&E’s Revision Notice Response plan to remedy the issue. However, the failure to comply with GOs is highly relevant to whether PG&E is operating safely, and is a separate issue compared to whether they have an adequate plan to remedy this wildfire safety-related shortfall.

GPI is concerned that de-escalation of the critical issue and WMP Approval in the Draft Decision may send an unintended message regarding whether the critical issue is remedied or acceptable versus whether there is a plan to remedy it in the coming years. GPI strongly recommends qualifying the Approval statement in the 2022 WMP Decision to clarify that an approved plan is only a decision regarding plan adequacy and does not necessarily imply safe operation. We further recommend that the final Decision Approval statement should include a summary of persisting critical issues that have not been remedied, such as overdue distribution tags.

- Critical Issue RN-PG&E-22-08: PG&E has high find and failure rates in its Quality Assurance and Quality Control of asset inspections

PG&E has extremely high asset-inspection QA/QC failure rates (34 – 65 % in 2022) that increased from 2021 to 2022. Furthermore, they do not intend to re-inspect locations that were inspected by poorly performing inspectors. The Draft Decision points out numerous issues with PG&E’s revision notice response, yet states that the critical issue is de-escalated to an area for continued improvement. GPI is concerned that de-escalating the critical issue of an ineffective asset inspection program on the basis of a limited remediation plan sends the wrong message about whether PG&E is operating safely on this metric. GPI strongly recommends clarifying that de-escalated issues and Approved WMPs do not necessarily imply a determination of safe operation. The Decision Approval statement should highlight outstanding critical issues such as RN-PG&E-22-08 that are identified in the WMP review process.

*The Draft Decision should clarify the difference between PG&E-22-17 and PG&E-22-22.*

PG&E-22-17 and PG&E-22-22 both address PG&E's backlogged and overdue work tags:

**PG&E-22-17. Future Quantitative Targets to Reduce the Backlog of Repairs.**

- o Description: PG&E's increased inspections (performed to exceed existing General Order [GO] requirements and better address wildfire risk) resulted in a backlog of repairs. While PG&E committed to backlog reduction targets, PG&E did not include quantitative targets for reducing its backlog past 2023.
- o Required Progress: In its 2023WMP, PG&E must provide quantitative targets for addressing repairs for infractions found during inspections, broken down by severity level of the finding, accounting for the entire backlog.
- o Discussed in Section 4.6.4, "Asset Management and Inspections (2022 Draft Decision PG&E, p. 176)."

**PG&E-22-22. Progress on Meeting Asset Inspection Regulatory Requirements.**

- o Description: PG&E is not meeting General Order (GO) requirements; it has thousands of overdue work tags.
- o Required Progress: PG&E must come into compliance with the relevant GO work order backlog requirements by the end of 2023. In its 2023 WMP, PG&E must:
- o Required Progress: PG&E must come into compliance with the relevant GO work order backlog requirements by the end of 2023. In its 2023 WMP, PG&E must:
  - Provide its resource plan describing how it will progress on closing outstanding and overdue work orders in the HFTD to eventually reach a functional capability whereby more work orders are being closed than are being opened.
  - Provide an update of its progress on addressing remaining work tags in 2022, including the number of work tags opened and closed per quarter.

- o Discussed in Section 4.6.4, “Asset Management and Inspections (2022 Draft Decision PG&E, p. 178).”

These two issues overlap with respect to developing a plan that will reduce or eliminate the work-tag backlog. PG&E-22-17 states that PG&E has not provided remediation targets past 2023, while PGE-22-22 raises the core issue that there are thousands of overdue work tags. PG&E-22-17 Required Progress requires a target-based remediation plan but does not specify the planning horizon over which PG&E is expected to provide quantitative targets past 2023. PGE-22-22 requires that PG&E achieve compliance with GO work tag requirements by the end of 2023, which would make backlog remediation planning past 2023 moot. GPI recommends combining PG&E-22-17 and -22, with a preference for retaining the more proactive requirement in PG&E-22-22 that PG&E come into compliance with GO work order tag requirements, especially high priority tags, by the end of 2023. If a remediation plan is permitted past 2023, this plan should achieve closure within the planning horizon of the next 3-year WMP cycle, which is 2023-2025.

