technosylva

January 19, 2026
Tony Marino
Deputy Director
Office of Energy Infrastructure Safety
715 P Street, 20th Floor
Sacramento, CA 95814

RE: Docket # WMP-Guidelines, SB. 254 Implementation

Dear Mr. Marino,

Technosylva respectfully submits the following comments in response to the Office of Energy Infrastructure Safety's ("Energy Safety") discussion questions regarding implementation of Senate Bill 254's cost-per-avoided-ignition requirements for Wildfire Mitigation Plans ("WMPs").

These comments are informed by Technosylva's more than 25 years of experience providing wildfire modeling, risk analytics, and operational decision-support software to electric utilities and fire agencies across the United States, including extensive experience supporting California utilities in WMP development, operational wildfire decision-making, and post-event analysis.

Technosylva's comments are intended to support Energy Safety's objective of developing clear, practical, and technically grounded guidance that enables utilities to comply with SB 254 while preserving analytical rigor and flexibility as wildfire risk modeling continues to evolve.

Framing Considerations for Cost-per-Avoided Ignition

Before responding to Questions 2–5 individually, Technosylva offers a framing observation drawn from both the workshop discussion and experience across jurisdictions:

Estimating "cost per avoided ignition" is inherently a risk-based, scenario-driven exercise.

Wildfire ignitions are variable events influenced by interacting environmental and utility infrastructure characteristics. As a result, avoided ignitions are most credibly

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estimated using probabilistic modeling and "what-if" scenario analysis, rather than direct historical counts alone. SB 254 implementation should therefore emphasize methodological transparency and internal consistency, rather than prescriptive formulas.

Responses to Discussion Questions

Question 2: How do you account for location-specific risk reduction benefits when calculating the cost efficiency of a project, especially when the cost estimate for the project is averaged over multiple circuit segments?

Wildfire risk, and therefore wildfire risk reduction, is inherently location-specific. As discussed during the SB 254 workshop, utilities increasingly evaluate risk at granular spatial scales, often at the asset or functional-location level, before aggregating results for planning or reporting.

In advanced wildfire risk modeling, baseline risk is calculated by simulating potential ignitions at individual assets under a range of weather and fuel conditions and estimating resulting fire spread and consequences.

Risk reduction from a mitigation initiative is then quantified as the difference between baseline and post-mitigation modeled outcomes at those same locations.

Where utilities rely on average cost-per-mile estimates, particularly for forecasting multi-year capital programs such as undergrounding or covered conductor, those averages need not obscure location-specific benefits, provided that:

1. Risk reduction is first quantified at a granular level (e.g., asset or segment), and

2. Aggregation occurs only after risk reduction has been calculated.

As several utilities noted during the workshop, this approach allows a project's cost-effectiveness to reflect the fact that a small number of high-risk segments may drive a disproportionate share of overall benefit, even when costs are averaged for planning purposes. From a modeling perspective, averaging costs in the denominator is acceptable so long as the numerator retains location-specific risk information prior to aggregation.

This methodology is consistent with how utilities already use wildfire modeling tools to prioritize mitigation projects and can be transparently documented in WMPs.

Question 3: How do you determine which ignition risk drivers are mitigated by which mitigation initiatives, particularly when initiatives address multiple risk drivers or when multiple initiatives address the same risk driver?

Wildfire ignition risk is driven by multiple underlying mechanisms, including equipment failure, weather conditions, vegetation interaction, and asset conditions. While certain data sources, such as wind speed or fuels levels, are valuable for short-term operational decision-making, they are generally insufficient on their own to support long-term wildfire mitigation planning.

Understanding which mitigation methods to use for each ignition risk driver requires an effective long-term risk assessment that leverages high-fidelity data on current asset, fuel, and weather characteristics combined with forward-looking climate and environmental projections, including future fuel models and weather patterns. This long-term view enables utilities to understand how wildfire risk is expected to change over time and to evaluate which mitigation initiatives are likely to be most effective under future conditions, not just current ones.

Equally important, long-term risk modeling requires regular updates to reflect mitigations that have already been implemented. Incorporating annual or periodic updates allows utilities to assess whether prior mitigation actions have achieved the intended risk reduction and to identify residual or emerging risks that may warrant additional or alternative mitigation measures.

