Pacific Gas and Electric Company
Risk Spend Efficiency Post-Workshop Report
December 17, 2021

Pacific Gas and Electric Company (PG&E) is providing this post-workshop report in response to the request by the Office of Energy Infrastructure Safety (Energy Safety). In the report below, PG&E addresses the topics identified by Energy Safety. In this report, PG&E makes reference to two additional documents, "RSE Lite Tool Documentation and User Guide.docx" (RSE Lite Tool Documentation) and "Risk Modeling WP-1 PGE Enterprise Risk Model Documentation and User Guide.pdf" (Enterprise Risk Model Documentation and User Guide), which are included with this report.

PG&E looks forward to working with Energy Safety and parties on the review and evaluation of Risk Spend Efficiencies (RSE) and how RSEs can be more standardized across the utilities for use in their respective Wildfire Mitigation Plans (WMP).

1. RSE Calculation Methodology

Refer to Section (Sec.) 2 of the RSE Lite Tool Documentation beginning on page 3. The section provides a comprehensive overview of the RSE Methodology employed in PG&E's 2023 General Rate Case (GRC) and 2020 WMP.

<u>Risk reduction value determination</u>

Refer to Sec. 2.3 of the RSE Lite Tool Documentation beginning on page 5. For information on the baseline Risk Score calculations, refer to Enterprise Risk Model Documentation and User Guide Sec. 1.3.4 and 1.3.5.

<u>Total cost determination</u>

Total costs are described as an input to the RSE Lite Tool as described in Sec. 3.2.3 of the RSE Lite Tool Documentation beginning on page 12. PG&E uses its most up to date project forecasts for each program at the time of filing as provided by Subject Matter Experts (SMEs) and Project Managers (PM). For an explanation of how the Present Value of Revenue Requirement is incorporated into total cost for capital projects, refer to Enterprise Risk Model Documentation and User Guide Sec. 1.6.2.

<u>NPV determination</u>

Refer to Sec. 2.4 of the RSE Lite Tool Documentation beginning on page 6. See also Enterprise Risk Model Documentation and User Guide Sec 1.6.1.

<u>Walkthrough of a RSE estimate calculation from start to finish</u>

Refer to Sec. 2 of the RSE Lite Tool Documentation beginning on page 3.

Discussion of any assumptions within the calculations

Refer to Sec. 2.6 of the RSE Lite Tool Documentation beginning on page 7.

Anticipated changes to RSE calculation methodology from now to 2023 WMP

Changes to RSE calculation methodology are pending based on issues to be addressed in Phase II of CPUC Rulemaking (R.) 20-07-013 (Order Instituting Rulemaking to Further Develop a Risk-Based Decision-Making Framework for Electric and Gas Utilities).

2. RSE Estimate Verification Process

Confidence values of RSE estimates, including how the confidences were determined

PG&E has not established numerical confidence intervals or values for its RSEs because quantitative data to do so is generally lacking.

Range of uncertainty for the RSE estimates, including how those ranges were determined and how uncertainties are minimized

PG&E has not established a range of uncertainty for the RSE estimates.

How uncertainty affects the interpretation and utilization of the RSE estimates

RSEs are shown as a single number. PG&E recognizes that this approach can give the viewer the impression that a higher valued RSE is always a more worthy project than one with a lower valued RSE. This is not always the case due to uncertainty of the estimate, as well as factors that could be outside the control of the utility, such as weather and other natural forces.

Systems used to verify the RSE estimates

Systems used to verify RSE estimates	Key contribution of the system
SMEs	SMEs' competence in their programs to help facilitate conversations about relative ranking of a program relative to their own programs and also with programs they support, align to, enhance, or supersede.
Comparison against historical data	Assess if metrics such as tag rate, ignition rate, outage rate are indeed impacted as assumed in the RSE inputs.
Third-party assessment	Consistent and independent review of RSE inputs and estimates.

Cross-utility	Alignment of logic and approach can be checked.

Anticipated changes to RSE estimate verification process from now to 2023 WMP

PG&E's RSE estimate verification process will mature from lessons learned during review of initiatives for the 2022 WMP filing. One key feature of the change will be to incorporate more quantitative rather than qualitative components when possible. A second key feature will be continued education of SMEs to facilitate deeper understanding of how their inputs are used and sensitivity of different inputs for RSE calculations. Continued education includes exposing SMEs to other comparable and related programs to calibrate their understanding of their program compared to others. Another anticipated change is to support SMEs by expanding and capturing relevant data to inform both RSE inputs and lookbacks of key RSE related data points.

