

## Community Wildfire Safety Program Open House Webinar July 22, 2019

- Narrator: This video is a webinar. In the first 35 minutes there are a succession of Powerpoint slides. The opening slide reads: Community Wildfire, Safety Program Webinar, July 2019
- Donna: It is now my pleasure to turn today's program over to Mr. Matt Pender. The floor is yours.
- Matt Pender: Thank you, Donna. Welcome everyone and thank you for taking the time to join us this evening for this informational webinar. Before we get started, I'd like to take a moment to make sure everyone is safe and aware of your surroundings. Here at PG&E, we start every meeting with a safety moment to ensure that we are safe to start. This includes making sure everyone knows the escape routes, where we would meet up if we had to evacuate the building we're in, how to access any safety tools necessary, like a first aid kit or an AED, who is CPR first aid trained, who will call 911, and where to seek cover in case of an earthquake or an emergency like that. Obviously, we never know when an earthquake or a health emergency will occur, so I encourage everyone to take a moment to think about your safety during tonight's webinar and also to discuss your safety plan with your family, roommates, co-workers, etc.
- Matt Pender: We have done that here in our room in San Francisco. So since we're safe to start here, we'll go ahead and begin tonight's webinar. My name is Matt Pender as Donna mentioned, and I'm a director within PG&E's Community Wildfire Safety Program. I'm excited to be here tonight to share with you more information about our wildfire safety activities. I personally have participated in a number of the 14 in-person open houses that PG&E has had throughout our service territory in the last couple of months. We also have nine more scheduled through about mid-August if you'd like to join us in person for one of those informational sessions, which will cover similar material or has similar material as what we'll cover tonight. That schedule of events is posted on our website at [pge.com/wildfiresafety](http://pge.com/wildfiresafety). So feel free to visit there for more information and also for that open house schedule.
- Matt Pender: This is our second webinar to reach additional customers who maybe are not able to meet us in person or the timing didn't work out, and we hope it is helpful and informative for you. As Donna mentioned, we are recording tonight's presentation and intend to post it to our website in the near future for additional participants to be able to follow up on that. Please note during tonight's webinar that we have gotten reports in the past of a little bit of a lag. There's a slide deck that we will go through, and sometimes we will say on the next slide you'll see this, and some of our participants have noted that it is a

little bit slow to click through on their screen. Please use the F5 button to refresh, that may help, or just be patient for a second or two and it'll come through.

Matt Pender: So with those administrative things out of the way, following the 2017 and 2018 wildfire, PG&E established the Community Wildfire Safety Program to take additional precautionary measures to further reduce the future risk of wildfire in our service territory. This is because nothing is more important to PG&E than keeping our customers and communities safe. And we know that safety is a collaborative effort that involves PG&E, local governments, first responders, individual customers, and many others. So we really appreciate you all being on the call this evening to learn and get educated about what PG&E is doing and think about what you can do to help prepare yourselves, your community, your family, and others. This evening, Aaron Johnson, a Vice President in PG&E's Electric Operations Organization will give a presentation about our wildfire safety efforts.

Matt Pender: Following that presentation, we will answer your questions, which you can submit through the webinar tool at any time. If you'd like to ask a question, as Donna mentioned, please click on the green button that says Q&A in the bottom left-hand side of your screen and type your questions. Based on the volume of questions we got during our first webinar, we may not be able to get to every single question or every answer tonight. If we are not able to get to your question, we do have a dedicated email address, [wildfiresafety@pge.com](mailto:wildfiresafety@pge.com), where our team will respond promptly to any questions that you have, either after this or that we weren't unfortunately able to get to during tonight's webinar. So with that, I'd like to turn it over to Aaron Johnson to begin the presentation.

Narrator: On the right side of the slide there is a photo of a blue PG&E truck on a country road. It is lined with large trees and power lines. The heading on the top of the slide says, "What We'll Cover". Bullet points listed below say:

- Introductions
- Community Wildfire Safety Program Overview
- Real-Time Monitoring and Intelligence
- Enhanced Vegetation Management
- Wildfire Safety Inspections
- System Hardening and Resiliency
- Public Safety Power Shutoff
- Q&A Session

The bottom of the slide says: PG&E's Community Wildfire Safety Program implements additional precautionary measures intended to further reduce future wildfire risk.

Aaron Johnson: Good evening everyone, and thanks for joining us. Thanks, Matt, for that introduction. Really appreciate you being here and taking the time, as Matt said, to learn more about what we're doing here at PG&E with the Community Wildfire Safety Program. As you see on the screen right now, what we'll cover tonight, we've gotten through the first couple items. We'll do an overview of the Community Wildfire Program and then delve a little deeper into a number of the programs, what we're doing to improve monitoring and intelligence, vegetation management, enhanced inspections of our equipment, hardening of the electric grid, and then the Public Safety Power Shutoff program. I'll speak for probably about 30 minutes, and then we'll take questions for the remainder of the time.

Aaron Johnson: So as Matt indicated, after the devastating wildfires of 2017 and 2018, it was very clear to all of us at PG&E that we needed to do more, and with a greater sense of urgency, to adapt and address the threat of wildfires and extreme weather in our service territory.

Narrator: The heading on the top of the slide says: Community Wildfire Safety Program. It has three sections. The first section has an icon of a light bulb in blue above it and reads: REAL-TIME MONITORING AND INTELLIGENCE - Coordinating prevention and response efforts by monitoring wildfire risks in real time from our Wildfire Safety Operations Center. Expanding our network of PG&E weather stations to enhance weather forecasting and modeling. Supporting the installation of new high-definition cameras in high fire-threat areas

The second section has an icon of a clipboard in yellow above it and reads: NEW AND ENHANCED SAFETY MEASURES - Further enhancing vegetation management efforts to increase focus on vegetation that poses a higher potential for wildfire risk. Conducting accelerated safety inspections of electric infrastructure in high fire-threat areas. Disabling automatic reclosing of circuit breakers and reclosers in high fire-risk areas during wildfire season. Proactively turning off electric power for safety (Public Safety Power Shutoff) when gusty winds and dry conditions combine with a heightened fire risk

The third section has an icon of a person in a hard hat in green above it and reads: SYSTEM HARDENING AND RESILIENCY - Installing stronger and more resilient poles and covered power lines, along with targeted undergrounding. Upgrading and replacing electric equipment and infrastructure to further reduce wildfire risks. Working with communities to develop new resilience zones to provide electricity to central community resources during a Public Safety Power Shutoff event.

The bottom of this slide and all further slides reads: Following the wildfires in 2017 and 2018, some of the changes included in this presentation are contemplated as additional precautionary measures intended to further reduce future wildfire risk.

