Hawaiian Electric's Wildfire Safety Strategy

The safety of our customers, employees and the communities we serve is our highest priority. Hawaiian Electric first began developing a Wildfire Safety Strategy in 2019 and continues to adapt it to address the elevated risks in Hawai‘i.

The Hawai‘i Emergency Management Agency named wildfires as the top hazard in the state as a part of its statewide hazard mitigation plan. Ongoing drought conditions, vegetation and potential impacts to the community, cultural resources and economy were all factors that contributed to the ranking.

Wildfire safety is everyone's responsibility. We collaborate with many partners – including first responders, emergency management agencies, government, military, customers and community members – to reduce wildfire risk across all islands.

Hawaiian Electric is taking action with a set of wildfire safety measures to reduce the risk of wildfires associated with utility infrastructure in service territory areas including:

Enhanced Safety Procedures

- Circuit breakers will be set to "trip" and shut off power quickly if a disruption is detected (known as "fast trip").

- Lines will remain de-energized until a visual inspection of the affected area is performed and deemed safe to energize.

- Visually inspecting the affected area provides an added safety measure but may lead to lengthier outages, especially at night.

- Spotters will be sent to strategic locations during certain weather events to watch for hazards, including potential ignitions. Spotters are trained to call system operators and emergency responders with information on unsafe conditions observed.

- Public Safety Power Shutoff (PSPS) may be initiated as a last line of defense against wildfires. Read more about PSPS on page 20.

Actions to Harden the Grid

- Expanding inspections of poles and lines using helicopters, drones, infrared and ground inspection.
- Addressing sag and tension in lines and adding spacers to reduce the potential for sparking.
- Switching from single-strand copper to aluminum wire or covered conductor in some areas.
- Replacing wood poles with steel poles in some areas.
- Continuing vegetation management preventative efforts adjacent to power lines within easements and County and State rights-of-way from the immediate vicinity of overhead lines.
- Using fault current indicators to quickly identify the location of faults.
- Installing cameras and weather sensors in critical areas. Video cameras assisted by artificial intelligence are one tool to gather on-the-ground data about potential hazards.

Longer-Term Action Plans

Utilizing a variety of tools to address continuing and emerging threats from extreme weather and climate change including:

- Providing more precision in wildfire-focused weather forecasting and risk modeling.
- Evaluating strategically undergrounding power lines in high-risk wildfire areas with critical evacuation routes. Undergrounding is not the right fit for all applications, as it can be extremely costly, technically infeasible and damaging to the environment and cultural resources.
- Expanding use of covered power lines, fast-acting fuses and fire-resistant poles and equipment.
- Seeking support for expanded hazard tree removal, wider rights-of-way and rights of access for clearing vegetation that threatens equipment.
- Collaborating with fire departments and emergency management agencies to refine the overall strategy.
- Seeking more federal funding for wildfire defense programs.

Visit hawaiianelectric.com/wildfiresafety for an interactive look at the actions we are taking to keep our communities safe.

Public Safety Power Shutoff (PSPS) Program

Utilities implement Public Safety Power Shutoffs (PSPS) to temporarily turn off power during high fire threat conditions to reduce the risk of electrical infrastructure sparking a wildfire. They will take place in specific areas that have been determined as high wildfire risks. PSPS is an important part of our overall Wildfire Safety Strategy to keep you and your property safe now and for years to come. These proactive power shutoffs are one way we can help prevent wildfires when certain conditions exist such as hot, windy weather in areas where dry vegetation surrounds our equipment. These conditions may lead to damaged powerlines or debris flying onto powerlines, which increases the risk of a fire starting.

We understand how much you depend on safe, reliable power, so our decision to implement a PSPS is made with great care. As the phases of our Wildfire Safety Strategy are successfully executed, a PSPS will be used as a last line of defense to keep our communities safe.

Alerting the Public

Before activating a PSPS, Hawaiian Electric will notify the public and coordinate with government officials, first responders and emergency response agencies. Hawaiian Electric will provide public notifications through news releases, social media, online outage maps and updates to its website. Providing 24- to 48-hour advance notice is planned, but if weather conditions change suddenly, shutoff may occur with little or no notice. Activate your emergency plan, keep your home survival kit handy and pay attention to notifications from Hawaiian Electric and its emergency partners.