*Asset inspection QA/QC targets should extend through 2025 and/or should include a deadline for achieving a minimum standard.*

PG&E-22-21 addresses the asset inspection QA/QC failure rate:

**PG&E-22-21. Asset Inspections Quality Assurance and Quality Control.**

- o Description: PG&E is falling behind on its asset inspection quality assurance and quality control (QA/QC) goals and does not currently have goals for 2023.
- o Required Progress: In its 2023 WMP, PG&E must:
  - Provide quantitative goals for asset inspection QA/QC for 2023 and 2024.
  - Provide the results of its remaining 2022 asset inspection QA/QC.
  - Discuss any additional changes made to its asset inspection program and/or QA/QC process based on continued lessons learned through the 2022 QA/QC program.

- Provide a description of the progress made to reach its goals, including analysis of the impact of implementing each change to its QA/QC process.

o Discussed in Section 4.6.4, “Asset Management and Inspections.”

GPI recommends setting QA/QC pass rate standards similar to the 95 percent “acceptable quality level for performance” required for its vegetation management quality assurance and quality verification program (2022 WMP Draft Decision PG&E, p. 115). Further, the QA/QC pass rate standard should have an achievement year requirement, for example, by the end of the 3-year WMP cycle in 2025. PG&E should also be required to provide quantitative goals for asset inspection QA/QC pass rates through 2025, or the 3-year WMP planning horizon.

*The Draft Decision should establish a plan to determine whether PG&E’s increases in cost to ratepayers over the 2020-22 WMP plan is steeper than other IOUs.*

The Draft Decision notes that:

When comparing ratepayer electric costs for wildfire mitigation activities and ignitions across the large IOUs’ 2022 Updates, PG&E’s increase in electric costs to ratepayers over the 2017- 2022 period (Figure 4.2-4) is markedly steeper than the increase for SCE and SDG&E for the same period. Energy Safety asked PG&E to explain the large discrepancy in electric costs to ratepayers to support WMP activities as compared to its peer utilities. In response, PG&E indicated vegetation management and inspections and grid design and system hardening are the major cost drivers of the current WMP cycle. PG&E also indicated that some of the differences in costs may be related to regulatory timing for cost recovery. Thus, SCE’s and SDG&E’s actual costs for earlier periods may be higher once the CPUC completes its review of these costs (2022 WMP Draft Decision PG&E, p. 31-32).

While cost reasonableness and approval is ultimately decided in the General Rate Case, the WMP review process should endeavor to make the cost-benefit of each utility WMP plan

transparent to the maximum extent possible. Balancing wildfire mitigation with affordability is a WMP requirement. GPI recommends establishing a practice, or at least a plan, to review and compare utility WMP costs following CPUC review in order to help evaluate cost effectiveness for ratepayers. The question of whether PG&E's ratepayer-normalized WMP costs are substantially more expensive than other IOUs should remain in scope for the WMP review and approval process.

*The 2022 WMP Draft Decision PG&E should use wildfire risk and consequence language from the 2023 Draft Guidelines, namely the expanded definition of community values and new community vulnerability terminology.*

The Draft 2023 WMP Guidelines include an expanded definition of Community Values at Risk, stating:

Community values at risk from wildfires are often defined in terms of life safety, buildings, and critical infrastructure. However, values can also include human health, natural resources, sensitive species, cultural and historical resources, and other intangibles (e.g., social capital, community culture, livelihood) (Draft 2023 WMP Guidelines, p. 35).

GPI recommends using the term “community values at risk” and clarifying the expanded definition in the 2022 WMP Draft Decision PG&E. This term and definition should be included as part of the EPSS and PSPS impact study reporting requirements for PG&E's 2023 WMP filing for PG&E-22-32. Recommended additions to these reporting requirements are underlined:

**PG&E-22-32. Updates on EPSS Reliability Study.**

- o Description: PG&E has not yet included any data from 2022 in its EPSS reliability impact study.
- o Required Progress: In its 2023 WMP, PG&E must provide the results from an updated 2022 EPSS reliability impact study, including any related safety impacts.