Aaron Johnson: We really wanted to take some bold actions to move away from a business as usual approach and to really help drive safety within the communities that we serve. So what are we doing? We really devised three pillars of this program. The first is enhancing real-time monitoring intelligence, the second, new and enhanced safety measures, and the third, system hardening and resiliency. I'll speak to each of these in a little bit, and we're going to cover most of the bullets that you see on this page in more detail in this presentation.

Aaron Johnson: I think it's important to recognize that as you move from left to right, these are the things that we were able to do on the left side immediately. And in the near and medium term, and as you move to the right, these are the things that we will be doing over many years as we make changes to our electric grid and the infrastructure that we operate and maintain. So, in the first column, real-time monitoring intelligence, the first element is we stood up a community wildfire, or rather the Wildfire Safety Operation Center. This is a 24-7 center that really monitors fire activity across PG&E's 70,000 square miles that we serve to help make sure that we are coordinating our operational activity with potential fire risk and active fires in our service territory.

Aaron Johnson: We are expanding our eyes and ears by adding both weather stations. We've added, I think as of today, 470 since last year, 270 this year with another 130 coming soon by September 1st. And the idea here is we really need more intelligence in the system. This isn't a proprietary network. We've made these weather stations available to the public, and they're available through websites that you may be looking at for weather, like the national weather service. So we're really augmenting that network in the state or in our service territory. And then coupling that with high-definition cameras that will allow, on many mountain tops and other high points, that will allow both PG&E and various fire agencies that have access to those cameras to zoom in and really look at situations that may be emerging with smoke or fire.

Aaron Johnson: In the middle, we have our new and enhanced safety measures. So the first is really enhancing our vegetation management. And going well beyond the compliance requirements, we have to really take a risk-based approach to enhancing how we manage the vegetation that's in near proximity to our power lines. Also, conducting accelerated safety inspections... okay, so this is Aaron Johnson with PG&E back. My apologies for the technical challenges. Thank you for those of you that emailed in to let us know that we'd lost the audio, and apparently, we left off in the middle of new and enhanced safety measures.

Aaron Johnson: So where I was speaking was obviously about the enhanced vegetation management that we're doing in our service territory to go above and beyond simply the compliance requirements to really look at how do we reduce the risk from vegetation coming in contact with our lines, accelerated safety inspections on all of our overhead electrical infrastructure in the highest fire-prone areas, disabling certain technologies on our electric grid that are designed to help improve reliability of that system, but which if they were to operate during high-fire danger conditions, have the potential to be a source of spark if a line were down. And so disabling that technology during the highest fire danger conditions.

Aaron Johnson: And then finally, a program that I know has been in the news a lot and it's probably a great source of interest to folks on the line, which is the Public Safety Power Shutoff program. And this is when we see strong winds and very dry conditions that are heightening fire risk, and it really becomes unsafe for us to operate the system. So we'll obviously speak about that in more detail in this presentation. And then finally, on the right, system hardening. This is really where we improve the overall resiliency of the system by installing stronger and more resilient poles, using different materials for polls, either bigger ones or different composite types of material, new cross arms on our infrastructure covered wire, different configurations on the power poles to prevent lines from coming in contact with each other, and targeted undergrounding as well.

Aaron Johnson: We're going to be updating and replacing equipment across our service territory, but especially focused on the highest fire risk areas. And then also working with communities to develop resilience zones, where we've hardwired the infrastructure so that in a possible Public Safety Power Shutoff program, there is a certain portion of a community that is safe to operate in those more elevated and extreme kind of weather conditions that would lead to a Public Safety Power Shutoff, so there are resources for the community nearby where there is still power. So let's cover each of these in turn now.

Narrator: The heading on the top of the slide says: Real-Time Monitoring and Intelligence There are two photos on the right side of the slide. The top one is of PG&E's Wildfire Operations Center and shows a person with short dark hair sitting in front of two rows of computer screens that display various maps and other images. The bottom photo shows a male PG&E worker wearing a safety vest and hard hat in a bucket truck above a country road holding what looks like a modern weather-vane. The photo reads "weather system installation."

The slide says - MONITORING wildfire risks in real time from our 24/7 Wildfire Safety Operations Center and coordinating prevention and response efforts.

INSTALLING approximately 1,300 new weather stations by 2022 Data available at mesowest.utah.edu. SUPPORTING the installation of approximately 600 high-definition cameras by 2022. Images available at alertwildfire.org

Aaron Johnson: The first is real-time monitoring intelligence. This is our 24-7 Wildfire Safety Operation Center. Again, there's a picture of it on the slide that will be on your screen shortly. And the idea is that we're monitoring a variety of different weather resources and fire prediction tools to have a better sense of how fire may potentially affect the operations of our system, and then obviously, how to coordinate with first responders if there is actual live fire in the communities that we serve. I mentioned this in the overview about the weather stations and the cameras. Again, these are really improving our ears and eyes on the electric grid and across our service territory. And the idea here is that as we add this intelligence that we share this actively with the emergency management and first responder community so that they can use these same tools that we are investing in our system. Moving on to the next slide.

Narrator: The heading on the top of the slide says: Enhanced Vegetation Management. On the right side there's an illustration of a row of power poles with electric lines situated between tall trees. There are 4 dotted circles around different parts of the illustration showing various distances from the power lines to the trees. The slide says: We are expanding and enhancing our Vegetation Management Program to further reduce wildfire risk. Our enhanced vegetation management work includes the following: Meeting state standards for minimum clearances around the power line. Addressing overhanging limbs and branches directly above and around the lines. Removing hazardous vegetation such as dead or dying trees that pose a potential risk to the lines. Evaluating the condition of trees that may need to be addressed if they are tall enough to strike the lines. We are working to complete this important safety work in high fire-threat areas over the next several years.

Aaron Johnson: This is our enhanced vegetation management program. We are really trying to go above and beyond the compliance requirements. You see a diagram on the right here in this slide, and it shows you what our compliance requirements are, which is a four-foot radius around our electrical infrastructure. In order to maintain that four-foot standard at all times, we will often cut back 12 feet or more at the time of cut to make sure that the vegetation does not grow into our lines in between our periodic, inspections of that.

Aaron Johnson: In addition, going beyond these requirements, we are trying to clear overhanging limbs and branches that are directly above and around our lines to hopefully reduce the possibility of those falling into our lines. We're also looking to remove dead and dying trees that pose a potential risk to our equipment, as well as evaluating trees that are tall enough, that if they were to fall over, could potentially fall into our lines. And really, the idea there is looking for specific

species of trees that have a very detailed database of how vegetation affects our infrastructure with well over 20 years of data in it. And the idea is which trees potentially have the most propensity to drop limbs or such, and really going and doing an extraordinary effort to trim those trees within the fall zone of our equipment. All of this is highly focused on the most elevated and extreme high fire-threat areas in our service territory as designated by the California Public Utilities Commission in consultation with the Utilities and Cal Fire. And so we're really targeting those areas for this enhanced vegetation work.

