

**PACIFIC GAS AND ELECTRIC COMPANY  
Wildfire Mitigation Plans Discovery 2023  
Data Response**

PG&E Data Request No.:	OEIS_001-Q002		
PG&E File Name:	WMP-Discovery2023_DR_OEIS_001-Q002		
Request Date:	April 5, 2023	Requester DR No.:	P-WMP_2023-PG&E-001
Date Sent:	April 10, 2023	Requesting Party:	Office of Energy Infrastructure Safety
DRU Index #:		Requester:	Colin Lang

**SUBJECT: REGARDING PG&E'S TARGETED TREE SPECIES (TTS) STUDY AND ITS TREE ASSESSMENT TOOL (TAT)**

**QUESTION 002**

On page 784 of its 2022 WMP Update, PG&E states "The results of our Targeted Tree Species study in conjunction with improving the Tree Assessment Tool (TAT) will allow PG&E to more accurately identify and mitigate trees at elevated risk of failure, providing better visibility into risk." On page 579 of its 2023-2025 WMP, PG&E states "We have evaluated the recommendations in the final [Targeted Tree Species] report and continue to analyze them and consider our go-forward actions."

- a) Since the Target Tree Species study was completed on March 31, 2022, what actions has PG&E taken and will take to implement the nine recommendations? Respond specifically to each of the nine recommendations.
- b) What improvements have been and will be made to the TAT in response to these recommendations and generally (i.e., not in response to these recommendations)?
- c) If PG&E is not using or planning to use its TAT, did PG&E make changes/improvements to the TAT before it decided to end its use? If so, what were those changes/improvements?

**ANSWER 002**

- a) Nine recommendations were provided to PG&E in the final report of the Targeted Tree Species Study that was completed in March 2022. PG&E has considered these recommendations and has taken action where we deemed appropriate. Below are the actions taken specific to each of the nine recommendations.

Recommendation 1: Implement a rule set, harmonized with O&I procedures, for TAT to record at species level, with only specified genus allowed as aggregates. Adopt definitions presented in OEIS Geographic Information Systems Data Standard, DRAFT Version 2.2 in Section 3.4.3 Ignition (Feature Class), Page 71.

Action Taken: An updated tree species list has been created that aggregates species at the genus level where appropriate. The updated tree species list is currently in process of being updated within One VM.

Recommendation 2: Outage and/or ignition investigations should record accurate (dual-phase GPS) positions and be assigned to an EVM circuit segment that correlates to geo-rectified and spatially conflated PG&E EDGIS digital twin vector data. Similar to PG&E Transmission VM, where possible, associate the O&I tree with a LiDAR tree segmentation ID to further improve tree locational accuracy, and future tracking.

Action Taken: Current electronic devices are able to capture accurate GPS positions due to technological improvements.

Recommendation 3: Track TAT abatement species compositions and compare to outage and ignition species distributions. Note potential over-/under-abatements. Over time, this can serve as a programmatic KPI.

Action Taken: Analysis for abatement species compositions compared to outage and ignition species distributions has been completed.

Recommendation 4: Harmonize Outage and Ignition (O&I) data with TAT data parameters.

- Fill out all O&I data fields
- To the best extent possible, perform a retroactive TAT analysis on future O&I trees
- Where possible, associate the O&I tree with a LiDAR tree segmentation ID

Action Taken: We have developed an updated outage and ignition investigation form that incorporates data parameters that will allow for increased data analytics. The updated form is in process of being digitized which will improve data consistency.

Recommendation 5: Increase green tree abatement rates for trees with no obvious defects. Consider scored abatements that add LiDAR metrics for overstrike distance, fall pathways to assets, tree position slope to alignment, and canopy exposure to wind.

Action Taken: The Revised weighting of observable defects was incorporated into the TAT update.

Recommendation 6: Use EPA Level III Ecoregions to aggregate Regional Species Fire Risk Rating scores. Use multiple years of data. Update annually.

Action Taken: The TAT update utilizes the recommended ecoregions.

Recommendation 7: Replace existing wind model scoring methods with a wind-event-driven representation that captures where wind-driven outages and ignitions are more likely, using either model proposed. The “Simple Wind Score Model” will result in more net abatements and may be more conservative. PG&E meteorology data should also be considered as the data have higher temporal and spatial resolution and are used across several important PG&E programs.

Action Taken: The TAT Update replaced the wind scoring with the recommended substitute.

Recommendation 8: Add H:DBH as a scored parameter for selected species.

Action Taken: The TAT update added HT:DBH as a scored parameter.

Recommendation 9: Create a species-specific stress index model for PG&E tree health and mortality. Employ the PG&E climate database and external environmental models to evaluate temperature, precipitation, evapotranspiration, and other environmental trends to evaluate relationships affecting TAT trees health and mortality. Consider both multivariate parameterized analysis and machine learning. Develop a framework that is recursive, and constantly learning/training from incoming new data.

Action Taken: Once PG&E receives the tree health data from its vendor it will continue to evaluate the feasibility of developing a species specific stress index model. PG&E is working on a tree growth model and tree species model which are related to elements of this recommendation.

- b) See response to subpart a) above under items 5-8.
- c) See response to subpart a) above. Updates to the TAT were made which included the items identified under items 5-8.