3. RSE Estimate and Initiative-Selection Process

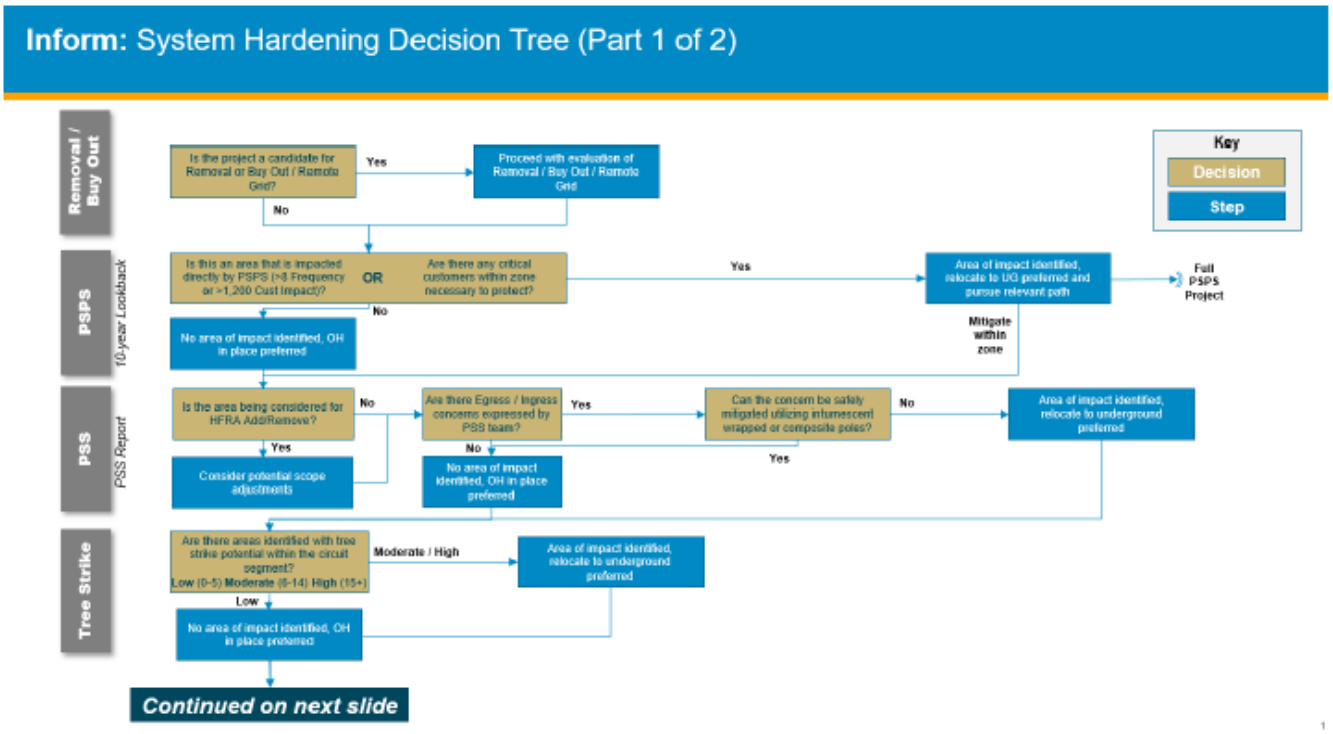
Overview of the Initiative-Selection Process