Narrator: The heading on top of the slide says: Wildfire Safety Inspections. On the left side of the slide there is a photo of large high voltage transmission lines on lush rolling hills with clouds in the sky behind them.

The right side of the slide says: We are conducting accelerated safety inspections of electric infrastructure in areas of higher wildfire risk (Tier 2 and Tier 3). As of May 31, 2019, through the Wildfire Safety Inspection Program (WSIP) inspections, we have completed: Inspections of 99% of nearly 700,000 distribution poles in, or adjacent to, high fire-threat areas. Inspections of 98% of nearly 50,000 transmission structures in, or adjacent to, high-fire threat areas. Inspections of 100% of 222 substations in high fire-threat areas.

Aaron Johnson: Next, I'd like to cover our wildfire safety inspections. So we have been conducting additional inspections of all of our infrastructure in these higher wildfire risk areas, the so-called tier 2 and tier 3 areas. At the end of may of this year, we had completed 99% of those inspections on the nearly 700,000, distribution poles in or adjacent to these high fire-threat areas, and 98% of the transmission structures in or adjacent to that, and then 100% of the equipment within our many substations in the same areas. The only places where we have not done these inspections now is really any remaining areas where there's really challenging access issues, which predominantly has been snow for us in some of the higher elevations after the big weather year we had last year. So the idea here is to really find any problems we can on our system and to fix those as soon as possible. So moving to the next slide.

Narrator: The heading on the top of the slide says: Inspections Overview. The slide has four sections. The first shows a blue icon of power poles and reads: Accelerated inspections of transmission and distribution poles and towers as well as substations in high fire-threat areas. The second shows a green icon of a worker in hard hat and reads: Visual inspections (ground and/or climbing) performed by crews of up to four people. The third shows a yellow drone icon and reads: Aerial inspections by drones to complement and further enhance inspections. The fourth shows a blue helicopter icon and reads: Helicopters for inspections and to deliver crews to remote locations. At the bottom of the slide it says: All

inspection findings are documented with photographs and reviewed by a dedicated and experienced team to evaluate conditions for necessary repairs and timing.

Aaron Johnson: This provides a little bit of an overview of the rigor that goes into that inspection process. So we do visual inspections from the ground. We also have crews that are often climbing, especially the transmission towers to inspect them for potential concerns. We are also doing aerial inspections using helicopters and drones. We are taking high-definition photos of what we find on that equipment and bringing all of that data and information back to centralized teams that are looking at what we're seeing on our infrastructure and making assessments of what actions are necessary in order to keep that equipment operating safely. And so again, the idea is a mentality of find it and fix it. So let's find out anything we can that's problematic on our system, especially in these high fire-threat areas and fix that as soon as possible. When we look at those inspections, moving onto the next slide...

Narrator: The heading on the top of the slide says: Electric System Maintenance and Repairs. On the left side there is a photo of three PG&E field worker in safety vests and white hard hats helmets digging up and old power pole. Above the image it says: We are evaluating inspection results to determine repair needs and associated timing. For any issues found during the accelerated inspections that pose an immediate risk to public safety, we are taking action right away to address the issue. Bullet points on the left side of the slide read: When inspections determine that repairs are needed, but there is not an immediate safety risk, we are following our preventative maintenance procedures, consistent with state guidelines for high fire-threat areas. Repairs will depend on what we observe in the field but could range from installing new signs or electrical components to replacing poles or towers. Where possible, we will bundle work to minimize customer impact, particularly if we need to de-energize the line to safely complete the repairs.

Aaron Johnson: The key to this is what needs to be fixed immediately. We find all different sorts of levels of repairs to our potential repair is sometimes found and we will de-energize that line on the spot with a call to one of our control centers if we see a real problem that the system cannot operate safely without fixing that immediately. And then we will find smaller challenges like missing high-voltage signs on poles, which generally have a longer timeline to address all issues, must be addressed in a reasonable time period. There are very clear criteria about the different levels and the timing of those different repairs. And in particular, we now have accelerated schedules to fix problems in the high fire-threat areas more quickly. Many of that work with some of the repairs, if we find multiple challenges on a line or structure, we're often looking to sequence that work

together simply for efficiency and to disturb the public less, especially if we need to take an outage on that system in order to do that repair work. So moving on to the next slide...

Narrator: The heading on the top of the slide says: System Hardening and Resiliency. There are two photos on the right side of the slide. One shows a close up of PG&E worker with a beard and safety glasses inspecting a power pole. The other shows workers in the buckets of work trucks under power lines. The slide says: Installing stronger and more resilient poles and covered power lines across approximately 7,100 line miles of highest fire-risk areas. Replacing equipment to further reduce risk to our system and tailoring upgrades based on terrain and weather conditions using more granular analysis of fire-prone regions. Piloting new resilience zones to allow PG&E to provide electricity to central community resources serving local customers during a Public Safety Power Shutoff (PSPS) event.

Aaron Johnson: This is our system hardening and resiliency. What we are doing here is ultimately hardening the grid for the future. And the idea is to really target all of our infrastructure in the highest fire-threat areas. And again, our focus is very much on the distribution lines. These are the lower voltage lines. They tend to have vegetation closer to them, and they tend to be certainly experienced more outages or potentially damage in principle vegetation. And so the idea here is that we are replacing all of that infrastructure over the coming years. There's 7,100 miles of line that meet this definition. Remember, PG&E provides electricity over almost more than 100,000 miles of transmission and distribution lines. So these are the highest threat lines being where they are located, and the most vulnerable being the smaller distribution lines with vegetation closer to them. So we're in the process of replacing all of that infrastructure over the coming years. Again, that's not an overnight project, but that will long-term help us make the system much more immune to fire risk.

Aaron Johnson: We're also piloting the resilience zones that I mentioned earlier, the first one of which is almost complete up in the town of Angwin. And the idea there is that... and that's in the North Bay, excuse me. And the idea there is, again, can we make the infrastructure robust enough that even under extreme weather conditions that would warrant a Public Safety Power Shutoff, we can bring out a generator and keep those lines operating to support a local hospital, a gas station, a grocery store, a community center, a school, a jail, what have you, fire services, those types of facilities within a community that are most critical. So I'm going to move to our final topic, and I'm going to spend a little bit more time on this one. This is the Public Safety Power Shutoff program.