This must include, but is not limited to:

- Number of outages.
- Duration of outages.
- Number of customers impacted.
- Number of customers belonging to vulnerable populations (such as AFN, ~~and~~ Medical Baseline, and Social Vulnerability Index) impacted.
- Impact on community values, including intangibles (e.g. livelihood)
- Response time for outages.
- Asset health (open work tags, asset age, etc.).
- Vegetation data.
- Resource constraints (access issues, staffing numbers, etc.).

o PG&E must also provide an updated plan of actions being taken based on the analysis performed in its EPSS reliability impact study to reduce reliability and safety impacts of EPSS.

o Discussed in Section 4.6.6, “Grid Operations and Operating Protocols, Including PSPS.”

*PG&E and other IOUs should work with CalFire, Technosylva, and/or other third parties to assess additional metrics for fire spread potential.*

PG&E-22-05 Eight-hour fire spread simulations addresses the consequence aspect of wildfire risk modeling. GPI recommends expanding this recommendation to all utilities, since most if not all are using 8-hour fire spread simulations. It is also the case the longer simulations can lead to greater uncertainty in the simulation and resulting consequence scores, creating a catch-22 for the cost-benefit of extending fire spread simulations to longer durations. However, GPI does support exploring whether longer fire spread simulations can provide reasonable consequence estimates that balance insight with uncertainty, or whether other 8-hour fire spread simulation outputs can be used to inform fire severity and spread potential past the 8-hour simulation, and as an input to the



consequence valuation (e.g. flame length, temperature, spread rate etc.). Accordingly, we recommend the following edits to PG&E-22-05:

- **PG&E-22-05. Eight-Hour Fire Spread Simulations.**

- o Description: PG&E's Utility eight-hour fire spread simulations may be impacting underestimate granular wildfire consequence. the accuracy of its wildfire spread consequence modeling.

- o Required Progress: PG&E must:

- o Prior to the submission of its 2023 WMP, PG&E and the IOUs must benchmark with against other utilities and consult with third parties (e.g. CalFire, Technosylva) on how to evaluate and account for to account for catastrophic fire risk that occurs more than eight hours post-ignition. ~~and~~ The IOUs must provide a summary of lessons learned in ~~its~~ their 2023 WMP. Further guidance may be determined and covered within the risk model working group established by the 2021 WMP Action Statements.

- o In its 2023 WMP, PG&E and the IOUs must include a description of resulting changes to its wildfire spread consequence modeling or anticipated changes and a timeline for implementation.

- o Discussed in Section 4.6.1, "Risk Assessment and Mapping."

*The Draft Decision should clarify that utility fire spread modeling in general does not include suppression considerations and should adjust PG&E-22-04 to provide a summary of discussed approaches for include fire suppression considerations.*

Fire suppression considerations have many variables with substantive uncertainty. For example, the time it takes to identify a wildfire at various locations ranging from city distribution lines reported via 911 call-ins to remote locations via wildfire detection cameras, as well as the time it takes to reach the fire and the fire and weather conditions once suppression efforts begin. While we are not experts in wildfire spread, modeling, or

suppression, we foresee the challenge in accurately modeling fire suppression due to input ranges and uncertainty, as well as the need for cautious application of fire suppression model outputs in order to not underestimate granular wildfire risk. That is, we foresee the design and application of fire suppression models as a complex question that should be cautiously applied to granular risk quantification in WMP planning models. Pushing utilities to integrate fire suppression into granular risk models before the inputs and assumptions have matured could lead to substantial instability in granular risk planning model outputs. We also note that all utilities, not just PG&E, do not currently factor in suppression effects. We suggest the following updates to PG&E-22-04:

**PG&E-22-04. Fire Suppression Considerations.**

- o Description: ~~PG&E's~~ Utility fire spread modeling does not currently factor in suppression effects (e.g., fire department efforts).
- o Required Progress: Prior to the submission of its 2023 WMP, ~~PG&E~~ the utilities must work together with other utilities to evaluate approaches to how to best account for, quantify, and model suppression effects on wildfire spread. Further guidance will be determined and covered during the risk model working group meetings established by Energy Safety's 2021 WMP Action Statements. Utilities should provide the results and current progress on this joint effort as an attachment to their 2023 WMPs
- o Discussed in Section 4.6.1, "Risk Assessment and Mapping."