You may hear from us through:

- Email
- Text
- Hawaiian Electric Mobile App
- Public Safety Notification
- Hawaiian Electric Website and Social Media
- News Media (TV, radio and websites)

Emergency Outage Communications Form

To ensure that you receive timely notifications and information about a potential PSPS outage, confirm your contact information via your online account at **hawaiianelectric.com/myaccount**.

If you are not an electric account holder but wish to be alerted of a PSPS, go to **hawaiianelectric.com/pspsalerts** and fill out an Emergency Outage Communications Form.

Medical Needs Communications Form

If you or someone in your family uses a life-support device, complete the Medical Needs Communications Form at **hawaiianelectric.com/medicalneedsalerts** to receive additional advance notifications of a power outage when possible.

The PSPS Process

No single factor drives PSPS. We carefully review a combination of criteria when determining if power should be turned off for safety. These factors generally include forecasts of strong winds and very low humidity levels, along with critically dry vegetation and on-the-ground observations from field crews.

There are three primary criteria for declaring a PSPS (keeping in mind that every situation is unique):

- Persistent drought conditions
- Wind gusts 45 mph or higher
- Relative humidity below 45%

It's important to know that a National Weather Service Red Flag Warning DOES NOT automatically trigger a PSPS. Red Flag Warnings have not been issued every year and wind gusts above 45 mph are rare in most areas in summer months.

We have also begun deploying a network of high-resolution video cameras using artificial intelligence (AI) technology and weather stations to provide enhanced situational awareness and early detection of ignitions in elevated fire risk areas near company infrastructure.

Here's what happens before, during and after a PSPS:

PSPS Alert	Happening	Restoration Begins	Restoration Complete
24-48 hours before a possible PSPS	During a PSPS	When it's safe	PSPS is over
Weather data, including statements from the National Weather Service, indicate conditions for heightened wildfire risk, and we are considering a PSPS. We'll do our best to provide advance notice, but if conditions are suddenly hazardous we may have to shut off your power with little or no notice. Activate your emergency plan, keep your home survival kit handy and pay attention to notifications from Hawaiian Electric and its emergency partners.	Power is shut off only in high wildfire risk areas for the safety of the community. We'll do everything we can to provide regular updates across multiple media platforms during the event.	Once the fire weather threat has ended, crews will begin patrolling, looking for downed lines and other hazardous conditions and making necessary repairs. Crews will restore power once it's safe, which may take hours or even days depending on the location and extent of damage.	The immediate threat has passed and power has been restored. But we'll continue to monitor conditions so we can keep our customers and communities safe.

During a PSPS activation, power will remain shut off so long as hazardous weather conditions persist. When the weather improves, power lines must be inspected and damage must be repaired before service can be restored, which may involve ground crews and aerial inspections using helicopters and drones. This process may result in extended outages lasting several hours, possibly even days depending on the location and extent of any damage. Residents in PSPS areas should be prepared in advance.

PSPS Areas by Island

We've identified specific areas on each island that have high wildfire risk and may be subject to a PSPS. The areas were developed with information on fire history, wind data, vegetation, evacuation routes and the location of Hawaiian Electric infrastructure.

To check if you are in a PSPS area or to view the PSPS maps for each island, visit hawaiianelectric.com/pspsmaps

PREPARING for a PSPS

- Turn off and unplug all sensitive equipment (e.g., computers, TVs, etc.).
- Plan ahead for meals as your stove and microwave may not be available.
- If you have a refrigerator/freezer, take all necessary measures to protect any perishable items. Check the seals on appliance doors to ensure they are well insulated.
- Consult with your solar contractor for questions pertaining to rooftop solar and/or battery systems, and how to prepare for the temporary outage.
- Assess all safety systems and alarms with an electrical connection to determine the impact the outage may have on them.
- Learn to manually open any electric security gates and garage doors (e.g., check openers for manual-release operation) or park your vehicle outside before the scheduled outage.
- Invest in surge protection for your equipment.
- Never plug a portable generator's power into a household outlet because electricity may backflow into utility lines, creating a safety hazard for utility personnel. For tips on how to safely use a generator at home, visit hawaiianelectric.com/generatorsafety.