Narrator: The heading on the top of the slide says: Public Safety Power Shutoff (PSPS). On the left side of the slide is a topographical map of California showing two spread-out areas in different colors. The first and larger area of the state

colored in yellow is listed as a Tier 1 elevated threat area and the second area in red is listed as Tier 3 extreme fire threat area. The slide reads: Beginning with the 2019 wildfire season, we are expanding our Public Safety Power Shutoff program to include all electric lines that pass through high fire-threat areas – both distribution and transmission. The most likely electric lines to be considered for shutting off for safety will be those that pass through areas that have been designated by the CPUC as at elevated (Tier 2) or extreme (Tier 3) risk for wildfire.

Aaron Johnson: So again, as Matt indicated at the outset, we've had over a dozen public meetings. Public Safety Power Shutoff is often a big point of emphasis there. We've had over 600 meetings this year with various local state and federal officials. And we're in the process of going through a series of planning workshops with the emergency managers from all of the counties, the 48 counties that we serve to plan and coordinate better for potential Public Safety Power Shutoff. This is not a decision we take lightly. We realize there are significant impacts to the community of turning off the power. However, given the elevated fire risk that we've seen over the last couple of years, this is a necessary tool in our toolkit as responsible operators of the electricity grid.

Aaron Johnson: So again, this is a program that we started two years ago. And it's really, again, designed as a last measure of protection if the weather is truly extreme. You can see that where we target this program is in this map that is available at the California Public Utilities Commission website. It is at these tier 2 or tier 3 areas, the yellow and red on the map. And all of those areas are potentially in the program for consideration of a potential Public Safety Power Shutoff. It represents just over half of the terrain that we serve and approximately 10% of the customers that we serve are in those areas.

Narrator: The heading on the top of the slide says: Why Everyone Should Be Prepared. On the right side of the slide is a graphic illustration of California in blue. It shows an interconnected system of transmission lines, distribution lines, power generation sources and substations running across the state. The slide says: PG&E's energy system relies on power lines working together to provide electricity across cities, counties and regions. This means power may be shut off, even if you do not live or work in an area experiencing extreme weather conditions. While the most likely electric lines to be considered for shutting off for safety will be those that pass through high fire-threat areas, any of PG&E's more than 5 million electric customers could be impacted and should be prepared.

Aaron Johnson: Now, recognizing that that's what we're targeting, the challenge with this program is that the electrical grid is very interconnected. Many of the lines that provide service into these high fire-threat areas or into other areas pass through these high fire-threat areas. And the grid works, as you can see on this diagram, by connecting various power plants of different elements, hydro up in the

mountains, wind on a lot of our mountain passes, and other types of power plants. And the idea is that it's all interconnected through this complicated networking grid. The upshot of which is that for consideration of turning off any of our power lines, there is the potential for a scenario where any one of our customers, of the 5.4 million customers that we serve in Northern and Central California could potentially be affected by a Public Safety Power Shutoff. Now that said, it's obviously much more likely if you are served in one of these high fire-threat areas, the tier 2 or the tier 3 areas from the previous map. So let's talk about the criteria now for when we do a Public Safety Power Shutoff.

Narrator: The heading on the top of the slide says: Public Safety Power Shutoff Criteria. Below the header it reads: While no single factor will drive a Public Safety Power Shutoff, some factors include: A RED FLAG WARNING declared by the National Weather Service. LOW HUMIDITY LEVELS generally 20% and below. FORECASTED SUSTAINED WINDS GENERALLY ABOVE 25 MPH AND WIND GUSTS IN EXCESS OF APPROXIMATELY 45 MPH, depending on location and site-specific conditions such as temperature, terrain and local climate. CONDITION OF DRY FUEL on the ground and live vegetation (moisture content). ON-THE-GROUND, REAL-TIME OBSERVATIONS from PG&E's Wildfire Safety Operations Center and field observations from PG&E crews.

Aaron Johnson: We're looking for a number of things. Really what you're looking for is very dry fire conditions where you have low humidity, lots of dry fuel on the ground, and then you're really looking for that coupled with high winds. Usually, when we see these types of conditions beginning, you'll see a red flag warning or a fire weather watch from the National Weather Service. That would usually be a prelude to a possible Public Safety Power Shutoff. We are looking at criteria that are significantly higher than a red flag warning. So just because there is a red flag warning does not necessarily mean that there would be a Public Safety Power Shutoff, but it could potentially be a good indicator of the possibility, or that at least that we are considering doing that.

Aaron Johnson: I do want to mention I often get questions about what level of wind exactly and what are the specific criteria. Again, we've done a pretty careful analysis of 30 years of weather data coupled with about 11 years of very specific outage activity to map how weather and wind affect our system. And what we find is wind affects our system very differently in the Sierra Foothills, where we often have very windy conditions versus, say, in Bakersfield, where we don't often have the same kind of really extraordinary wind conditions. And so it's a general guidance to say we're looking for winds above 25 miles an hour, sustained 45 mile an hour gusts. But those are general approximations of what we're looking for. And they could be higher or lower in different locations, depending on the very specific conditions.

Aaron Johnson: So again, we will try to give advance notice as possible so that you can be prepared, but those are the kind of weather conditions that you could be looking for. So speaking of notifications, so what is our plan there?

Narrator: The heading on the top of the slide says: PSPS Event Notifications The slide says: Extreme weather threats can change quickly. Our goal, dependent on weather, is to provide customers with advance notice prior to turning off power. We will also provide updates until power is restored. On the left of the slide a bullet point list reads: Timing of Notifications (when possible) ~48 HOURS before electricity is turned off . ~24 HOURS before electricity is turned off. JUST BEFORE electricity is turned off. DURING THE PUBLIC SAFETY OUTAGE. ONCE POWER HAS BEEN RESTORED.

Aaron Johnson: So the idea here is, again, very weather dependent. And what we've seen with the handful of Public Safety Power Shutoff events we've had is we've seen weather change quickly. So we can't always live up to these expectations, but we're going to try our very best to provide 48 hours notice to the public that we are considering a Public Safety Power Shutoff, another notice in 24 hours, and then a notice several hours before we actually turn off the power. And then notices when the power is off, though that will be somewhat obvious to you in that moment, I imagine. And then, obviously, a notice once power has been restored, again, something that you will notice, but is our practice as with a storm restoration.

Aaron Johnson: We try to provide even advanced notice beyond this to our public safety partners at the city, the county level, the state to help them with their emergency management processes, and so that they can help us also potentially get the word out. We make these notifications to customers via calls, texts, emails, will be certainly on social media, will be on the radio, the local news. So these are places where we will publicize as much as possible that this is a possibility, and certainly, if it's imminent.

