



# Comment Solicitation, Meeting Slides, and Recording

## Scoping Meeting on Climate Change in Wildlife Mitigation Planning

On July 25, 2023, the Office of Energy Infrastructure Safety (Energy Safety) held a scoping meeting on climate change trends influencing wildfire ignition risks around utility networks and potential impacts of climate change on utilities' risk and consequence modeling.

### Public Comment Process

Energy Safety invites written public comments on next steps for climate change integration into wildfire mitigation planning (e.g., scope, venue, and necessary resources). Written comments are due September 5, 2023, and must be no longer than 5 pages. Comments must be filed to the 2023-2025 Wildfire Mitigation Plans docket (#2023-2025-WMPs).<sup>1</sup>

### Meeting Recording and Slides

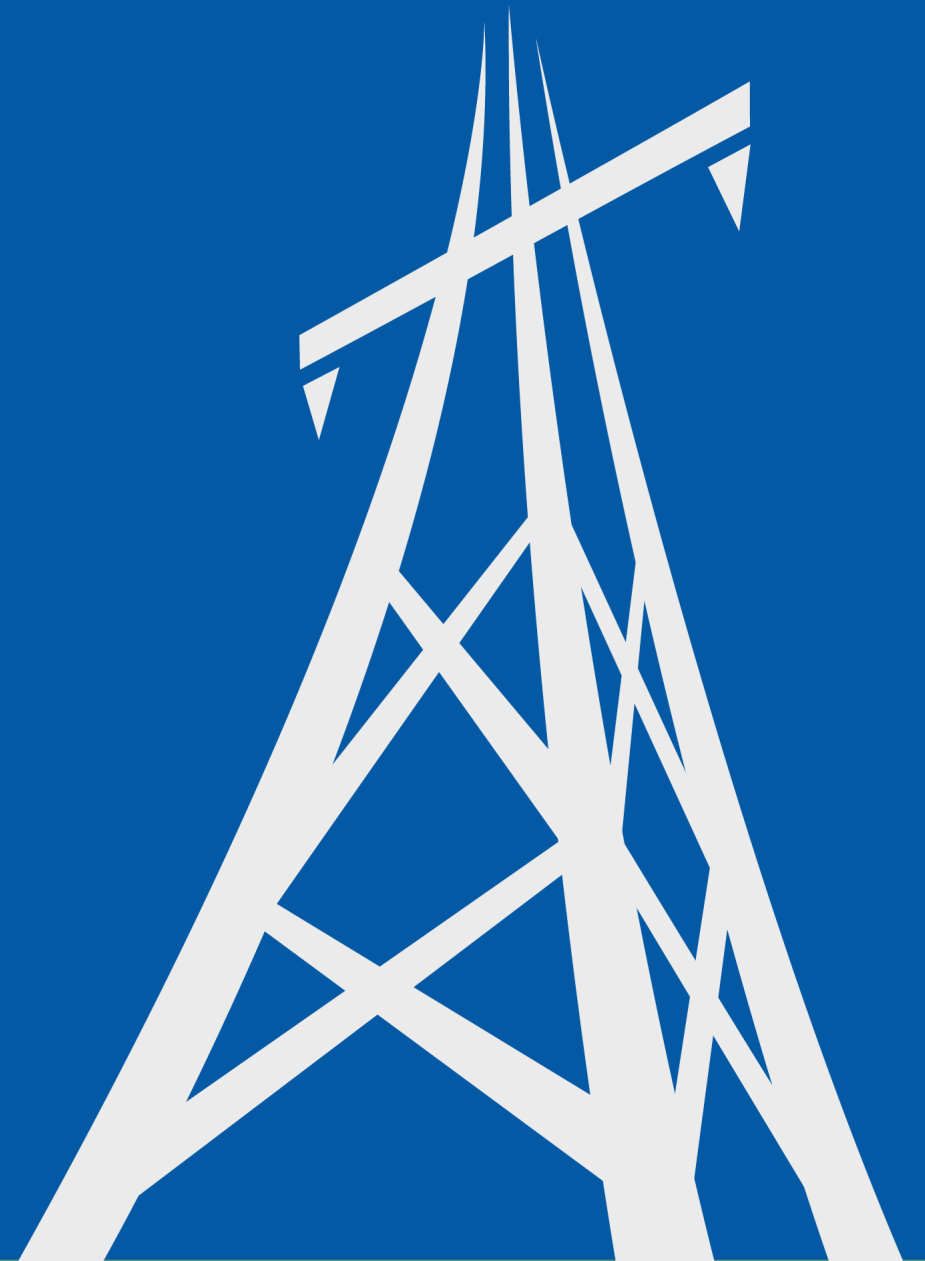
A recording of the meeting can be found on Energy Safety's YouTube channel at <https://youtu.be/zHJ0hku5QpY>. The slides presented by Energy Safety during the meeting are attached to this document.