Advanced wildfire risk modeling supports this process by enabling utilities to run "what-if" scenarios in which individual mitigations are added, removed, or adjusted. These analyses help utilities understand how different mitigation initiatives interact with specific ignition risk drivers over time and provide a defensible, internally consistent basis for attributing risk reduction across mitigation strategies and risk drivers.

Question 4: What baselines or counterfactuals have you considered when establishing "avoided" ignitions? How do you use proxies such as outages or wire-down events? Which risk drivers are challenging to estimate avoided ignitions for?

Avoided ignitions are most credibly estimated using counterfactual modeling, rather than reliance on historical ignition counts alone. Under this approach, utilities simulate wildfire risk under:

- Baseline conditions without a mitigation in place, and

- Identical conditions with the mitigation applied.

The difference in modeled ignition probability and consequence represents the avoided-ignition benefit of the mitigation.

Workshop participants appropriately noted that proxies such as outages or wire-down events can provide supplemental insight, but have important limitations:

- Not all damage and outages result in ignitions,

- Reporting practices vary across utilities and time periods, and

- Outage data often lacks the environmental context necessary to infer wildfire consequence.

Certain risk drivers, particularly those associated with extreme, low-frequency weather conditions, are difficult to estimate using historical data alone.

Physics-based wildfire modeling helps address this limitation by simulating plausible but under-represented scenarios, including tail-risk events that dominate wildfire consequence, such as the weather conditions surrounding the Eaton and Palisades fires.

Question 5: How do your risk-reduction values for mitigation initiatives account for risk reduced due to weather and environmental conditions?

Risk-reduction values for mitigation initiatives are most appropriately evaluated using long-term projections of weather and environmental conditions. As emphasized during the workshop, static risk assessments cannot capture the variability inherent in wildfire risk and may misrepresent the effectiveness of mitigation initiatives when viewed in isolation.

Durable risk reduction is demonstrated when mitigation initiatives reduce modeled ignition probability and potential wildfire consequences across a range of adverse weather and environmental conditions, rather than only under favorable conditions. Evaluating mitigation performance across multiple scenarios allows utilities to distinguish risk reductions attributable to mitigation investments from temporary reductions driven by short-term weather variability.

To support this assessment, risk analyses should be updated on a periodic basis to reflect both recent weather patterns and longer-term climate trends, ensuring that risk estimates remain dynamic over time and incorporate evolving conditions. Incorporating these updates also allows utilities to account for mitigations that have already been implemented and to reassess residual risk as conditions change.

This approach enables utilities to demonstrate that cost-per-avoided-ignition estimates reflect sustained, structural risk reduction, while still acknowledging that absolute wildfire risk will vary year-to-year based on environmental factors.

Closing Observations:

The SB 254 workshop underscored that estimating cost per avoided ignition requires transparent, repeatable, and risk-informed methodologies. Technosylva supports Energy Safety's efforts to develop guidance that reflects how utilities already assess wildfire risk in practice, while allowing flexibility as data quality, modeling techniques, and operational experience continue to improve.

We are happy to share our experiences working with regulators and utilities across the country on wildfire mitigation and are available to participate in any relevant workshops and offer demonstrations, as helpful.

If you have any questions or I can provide more information, please contact me at iratnathicam@tecnosylva.com.

Respectfully,

Indran Ratnathicam
Chief Growth Officer
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Background on Technosylva

Technosylva is the leading provider of wildfire and extreme weather modeling, risk mitigation, and operational response software. The company, founded in 1997, pioneered the application of wildfire risk analysis for electric utilities, enabling them to understand not just ignition likelihood but also the potential consequences of ignitions across their systems. Technosylva's wildfire modeling and risk analytics platform equips utilities with advanced tools to assess fire spread, impacts, and threats under both current and forecasted weather conditions.

These capabilities support daily situational awareness, proactive operational decision-making such as Public Safety Power Shutoff (PSPS) implementation, and long-term wildfire mitigation planning. Utilities use Technosylva's solutions to prioritize vegetation management, guide asset inspections and hardening investments, and improve risk spend efficiency by quantifying where mitigation actions will most effectively reduce wildfire risk. By combining validated wildfire science, real-time weather and fire data, and scalable cloud-based technology, Technosylva empowers utilities to enhance safety, resilience, and reliability in the face of growing wildfire threats.

Technosylva works with 20 utilities across the U.S., including PG&E, SCE, and SDG&E in California and 13 State Fire Agencies, including CALFIRE.