Customers With Medical Needs

Power outages may be serious for people who use electricity and battery-dependent assistive technology and medical devices, including respirators or ventilators, power wheelchairs, oxygen or home dialysis machines. Power outages may also be serious for customers who rely on medication that requires refrigeration.

To prepare for a power outage:

- Identify a backup location where you can go if necessary.
- Consider a safe backup power source, such as an electric generator, and follow all the manufacturer's instructions to operate your generator safely.
- Regularly check that your backup or alternative power source is working properly.
- Teach family and friends how to operate your equipment and backup systems.
- Label your equipment with your name, contact information and clear instructions on how to operate the equipment.
- To the extent your device uses a rechargeable battery, maintain spare batteries and keep them fully charged.
- Maintain a supply kit with a cooler for medicine storage.
- If you use a ventilator, keep a hand-held resuscitation bag on hand.
- If you depend on dialysis or other medical service, check with your provider about their service plans during an emergency.
- If you use oxygen, check with your provider to determine if a reduced flow rate can be used to extend the life of the system. If possible, have backup canisters available.
- If you use a motorized wheelchair or scooter, have a lightweight manual wheelchair available for emergency use.

What To Do DURING a PSPS

- Keep refrigerator/freezer doors closed.
- Unplug or turn off the circuit breaker to any sensitive electronics or appliances, as a power surge may occur when power is restored.
- Be aware that narrow road conditions may require crews to block traffic near the work area so that they can access equipment and vehicles.

What To Do AFTER a PSPS

- Safely turn off your generator.
- Once power has been restored, check equipment and gradually turn on essential items one by one.
- For customers with rooftop solar and/or battery systems, consult your solar contractor regarding how to check and reset the main control panel if your system is not working.
- Your household controls electric service through a circuit breaker panel or fuse box. If power has been restored to your neighborhood after a PSPS, but some or all of your power is still not functioning in your home, check your circuit breaker to see if any of the fuses have tripped and need to be reset.

Power Restoration After a PSPS

Hawaiian Electric will restore power as quickly as possible on our islands, with safety as our top priority. Whenever it is possible to safely take some of these steps in parallel, we will do so. Even if you don't see Hawaiian Electric in your neighborhood, be assured we are working to restore power as quickly as possible. We appreciate our customers' patience.

1. SAFETY FIRST FOR CUSTOMERS AND CREWS
   The safety of the public and our crews is our top priority. Before reenergizing circuits that were turned off due to a PSPS, we need to identify and eliminate any potential hazards. For the safety of our employees, assessment cannot begin until hazardous conditions have passed. Manual inspections can be time-consuming.
2. DAMAGE ASSESSMENT AND CLEARING
   We must determine if there was any damage to utility equipment while the power was off. Crews will begin patrolling, looking for downed lines and other hazardous conditions. If damage is identified, we will determine the extent and the materials or equipment needed to make repairs. Trained personnel must visually inspect affected circuits prior to reenergizing to ensure that it's safe to restore power. We also must address accessibility issues, including tree trimming, making trails and/or helicopter landing/staging pads, debris removal, trenching and draining flooded underground systems.
3. ASSESS MAIN TRANSMISSION LINES AND SUBSTATIONS
   If needed, we first assess main transmission lines and substations that serve as the backbone of our electric system. Substation inspections may be needed to determine if there are any problems stemming from lines feeding into the substation or the substation itself. Repairs sometimes require creating trails through vegetation or using helicopters to fly in materials, equipment and personnel to remote locations.
4. ASSESS NEIGHBORHOOD CIRCUITS

Poles, equipment, lines and/or underground cables in affected neighborhoods are inspected. Often, at this stage, we can incrementally restore customers in sections of the circuit that we have completed inspecting.

5. ASSESS SERVICE LINES AND RESTORE POWER TO INDIVIDUAL CUSTOMERS
   Our crews then assess individual service lines and verify customers' electrical connecting points are safe to use so the remaining customers in affected areas can be restored.
6. FULL CIRCUIT RESTORATION
   We then restore the system to its regular condition. Any customers still out of power at this point should report the outage. This report helps us learn about any outages affecting smaller pockets of customers and we can then focus on restoring power to those customers. See the phone directory in the back of this book for the outage reporting phone number on your island. O‘ahu customers may also report outages online at hawaiianelectric.com/reportoutage.