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<sup>1</sup> <https://efiling.energysafety.ca.gov/EFiling/DocketInformation.aspx?docketnumber=2023-2025-WMPs>.

# Climate Change in Wildfire Mitigation Planning

Scoping Meeting  
July 25, 2023





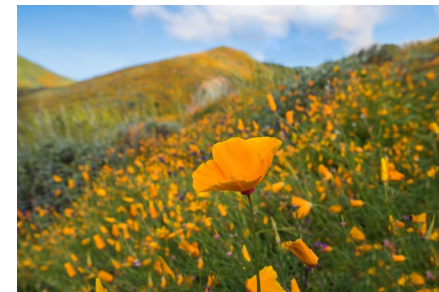
### **Welcome to Energy Safety's Climate Change Scoping Meeting:**

- Be aware of your surroundings
- Know your emergency exits and evacuation route
- Take regular breaks; get up and stretch
- Keep emergency contact information readily available

# How To Participate

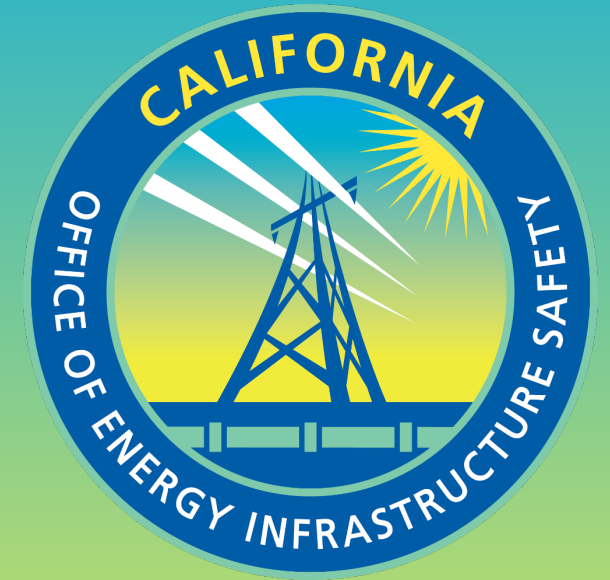
If you wish to make a comment:

- Press the “raise hand” button on Zoom, participants will be unmuted in order of hands raised
- Dial-in participants need to press #2 to raise hand
- Use Zoom’s Q&A feature to write a question. Questions will be read by the moderator.



# AGENDA

Time	Topic
09:00	Welcome and Safety Message
09:05	Introduction: Why Utilities Should Include Climate Change into Modeling
09:10	Cal-Adapt/Fifth Climate Assessment Progress
09:30	Presentation from IOUs
10:00	Panel on Heat
11:10	Break
11:20	Panel on Aridity
12:10-13:10	Lunch Break
13:10	Panel on Vegetation
14:00	Panel on Wind
14:30-14:40	Break
14:40	Introduction: Integrating Climate Change into Consequence Modeling
14:45	Discussion Between Energy Safety and Open Panel with Utility Experts
15:45	Next steps and close out





# Energy Safety Presentation

# PROBLEM STATEMENT



- Climate change trends are influencing variable periods of extreme wildfire risks, significantly increasing wildfire ignition risks around utility networks.
- Current industry standards and regulations do not provide adequate guidance on applying risk consequence modeling based on climate change factors such as aridity, heat, vegetation, and wind.
- The electrical corporations are currently pursuing their own efforts at integrating the potential impacts of climate change on their risk and consequence modeling.
- Further steps should be identified to actively collaborate on these efforts and fully take advantage of the existing climate change modeling expertise of state agencies and academic institutions.