Aaron Johnson: It is very important, and I'll just pause here to say if there's one thing that you do after listening to this webinar, I would ask that you go to our website at [pge.com/wildfiresafety](http://pge.com/wildfiresafety), and there, there is a link to update your contact information. And we can get you this advanced notice about a possible Public Safety Power Shutoff event if we don't have your contact info. And what we find is that something that as you change cell phone numbers or other things that that doesn't always get updated with your local utility, so please take a moment and update your contact info with us so we can keep you apprised of potential of a Public Safety Power Shutoff.

Narrator: The heading on the top of the slide says: Working to Restore Power. The top section of the slide says: We will only restore power when we are certain it is safe to do so. We expect to be able to visually inspect the system for damage

and restore power to most of our customers within 24 to 48 hours after extreme weather has passed. There's a row of five icons below this.

Under a yellow check mark icon it says: WEATHER ALL CLEAR - After the extreme weather has passed and it's safe to do so, our crews begin patrols and inspections.

Under a blue PG&E truck icon it says: PATROL & INSPECT - Crews visually inspect our electric system to look for potential weather-related damage to the lines, poles and towers. This is done by vehicle, foot and air during daylight hours.

Under a beige icon of a worker wearing a hard hat and holding a wrench it says: ISOLATE & REPAIR DAMAGE - Where damage is found, crews work to isolate the area so other parts of the system can be restored. Crews work safely and as quickly as possible to make repairs.

Under a green tool icon it says: RESTORE POWER - Once it is safe to energize, a call is made to the PG&E Control Center to complete the energization process. Power is then restored to customers.

Under a blue mobile phone icon it says: NOTIFY CUSTOMERS - Customers are notified power has been restored

Across the bottom of the slide it says - Because extreme weather can last several hours or days, for planning purposes, we suggest customers prepare for outages that could last longer than 48 hours.

Aaron Johnson: So once the power has been shut off, what happens then? It's probably one of the most challenging elements of the program for us. Obviously, when the weather clears, you would have an expectation, a very reasonable expectation as a customer that we would turn the power right back on. The challenge is that when the electricity grid is turned off, we lose the eyes and ears of that grid. And in a weather event of this magnitude, we're likely to see damage on that system. And if we were to simply turn that system back on without inspecting it first, there's the very real possibility that we could have a downline that when re-energized could be a source of a spark. And that is the whole point to avoid a potential ignition source from our infrastructure, which is the whole point of a Public Safety Power Shutoff.

Aaron Johnson: So what do we need to do? Once that weather has passed, we have to patrol and inspect all of our lines. For higher voltage lines like transmission that are generally clear of vegetation, we can patrol those with helicopters, and we will do so to get them back on as quickly as possible. We will drive lines, we will use

ATVs to be traveling along lines. But in some instances, in the most remote parts of our service territory, we will have to physically walk those lines and inspect to make sure they haven't been damaged. If we do find damage, we have to isolate it and repair that damage and restore power and then let you know. We provide guidance for customers that will take us 24 to 48 hours after the weather has passed to restore power. We're going to try like heck to get that done in 24 hours for you. We realize this is not only a significant inconvenience, but that there are safety and wellness considerations in going without power. But we really are encouraging our customers to be prepared in the event of a Public Safety Power Shutoff for an outage that could last longer than 48 hours. Okay, so what are we doing to prepare for this?

Narrator: The heading on the top of the slide says: With Our Customers to Prepare. The slide has the following bullet points of information:

Reaching out to approximately 5 million customers and asking them to update their contact info at [pge.com/mywildfirealerts](http://pge.com/mywildfirealerts). Mailing postcards to customers that do not have contact information on file. Conducting additional outreach to customers in high fire-threat areas through direct mail, preparedness checklist and email campaign. Launching broad public safety advertising campaign. Partnering with community leaders, first responders and public safety authorities around PSPS preparedness and coordination. Holding answer centers and open houses (as needed) in advance of and during wildfire season. Providing tenant education kits to Master Meter customers. Placing calls and doing additional outreach to Medical Baseline and Medical Baseline -eligible customers in high fire-threat areas. Continuing to share information through [pge.com/wildfiresafety](http://pge.com/wildfiresafety). Engaging with organizations for our customers who have specific needs to explore ways we can partner.

Aaron Johnson: We've been reaching out with letters. And you'll see here, again, on this slide as it pops up on the screen, the wildfire safety has all the links. If you want to go specifically to the contact info, you can go to [pge.com/mywildfirealerts](http://pge.com/mywildfirealerts). To specifically address that issue, we have been having webinars like this in the open houses we mentioned, we've been sending postcards and letters to our customers, education kits to our master meter customers in apartment buildings or mobile homes. We're trying to do direct mail, send out checklists for people to think about. We've been doing an extra amount of research for our Medical Baseline customers. This is the best proxy we have as PG&E for who are our most vulnerable customers. Medical Baseline is an extra provision. It's a discount program for those who have medical equipment that requires them to use additional electricity. Not all of that is life safety equipment, so it's eligible to a variety of different customers, but it's the best proxy we have.

Aaron Johnson: So we've been doing extraordinary outreach to those customers, and we have additional notification processes, including and not limited to actually going and

physically knocking on those people's doors if we can't get a hold of them in an actual event. We're trying to do a lot more advertising around these various programs. Hopefully, you've seen some ads in the newspaper. If you're still reading newspapers like I am, or certainly seeing them online as well. We're really trying to, as I mentioned earlier, partner more with emergency management and first responder folks across cities and counties. They have a lot of questions just like you do, and we're trying to coordinate our plans with them so that we're all on the same page in these types of events. I'll leave you with this last slide here...

Narrator: The heading on the top of the slide says: Preparing for Public Safety Power Shutoffs. On the slide there's a photo of a back-pack and supplies including bottled water and canned food. It says: the threat of extreme weather and wildfires continues to grow. Start preparing your plan using the checklist below: PLANNING BASICS: Update your contact information. Visit [pge.com/mywildfirealerts](http://pge.com/mywildfirealerts) or call us at 1-866-743-6589. Keep a hard copy of emergency phone numbers on hand. Build or restock your emergency supply kit - Stock supplies to last a week — include flashlights, fresh batteries, first aid supplies, food, water and cash. Designate an emergency meeting location. Practice manually opening your garage door

Aaron Johnson: Some of the planning basics. So as you've heard in this overview here, we are taking the threat of wildfire risk from our infrastructure very seriously at PG&E and really trying to go well and beyond what we've historically done as a company in some of the areas you heard about today. While we are developing our plan, it is important that you'd be developing your plan as well, and with an organization that has a big focus on safety and it drives our activity as an organization with the responsibility that we have to serve you and your community safely. It's important for you to also think about what you can do to be safe for either a Public Safety Power Shutoff event or for just your own general emergency preparedness, like with earthquakes or wildfire or what have you.