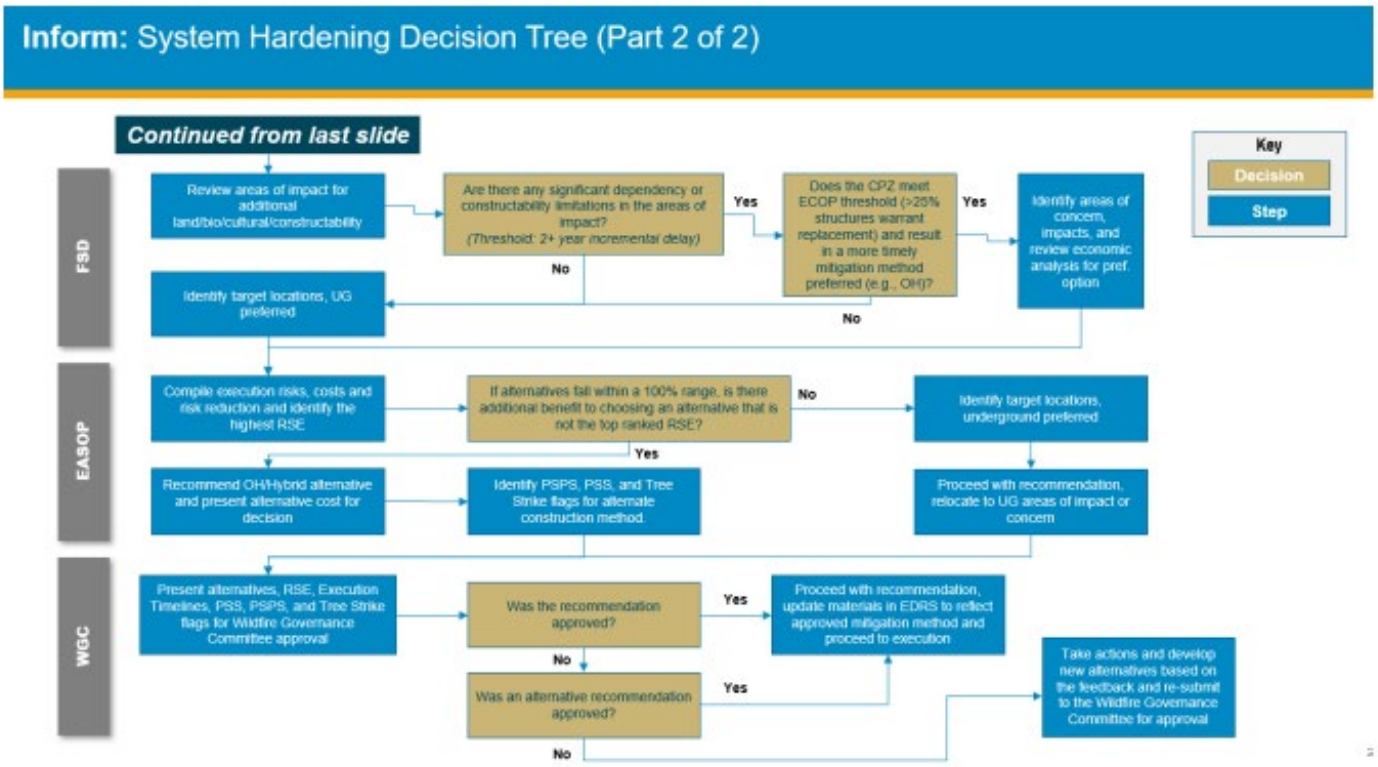
PG&E continues to evaluate how RSE estimates can be most effectively used in our decision-making process. PG&E also continues to expand the development and reporting of RSEs to help inform our decision-making.

How RSE estimates are considered when selecting a mitigation initiative

RSEs in the Wildfire Mitigation Plan are used in two ways. First, RSEs are used at the overall program level to compare different programs. Second, RSEs are used within a specific initiative to select between various options within that initiative. For example, RSEs are used within the System Hardening Program initiative at a project level to evaluate between different mitigation options such as line removal, overhead covered conductor, and undergrounding. The decision tree for System Hardening at a project level is shown in the figure below, which was also provided in the November 1st response to 2021 WMP Remedy 21-26.

MITIGATION DECISION TREE FOR SYSTEM HARDENING





How do RSE estimates compare to other decision-making factors

Currently RSEs are mostly used at the overall program level, to identify where one program can be seen as more beneficial than another for high-level planning purposes. Although PG&E has made substantial progress on developing RSEs for our WMP initiatives, RSEs cannot be used as the sole criteria for decision-making on projects within a specific initiative or for decision making between various alternatives. In addition to RSEs, execution constraints, planning, and execution lead times are some of the other decision-making factors utilized. Along with RSEs and other decision-making factors, we also take into account knowledge from the field and public safety specialists.

Anticipated changes to how RSE estimates are used for mitigation initiative selection from now to 2023 WMP

PG&E will continue to learn lessons from its RSE Governance oversight process and plans to leverage those learnings into further application of RSE. PG&E will also continue to expand the development and reporting of risk reductions and RSEs at the project level.