*Prioritizing wildfire risks and drivers should include progress towards quantification.*

PG&E-22-01 Prioritized List of Wildfire Risks and Drivers requires PG&E to take into consideration the likelihood that a risk driver can or will lead to a catastrophic wildfire. GPI notes that this need is common to all utilities, not just PG&E. The utilities with risk quantification methods that more closely couple drivers with high wildfire risk conditions (e.g. weather) are not modeling risk drivers such as contact from object events that could presumably occur during low and high wildfire risk conditions. Both instances constitute

risk planning-model gaps and care should be taken to not misinterpret the latter as superior. GPI recommends expanding this requirement to all utilities and adding a quantitative component that requires utilities to report on progress towards quantifying dependence between wildfire risk driver (i.e. probability of ignition, LoRE) and consequence (CoRE). GPI suspects that data limitations could present a challenge to quantifying the dependence between some risk driver and consequence. A combination of qualitative considerations that leverage granular risk planning-model outputs for different risk drivers (i.e. risk-informed decision making) may help to close this gap. We also note that Table 4.2-2: Breakdown of Planned WMP Expenditures by Category, referenced in PG&E-22-01, does not appear to be the correct reference. The Draft Decision does not provide a table of “PG&E’s prioritized list of wildfire risks and drivers”. We recommend the following adjustments to PG&E-22-01:

**PG&E-22-01. Prioritized List of Wildfire Risks and Drivers.**

- o Description: Currently, PG&E’s prioritized list of wild fire risks and drivers (Table 4.2-2) weights the risk drivers by average outage multiplied by ignition rate; ~~it does~~ Utilities do not currently account for the likelihood of the ignition to cause a catastrophic wildfire.
- o Required Progress: In ~~its~~ the 2023 WMP, ~~PG&E~~ Utilities must work together to further refine ~~its~~ their prioritized list of wildfire risks and drivers. ~~It must do so by~~ This method should include quantitative and/or qualitative weighting for each risk driver by likelihood of causing a catastrophic wildfire (e.g., does this ignition tend to happen in high wildfire risk areas or during high wildfire risk conditions identified by PG&E’s risk models, including in the HFTD).
- o Discussed in Section 4.3, “Lessons Learned and Risk Trends.”

*PG&E-22-23 should include a requirement to provide a plan for reducing the necessity of UDS*

PG&E-22-23 addresses reducing the need for the Utility Defensible Space program. GPI recommends adding a plan element to this requirement, in addition to reporting on progress:

**PG&E-22-23. Reduce Necessity for the Utility Defensible Space Program.**

o Description: PG&E clears a 50-foot horizontal radial distance around some poles in the HFTD as part of its Utility Defensible Space (UDS) program. While Energy Safety believes UDS is effective, Energy Safety does not consider this activity to be a long-term solution.

Required Progress: In its 2023 WMP, PG&E must report on any progress made to reduce the need for the UDS program. PG&E must also provide a plan for achieving progress that extends through the 2023 WMP planning horizon and that takes affordability into account.

o Discussed in Section 4.6.5, “Vegetation Management and Inspections.”

GPI further recommends removing the reference to undergrounding as a specific alternative to UDS. PG&E should conduct a risk-reduction, cost-benefit assessment of alternative mitigations, and should not default to undergrounding as an alternative to UDS. GPI recommends removing the following text from the Draft Decision:

While Energy Safety believes UDS is effective, Energy Safety does not consider this activity as a long-term solution. Energy Safety would like to see PG&E decrease its UDS program over time as it implements other mitigations, ~~such as system hardening and undergrounding~~. PG&E must report on any progress made to reduce the need for the UDS program (2022 WMP Draft Decision PG&E, p. 118).

*The Draft Decision should update PG&E-22-16 to better reflect ongoing issues with undergrounding plans and the intersection of risk planning-model stability issues.*

GPI generally agrees with multiple statements in the Draft Decision regarding issues and concerns over PG&E's undergrounding plan, as well as its intersection with ongoing risk-planning-model instability. Some of these comments are not specifically or adequately captured in the Areas for Continued Improvement and Required Progress action items, including:

Furthermore, PG&E has not demonstrated that undergrounding is risk-spend efficient at the project level when compared to other grid hardening efforts (2022 WMP Draft Decision PG&E, p. 12).

PG&E must demonstrate an understanding of the impact of the changes made between its V2 and V3 models in order to further validate continued confidences in the risk model outputs, particularly relating to projects that may be stranded due to changes in prioritization (2022 WMP Draft Decision PG&E, p. 64).