Aaron Johnson: So again, specifically for Public Safety Power Shutoff, update that contact info. I'm going to plug it one last time, [pge.com](http://pge.com) at my wildfire alerts. There's a 800 number there, an 866 number you can call if you prefer, easy to do online. Keep some hard copies of your emergency phone numbers on hand, restock your emergency kit. My wildfire alert safety has links to lists of emergency equipment that you may have, things like flashlights, fresh batteries for state supplies, food and water, some cash, change of clothes, those sorts of things. Make a plan with your friends, your family, your neighbors, on emergency meeting locations, maybe at your workplace. That's another place where these events can start. Practice things like manually opening your garage door. Make sure you know how to do that. Keeping your car at least half full of gasoline, your phone at

least half charged at all times. Some important, just kind of safety reminders because we never quite know when these actions can happen.

Aaron Johnson: So with that, we're going to open it up now for the questions that you all been sending in.

Narrator: The heading on the top of the final slide says: Learn More. It says: We welcome your feedback and input. For questions regarding PG&E's Community Wildfire Safety Program, please direct customers with questions to:

- Call us at 1-866-743-6589
- Email us at [wildfiresafety@pge.com](mailto:wildfiresafety@pge.com) • Visit [pge.com/wildfiresafety](http://pge.com/wildfiresafety)

Aaron Johnson: Matt's going to speak to you in a little bit about how we'll manage that process, and he's going to help me out here. He's pretty well versed in this program, so he'll probably jump in and answer some of the questions as well, and we'll tag team here and get through as many questions as we can in the last 50 or so minutes that we have with you tonight. But again, on this final slide, you see some good resources online for you if you want additional information about some of the activities that we've described tonight.

Matt Pender: Perfect. Thank you, Aaron. So as we transition to Q&A portion, I will remind everyone in the bottom left of the webinar, there should be a Q&A button that's green, click on that and type in your question if you'd like to submit a question. We've gotten well over 100 questions already in the backlog, so we're going to work through them as quickly as we can and try to cover a lot of... several of them are related, so we'll cover more than one at a time. A few really quick ones, several people asked about is, is this presentation available? On the page that's on the webinar, is there a web address, [pge.com/wildfiresafety](http://pge.com/wildfiresafety)? Pretty much all of the information that's in this slide deck is on that website. So we really encourage you to go there and click around for the information that we've discussed today, and that will help you understand our program.

Matt Pender: Another website that I wanted to give people insight into... Robert and several other people asked, is PG&E going to publish the map showing high fire-risk areas or that it was hard to see their community in the map that we showed on the slide? That's not a PG&E map, that's a CPUC map, California Public Utilities Commission. So I encourage you to go to the California Public Utilities Commission website to see that map. They have a pretty high definition PDF that you can zoom into to understand where your community might fall. So the easiest way, honestly, is to go to Google. If you search for CPUC fire threat map, the first thing that comes up is their website that has those maps in PDF version, also in GIS version. The website itself is [cpuc.ca.gov/firethreatmaps](http://cpuc.ca.gov/firethreatmaps). So a number of people asking about the maps, you can get it yourself from the CPUC

website. Aaron, first question for you. Kimberly asks, "Will there be a place to charge mobile phones when the power is shut off in a community?"

Aaron Johnson: Yeah, that's a great question. So what we are doing is depending on the scope of the event, we will be setting up of a possible Public Safety Power Shutoff event. We will be setting up a series of community resource centers. In order to stand us up quickly, we're using a company that helps us set up base camps when we respond to emergencies. So they generally are air conditioned tents, will have water, charging information, those sorts of things. We're looking to migrate that program to coordinate with County Emergency Management folks so that rather than standing up our own community resource centers in, say, a Sears parking lot or something like that, we will be using the local emergency response and centers in a community. We obviously have some engineering work to do to get those wired up so that they could take the generation that would be necessary to have an emergency generator attached to those facilities. But we're working our way across the many counties we serve to try and identify those facilities and do that work, so we have a near term solution of standing up these emergency centers and then something longer term, that would be the facilities you're more familiar with in your community.

Aaron Johnson: As an example, we set up a couple of these for the last Public Safety Power Shutoff event we had in June. One of the areas we never ended up turning off the power, so we just assembled it. There was one, however, in Oroville that I know was well attended by the public that met those needs. So that's the plan, but stay tuned for more information as we begin working locally to identify those areas. Obviously we would promote the locations of those in the event of an actual Public Safety Power Shutoff event.

Matt Pender: Perfect. We've got a couple of questions on other programs beside PSPS, and so I'll hit a few of those quickly. So John asks, "Are our vegetation management contractors required to contact homeowners prior to accessing the property?" We tried to do that. That is our goal to knock on doors, we leave door hangers when property owners are not home. We're not required to, the law doesn't require that, but it is our practice to alert homeowners both when we're on the property just to inspect for vegetation or electric assets, and also when we come to do work on the property. So, yes, we try to reach out to homeowners, we're not actually required to do so.

Matt Pender: Another related question, "Are homeowners liable for injuries if a contractor is working on the property?" The general answer there is no. There is a negligent standard if a homeowner or property owner is aware of a dangerous condition on their property, they have hidden sinkhole or something and doesn't take action or doesn't alert people who may come on their property that that is there. There could be some liability on the homeowner, but generally not and I'm not aware that that's ever been a problem with a PG&E crew in terms of

having an injury on a customer property in that environment. So returning to PSPS, Jeff asks, "How do renters who don't have a PG&E account get contacted about PSPS events?"

Aaron Johnson: So we know for many renters, you have responsibility for your electricity bill. However, we still have a number of arrangements where the landlord is responsible for the electricity bill, either because that's your rental arrangement or the building or, say, as we often have seen in mobile home parks where there's a master meter situation, where the bill is being paid by a central entity, the owner or operator of the facility. So in those instances, if you're an individual renting from a landlord who has a responsibility for the electricity bill, you can be added as a contact person on that bill, and you will get those same notifications that will go to your landlord.

Aaron Johnson: For master meter situations, and just to back up a second, you have to get yourself added with the landlord. So you'll both have to call us in, you can't just call up and have yourself added. You have to do it with the primary holder of the account. But if you guys do that together, quickly, you can get yourself added to that contact info. In the master meter situation, we have been working actively with all of our master meter customers to provide them with additional information, posters to hang up around the area, and suggested best practices of how to contact their customers. Obviously, we would additionally be providing updates on social media, the general news, radio, those sorts of other channels. So while you might not hear directly from us, certainly we expect there to be much in the news and around your area, as well as working with the master holder of the account.

