



Grid Safety & Resiliency Program

SCE's Bold Plan to Address the Increasing Wildfire Threat

The unprecedented scale of wildfires, like those that have hit both northern and southern California, make it increasingly clear that California needs to take additional steps to prevent and suppress wildfires.

Southern California Edison (SCE) is taking bold steps to help the state of California address its dramatically increasing wildfire risk. We are proposing to spend nearly \$600 million in the next two and a half years (2018-2020) on additional wildfire safety measures as part of our enhanced Grid Safety & Resiliency Program (GS&RP), which was the subject of the application we filed with the California Public Utilities Commission (CPUC) on September 10, 2018. We also will continue to work with state leaders on policies to reduce the risk of catastrophic wildfire damages while ensuring equitable distribution of costs.

GRID RESILIENCY & SAFETY PROGRAM ENHANCES WILDFIRE MITIGATION EFFORTS

SCE has long employed and regularly updated robust design and construction standards, vegetation management activities, and operational practices to mitigate wildfire risk. The increasingly extreme weather conditions brought about by evolving climate change have created a "new normal", in which the risk of devastating fires is higher and now lasts year round. This requires a comprehensive, year-round wildfire mitigation strategy. Our GS&RP goes above and beyond long-standing industry practices and focuses on three key areas: hardening our grid, bolstering our situational awareness capabilities, and enhancing our operational practices.

	Mitigation	Major Components ¹
Hardening Our Infrastructure to significantly reduce potential fire ignition sources Total Proposed Spend: \$410M	- Installing covered conductor (insulated wire) to reduce fire risk when objects contact power lines - Replacing poles carrying covered conductor with fire-resistant, composite poles - Installing faster-acting fuses to reduce the risk of fire ignition and reduce outage impacts caused by momentary circuit interruptions	Wildfire Covered Conductor Program: Targeted replacement of existing bare overhead conductor over approx. 600 circuit miles in high fire risk areas through 2020. Cost: \$291M Fusing Mitigation: Install fusing at 8,900 branch line fuse locations and replace fuses at up to 6,800 existing locations in high fire risk areas. Cost: \$90M
Bolstering Our Situational Awareness Capabilities to more accurately assess and respond to potential wildfire conditions Total Proposed Spend: \$41M	- Expanding in-house Situational Awareness Center meteorology team - Expediting fire detection and response time using HD cameras to pinpoint wildfire activity - Increasing the precision of our weather forecasting through weather stations and data modeling tools	HD Camera Installations: Up to 160 HD cameras covering up to 90% of Tier 2 and 3 areas by end of 2020. Cost: \$10.5M Weather Station Installations: Install up to 850 weather stations in high fire risk areas. Cost: \$15.3M
Enhancing Our Operational Practices to further strengthen fire safety measures and system resiliency Total Proposed Spend: \$131M	- Expanding vegetation management practices in high fire risk areas - Proactively de-energizing circuits (Public Safety Power Shutoff) during the most extreme conditions in areas where there is a high fire threat - Using infrared cameras to inspect circuits in high fire risk areas	Expanded Vegetation Management: Removal of up to 45,000 trees through 2020. Cost: \$118M Infrared Inspections: Perform full scan of all circuits in high fire risk areas in 2019/2020. Cost: \$0.9M

¹Lists only major components of each focus area. Does not include all program elements and associated costs that make up the total proposed spend.

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Taking a comprehensive wildfire risk mitigation approach ensures we make the right investments to reinforce our infrastructure, reduce fire ignitions and fuel sources, and enhance our situational awareness capabilities and emergency operations efforts so when there is a threat, we can act quickly.

We believe the mitigation measures listed in the table (front) operate in concert to protect the communities we serve and make our grid more resilient.

RISK ANALYSIS INFORMS MITIGATION STRATEGY AND PRIORITIZATION

Our portfolio of mitigation measures in the Grid Safety & Resiliency Program (GS&RP) were selected using a risk-based approach. We performed a risk analysis, using historical data on fire ignitions, to understand underlying drivers. These drivers yielded near-term (operational enhancements and situational awareness) and long-term mitigations (grid hardening) that we prioritized based on speed of deployment, geographic conditions, propensity for downed wire and other impact characteristics.

Risk assessments lead to better decision-making. That is why we are developing advancing modeling to predict when equipment might fail, based on its operational history and local environmental conditions, to enhance our prioritization of asset maintenance, upgrades and replacement work. In addition, the system would be able to analyze data from smart meters, remote fault indicators and other sensors to more quickly identify when power lines fall.

We are also seeking approval for an advanced computing platform that will be able to generate a Fire Potential Index that can compare current weather and moisture levels in both live and dead plants, trees and other vegetation against decades of data from past wildfire ignitions to scientifically quantify the risk. This information can be used to inform operational decisions, implement work restrictions and optimize resource allocation for emergency situations.



GRID SAFETY & RESILIENCY PROGRAM DEPLOYMENT TIMELINE

GS&RP is forecasted to be a long-term program (projected over eight years), but we are only requesting the CPUC's review of activities scheduled for 2018-2020.