# SCOPING MEETING GOALS



Energy Safety is hosting this initial scoping meeting to bring stakeholders, relevant state agencies, and California's electrical corporations together to:

- Discuss the challenges associated with integrating long term climate change into Wildfire Risk Consequence Modeling
- Learn from each other to better understand current research and modeling expertise
- Develop a plan for how best to collectively move forward
- Identify future topics to explore regarding the integration of climate change into consequence modeling and impacts related to wildfire and ignition risk



# DISCUSSION POINTS FOR TODAY



- Why include Climate Change in Risk Consequence Modeling?
- What climate change factors directly impact utilities' wildfire risk, such as heat, fuel load, aridity, wind, and vegetation?
- How much are utilities currently modeling climate change impacts?
- What tools, research and data sets are utilities currently leveraging? What should utilities be leveraging?
- How can utilities better integrate climate change into their Risk Consequence Modeling?
- Discuss existing modeling examples



## Which category best describes your affiliation?

- State Agency
- Federal Agency
- Local Government or Agency
- Electrical Corporation
- Member of the Public
- Other WMP Stakeholder





**What factors are important to consider when evaluating the impacts of climate change on wildfire risk?**

For instance, heat, aridity, vegetation, and wind are covered in today's panels.





# CEC Presentation



# IOU Presentations



# Panel Discussions



# Heat

- Dr. Jon Keeley (USGS)
- Dr. Patrick Brown (SJSU)
- Kristin Rounds (CPUC)
- Alex Pusch (SCE)



Heat is arguably the fundamental driver of climate change, and one of the driving factors affecting wildfire risk.

How does heat impact the various components relating to wildfire risk?





Are there common areas of interest for future work related to understanding the impacts of heat on wildfire risk?

# Panel Discussion: Heat



It's important for utility forecast horizons to extend to appropriate future time horizons when considering climate change impacts on assets and wildfire risk, with heat being one of the most important drivers of impact. Climate change substantially increases the chances of more extreme events in areas that currently experience extreme heat as well as the occurrence of extreme heat in areas that do not currently experience it.

- How do you approach prediction of new heat extremes?
- What timeframe should utilities evaluate extreme heat impacts in their models of wildfire risk, and how does uncertainty regarding extreme events impact this choice?
- How can we account for this in models?



With changes in heat also comes changes in population patterns and energy usage patterns.

How are these expected to change in relation to climate change, and how should utilities consider this when evaluating wildfire risk?

What resources exist that utilities can use for modeling purposes?



# Aridity

- Dr. Jon Keeley (USGS)
- Dr. Patrick Brown (SJSU)
- Alex Pusch (SCE)



What variables and factors outside of heat are important to consider when modeling aridity?



To what degree is aridity more uncertain than heat in climate change predictions?

How can this uncertainty be incorporated into wildfire consequence modeling while still provide useful outputs?



What extrapolations from existing data are useful to utilities for modeling aridity?



This past winter was wetter than average in California, with some precipitation models predicting an overall wetter future. However, even during wetter seasons, wildfires are still a major risk, particularly given higher heat events quickly drying new growth, leading to increased potential fuel for fires.

How should utilities be accounting for and modeling California's high interannual variability in precipitation?





How should utilities evaluate changing spatial extent of highly arid environments as a driver of future wildfire risk?



# Vegetation

- Dr. Jon Keeley (USGS)
- Dr. Alan Talhelm (CalFIRE)
- Heather Kane (SCE)



Both climate change and historical fires have led to a changing vegetation landscape across California, which varies wildly across and between utilities' service territories.

What sort of changes we may see as a result of climate change to ecosystem structure and overall fuel loading, and how this impacts wildfire risk?



In what areas and situations do you see climate change affecting vegetation the most?

How would this directly correlate with wildfire risk?



What other variables impact live fuel moisture and how are these likely to change in future due to climate change or other factors?



There are a multitude of ongoing efforts within the state to better vegetation health and hopefully reduce potential fuel for wildfire, such as the treatment of one million acres by 2025.

- Will these efforts have major long-term effects that should be accounted for when analyzing climate impacts on vegetation?
- How should utilities coordinate with these efforts in predicting vegetation changes?
- How might utilities maximize the benefits of these activities for purposes of reducing utility wildfire consequence in high-risk areas?



# Wind

- Dave Sapsis (CAL FIRE)
- Heather Kane (SCE)



Various models show inconclusive results for how climate change will affect wind patterns in the future, with some showing lower than current average wind speeds, and others showing higher. Others indicate changes in extent and timing of offshore (fire weather) winds.