Matt Pender: Perfect. Switching to other topics, we've got some questions here about people who have identified vegetation in their neighborhoods that they're concerned about. So, for example, if we're aware of trees in danger of damaging power lines, how can we get PG&E to remove those trees? So if you see vegetation and is of concern to you, please just call our 800 number, 1-800-PGE-5000. And our call center folks will create a case from your information for the location in question, and we'll get that to our vegetation management team who will inspect the location and take action as necessary. Two things about that, one person asked, "What if it's not on my property?" We will still inspect. And so you can file a case even if it's not on your property, so please do that if you are concerned about something.

Matt Pender: And then, in general, we inspect all of our assets for vegetation influence at least once a year. And in most areas that are high fire threat, we actually do it twice a year. So the inspectors are regularly coming through the areas, which some of you may feel UC, PG&E, or PG&E contractors an awful lot on your property. That's part of the reason is because we're inspecting for vegetation. So we're out there on a regular basis, but if you see something that you're

concerned about, please do call the 800 number and let us know about that. So returning to PSPS, Ian had a question, "If I'm out of town and power is shutoff, will a history of shutoffs be available online so I can see what has happened?"

Aaron Johnson: Well, so if you are out of town, you will probably continue to get the texts and the emails, and that which we'll let you know approximately when we're going to be turning off the power and when the power is restored. I think we also have been publishing information on our website that's live, and then during the event, that usually tends to come down after the event. So I'm not sure it would provide a history. We are, however, required to provide a report within 10 business days of the conclusion of the event, the full last restoration of the last customer to the California Public Utilities Commission documenting damage we found and all of the details of the Public Safety Power Shutoff. And those reports are viewable to the public and also you're allowed to comment on them if you have any feedback for us, though you're certainly welcome to just call the 800 number with that as well or send us email. So that's probably the best way if you're looking for an overview of the event.

Matt Pender: Yeah, so at this moment on our... unlike your account login or something, there is no history of PSPS events, but you will be getting notifications throughout the process, including when power has been restored, so you'll know how long it's been out and that kind of thing. Similar question, Steve asks, "How will my power shutdown affect my grid-tiered solar system if I'm not at home to disconnect the solar panels?"

Aaron Johnson: So a solar system, if you don't have a battery, will not operate without being connected to the grid. So when the grid goes down, the solar system will cease to operate as well, assuming it was installed correctly in all of that. So that's just how solar operates as a technology. I've had many solar vendor tell me that the hardest part of the solar sail is the... after the question of how much it cost, the second question they always get is and my lights will stay on when the utilities power goes off, right? And that's a tough question for them because the answer is no. That said, there are now increasingly battery systems that people are hooking up, and if you have that hooked up, that can allow your system to continue to operate if the electrical grid is turned off.

Matt Pender: Great. Couple of questions here. I'll go with this one from Mia, "Is there any offer or rebate from PG&E for home generators if people think that's necessary to handle PSPS event?"

Aaron Johnson: So we are not offering any discounts or programs specifically on generation. However, at my wildfire safety, we do have a page there with kind of a how to around backup generation, what to think about some suggested number of the primary vendors of that, obviously depends in your area, some things to think about if you get that hooked up. And again, we always recommend using a

qualified electrician to connect any such system. There are financing links as well on that website, so a variety of tools for you to consider that option if you think that's best for you.

Matt Pender: Great. So a couple of more questions about vegetation management. Rick asks, he lives in the Napa Valley area and wonders about, it looks like we're clearing 20 to 40 feet on each side of a transmission line, rather than the 12 feet that we showed in our presentation. And that's a really good point. So transmission lines, which are generally on steel lattice structures, that we refer to as towers, have different and wider vegetation clearance requirements than distribution lines, which are generally on wood poles. And so often, you will see under or around transmission towers a wider right of way, sort of a highway where the vegetation has been cleared back. And that is related to the fact that those transmission lines are regulated by the federal government, which has different and wider vegetation clearing requirements.

Matt Pender: So if you have transmission lines on your property, or if you see them in your community, they will look different than the picture that we showed in our presentation tonight because of the difference between transmission, high-voltage lines and distribution lines, which are somewhat shorter, less vegetation clearance requirement. So that's one question there. Another question about how are our vegetation management resources audited? Do we check to make sure that they did the work correctly and that kind of thing? And yes, we have a quality assurance program that samples all of the locations where we do vegetation work and goes back behind our crews to make sure that we did it right, that it is now safe and up to standard once we are done with doing our work, and that we've completed our work up to PG&E standards.

Matt Pender: One person noted that limbs may be left behind, that is part of the standard. So sometimes limbs and small material is left behind, sometimes whole logs are left behind, that is wood is the property of the homeowner, the property owner. And so we will generally talk to the homeowner about if they want us to remove the wood when we do this enhanced vegetation management work, or whether they'd like to keep the wood maybe for firewood or other purposes. So wood need be left behind, or it may be removed and either may be consistent with what we've discussed with the property owner and with our standard. So returning to PSPS, how do we ensure that we have sufficient resources and boots on the ground to restore service to the regions that are impacted after a PSPS event?

Aaron Johnson: So the restoration process is a really key area of focus as we touched on in the main presentation obviously. We want to do everything we can to get the power back on as quickly as possible. So we have contracted for dedication aviation resources so that we can fly the lines that are flyable, especially the transmission lines with the wider right way that Matt was just describing. But

what we have done is we've built a series of response plans and resource plans depending on the scale of the event. So one advantage of being a very large company is we're able to move resources across our service territory to patrol lines as quickly as possible.

Aaron Johnson: We've been in a mode of trying to get better and better at this approach. A lot of the same inspection processes that we use for storms are not directly applicable in a Public Safety Power Shutoff. We're looking for different things, the kind of damage we're looking for. And some of our practices that are safe in a wet storm are not safe in a high fire danger conditions and dry times of year. And so we've rebuilt those practices, we're out testing those practices with our folks in the field. We've been going from service center to service center and actually looking at the lines and going out with the crews, taking a day off work from our normal business to actually practice what it would take to do this. So the short answer is practicing so that we know exactly what to look for and folks can move quickly, and then moving very large numbers of folks into regions so that we can take that action really quickly, divide up the lines in the very small segments and inspect them as quickly as possible.

Aaron Johnson: We also do something called step restoration, which if we have a very long circuit, we will start at the beginning of that circuit, we will move to the first safe point on that circuit. And if it's all clear, we can open at that spot and energize the lines that we've already inspected. So in that ways, we go piece-wise and turn on pieces of each circuit as we go rather than inspecting the whole thing and then turning it off at the end, so that helps us move more quickly as well.