And

PG&E must weigh a multitude of factors for its evaluation of system hardening alternatives and demonstrate that it has not primarily defaulted to undergrounding. In PG&E's 2023 WMP, it must provide further analysis of its decision-making process, demonstrating a full evaluation of system hardening alternatives including considering combinations of system hardening initiatives. This is discussed further in Section 4.6.8 (2022 WMP Draft Decision PG&E, p. 80).

And

Instead of primarily focusing on effectiveness against specific risk drivers present at particular locations, PG&E's current decision-making process for grid hardening appears focused on first selecting undergrounding as an initiative based on project feasibility. PG&E's decision-making flowchart considers risk model output and RSE evaluations further along in the process. This is concerning given that risk must be driving PG&E's decisions for mitigation. The flowchart and PG&E's decision-making is discussed further in Section 4.6.8.4, under "Resource Allocation Methodology (2022 WMP Draft Decision PG&E, p. 83).

And

Upon review, Energy Safety found that PG&E's system hardening decision-making flowchart does not give sufficient weight to quantitative factors such as costs, risk-reduction values, and RSE estimates. For example, the flowchart hierarchy prioritization is influenced more by construction limitations than by RSE estimates. This may lead PG&E to fast-track more expedient locations rather than considering the option with the highest RSE estimate. In addition, it is notable that PG&E's corporate decision-making mechanism heavily favors undergrounding. PG&E did not provide a thorough analysis of other mitigation options to demonstrate how alternatives factor into its decision-making process. Currently, PG&E's corporate decision-making process is particularly driven by whether undergrounding is feasible; if undergrounding is not feasible, another mitigation strategy is chosen. Energy Safety asserts that mitigation strategies must be chosen for a given area based on risk model output and prioritized by the risks present at that location. PG&E's goal must be to conduct a rigorous, quantitative analysis of alternative strategies that prioritizes a mitigation strategy according to highest risk, addresses risk by location, and uses limited resources effectively. Quantitative measures must have higher placement in the decision tree hierarchy than is currently shown. Additionally, PG&E should not default to undergrounding by focusing primarily only on feasibility, as discussed in Section 4.6.3. [2022 WMP Draft Decision PG&E, p. 143].

The above statements contradict the Draft Decision statement regarding Critical Issue RN-PG&E-22-03: PG&E is Not Adequately Focusing Grid Hardening Work, Particularly Undergrounding, on Highest-Risk Areas Based on Risk Model Output:

PG&E has resolved the critical issue described in RN-PG&E-22-03 because PG&E demonstrated that it is primarily prioritizing its future grid-hardening projects in areas deemed highest risk based on model outputs (2022 WMP Draft Decision PG&E, p. 78).

GPI recommends deleting the above statement and updating the Draft Decision to reflect the ongoing need for PG&E to stabilize its risk-planning model approach and to address the concerns raised regarding system-hardening decision making that does not adequately take into account cost, risk, and RSE. We further recommend clarifying expectations for

PG&E-22-16. Suggested additions below (underlined text) are adapted from and therefore directly align with issues raised in the Draft Decision, as quoted above:

**PG&E-22-16. Progress and Updates on Undergrounding and Risk Prioritization.**

- o Description: PG&E’s undergrounding plan is not currently broken out by year past 2023. Provide an updated spreadsheet with the locations and mileage for undergrounding broken out by year from 2024 to 2026.
  - Discuss how each project was prioritized based on risk and feasibility.
  - Demonstrated that undergrounding is risk-spend efficient at the project level when compared to other grid hardening efforts, including that it has not primarily defaulted to undergrounding. Conduct a rigorous, quantitative analysis of alternative strategies that prioritizes a mitigation strategy according to highest risk, addresses risk by location and uses limited resources effectively
  - Demonstrate an understanding of the impact of the changes made between its V2 and V3 models in order to further validate continued confidences in the risk model outputs, particularly relating to undergrounding projects that may be stranded, or have sub-optimal RSE, due to changes in prioritization.
  - Provide an update on the progress PG&E has made thus far in meeting its undergrounding targets, both past and future, including any changes made in resources and availability of labor.
- o Discussed in Section 4.6.3, “Grid Design and System Hardening.”

## Conclusions

GPI submits these recommendations for updates to the Draft Decision approving PG&Es 2022 MWP.

We urge the OEIS to adopt our recommendations herein.

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Respectfully Submitted,



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