What sort of conclusions can you draw from this?

What sources or models should utilities evaluate when modeling climate change impact on future wind events?





How should utilities be leveraging historical wind data and events for modeling out in the future?

Are there best practices for extrapolating from an observed dataset of wind speeds to future conditions?

Are there any known diagnostic variables for wind patterns within California that can be simulated under future climate change scenarios?

## Panel Discussion: Wind



Wind is a major driver when it comes to both ignition and consequence risk, with high wind events largely correlated with some of the most catastrophic fires in California.

With that, how should utilities be modeling out wind events and wind speed? Should it be based on averages or extremes?

How should utilities account for the fact that their observational weather station data is quite short and may not fully resolve even current extremes as a result?



As a result of climate change, dry periods following summer months have been extending deeper into fall when extreme wind events are more common.

How should utilities be accounting for this within their risk models?



# Integrating Climate Change into Consequence Modeling



Given today's discussion, what factors must utilities be including as part of their climate change evaluations?

Are there any major factors that were not discussed during today's presentations and panels?

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What models for climate change have utilities explored? What sort of factors are necessary for a model to be leveraged by utilities (i.e. granularity, validity, output format)?



One approach taken by utilities to date is to rely on periodic state level assessments of climate change impacts. Should utilities directly conduct some elements of this assessment in-house in order to more closely connect the questions asked to the risks utilities must manage? If so, how frequent should such assessment be and should it be done in collaboration with other utilities?

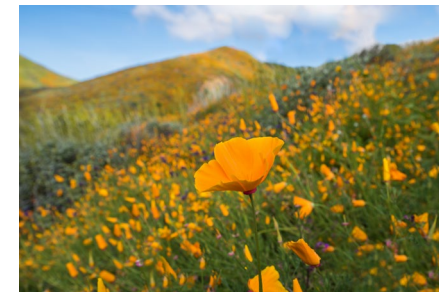
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Given the interrelationship of a multitude of factors, how should utilities be accounting for correlation, including balancing and addressing overcompensation of various risks?

## Time for Q&A

If you wish to ask a question:

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## Cross-Utility Approach Key Questions:

1. What key climate change factors should be considered for wildfire mitigation planning?
2. What are the first steps to integrating these considerations into consequence modeling?
3. Are there other areas where climate change could be included to better inform decision making?
4. What barriers are there to implementation?
5. Long-term vision: what should we work towards in refining our technical approach? What areas should be standardized? What might it look like in three years? In ten years?





## SCOPING MEETING

Discuss important areas to consider, available resources, and open areas that need more exploration in order to work towards establishing an initial framework for developing a wildfire consequence model that incorporates climate change.

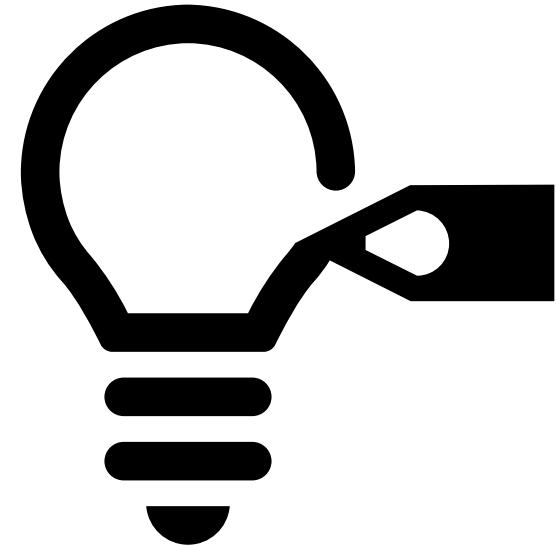
## PROPOSED FOLLOW-ON ACTIVITY

Create a consistent cross-utility approach and invite input for further refinement:

- Utilities to coordinate on developing a plan towards consistent approach?
- Submit written comments with suggestions?
- Additional meetings to discuss further (scoping meeting, working group)?



- 1) Accepting written comments of no more than 5 pages focusing on suggestions for next steps for climate change integration, including scope, venue, and necessary resources
- 2) Due in 30 business days, by September 5
- 3) E-file to the 2023-2025 WMP docket





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