Matt Pender: Right, so Barbara had a question about living not in a tier 2 or tier 3 area, but being surrounded by tier 2 or tier 3 areas. What is the likely impact to them of a PSPS event?

Aaron Johnson: So the impact there is unfortunately a very unsatisfying answer, which is it depends. It really depends on the circuit configuration in your community. I'll give you an example. Last year when we did this for the first time, we were in Placerville. And in Placerville... Placerville itself is not a tier 2 or tier 3 area, but it is surrounded by it. And because of the configuration of our grid, one of the circuits that left the town of Placerville went up into the hills, didn't have a way for us to separate it. And so even though even portions of that line in town are underground, we had to turn off that whole circuit. And so community members that I spoke to when I was there for that event said, "I'm really confused, PG&E. Half the town is lit up still, and the other half is dark, doesn't appear to me, what you're doing."

Aaron Johnson: And the reality is it's about the engineering and the configuration of the system. So what we have begun doing is trying to install more switch points, if you will, protection devices we call them, at these places so that we can isolate a town

like a Placerville, so that if do need to turn off the power in the surrounding areas where there is fire danger, the town itself, which has a lot of pavement hardscape, a local fire agency, and is an unlikely source of the ignition of a big wildfire, that we can keep that town lit up during a potential Public Safety Power Shutoff. Well, I'm certainly happy to know that one of our engineers emailed me two Fridays ago to let me know that the recloser device that was needed to separate that portion of Placerville had just been installed and commissioned officially in our system and is ready to go. So Placerville, potentially, can avoid an event.

Aaron Johnson: Now, the real challenge for us is if the weather is so extreme that we need to include transmission lines, those transmission lines into Placerville if they're not energized, then we can't light up any of the town. But obviously, the risk is much greater on the distribution system, that's what we're much more concerned about, it's much more vulnerable to debris flying in these more elevated wind conditions. And so that's a much more likely outcome that we'd be turning off the distribution system than that the transmission system.

Matt Pender: Yeah, and similar question, Jean asks as she's served by Modesto Irrigation District, not PG&E, could she still be impacted by a PSPS event? And so basically same answer, which is if the transmission lines that PG&E runs and serves Modesto Irrigation District have to be de-energized, then they would likely be impacted.

Aaron Johnson: Exactly.

Matt Pender: Great. Question here, Michelle asks, "Have we considered using Nixle or Nextdoor as a means of communicating to customers in neighborhoods when a PSPS event might be planned?"

Aaron Johnson: So Nixle is a product that is run by government agencies. And so we do not have the ability to do Nixle alerts. We are, however, coordinating with different cities and counties to get them to activate their Nixle alerts in events and some counties have done that. It's really a county by county decision, or city by city as to whether they want to put that information on there. I believe for Nextdoor, we have been given permission to post on Nextdoor. And so again that's just for the public. If next door is not a tool for companies, we were able to get a special permission from them to be able to post for Public Safety Power Shutoff. So we will be posting there as well, but that's pretty unusual, again, because that's a neighbor's right tool, obviously not unintended for companies. We wouldn't want to see a bunch of advertising or things like that on your Nextdoor. But we will have, for this special purpose, permission to do that.

Matt Pender: So related to that, Kyle asks, "If power is shutoff, will there be any online mapping to show where there is or is not power during an event?"

Aaron Johnson: There definitely will be. So we're on the process of sharing maps with emergency management folks, so that they can do some planning, where are the distribution lines that are most vulnerable to a potential Public Safety Power Shutoff? But in an actual event on our website, and it's the first thing at pge.com that you find if you go to our website during an event or in the lead up to an event, there are very clear maps that are printed that will show you what is in scope and what is out for the event. So, yes, you will have access to very precise maps about that.

Matt Pender: Perfect. Kathleen asks, "To confirm the medical necessary list... I think she means the Medical Baseline, who do we reach out to? And the first option is to just call our 1-800 number and talk to our call center. They have your account information. So if you give them your account number, they can look up and see if you're already on the Medical Baseline list. You can also go to our website, pge.com/medicalbaseline, and that has all the information about the program, who is eligible, what the application looks like, how it works from both a financial perspective, as well as what it means for your account. So we encourage people who think they may be signed up but want to confirm, or think they may qualify but are not signed up to go one of those routes, either to our website again, pge.com/medicalbaseline, or call the 800 number and talk to our call center reps. Okay, Barbara asked, "What will the impact be on cell phone towers and cell service if the power is turned off for a PCPS event?"

Aaron Johnson: So the telecommunications network will potentially be affected in a Public Safety Power Shutoff. We've been having separate workshops and conversations with critical infrastructure providers with a strong focus for us on water supply and telecommunications providers. In some instances, they have a requirement to have backup generation, however, it's usually only for a number of hours, not for days. A lot of the telecommunication providers that we've worked with are looking for advanced notice from us because they are rolling backup generation to their critical facilities. What many of them have said to me is that they try and maintain their networks. It may not have the same level of coverage that they've had previously, but they're trying to keep the most critical towers up and operational so that network remains active. But is there any good emergency management person would say, "You should certainly be prepared for the very real possibility that that network will not be functioning in an event"?

Matt Pender: Judy asks, "Will there be emergency shutdowns in less than 48 hours?" And I think she's referring to notification. Could it happen in less than 48 hours from the time customers are notified?

Aaron Johnson: It is very possible that it could happen in less. And what we've seen in the three events or so that we've had is we're watching the weather, and we don't think we're going to have a Public Safety Power Shutoff. And as the weather forecast

models get updated, an event that looked like it wasn't going to quite run to that level will grow in severity, say, overnight considerably, and we will get caught having to give less than 48 hours notice. And so that's certainly what happened to us in June. And we were able to give our first notice, I think around 24 hours, about a day ahead.

Aaron Johnson: So it is certainly possible. What we find generally is that it would be highly, highly unusual to get less than 24 hours notice. Really, we get a fairly good certainty on the weather. We all know weather forecasts are often wrong, and we're struggling with the same challenge. We obviously have our own meteorological team that focuses very much on wind events and fire weather, given the operational needs of a large utility. And we're certainly coordinated with other weather agencies and services that are out there. So it is always possible, but we're going to strive and do everything we can to give you that 24 hour notice and then something very close to real time.

Matt Pender: All right. John has a tough question. The information we've provided is useless for estimating the actual risk that the PSPS event will occur is what he says. Well, PG&E provide an interactive website that uses past weather data combined with our new policies to allow customers to get a feel for the probabilities involved, and allow the customers to make the best choice for planning for the loss of grid power. So how are we looking at that historical weather data?

Aaron Johnson: It's a fair question. I mean, what I hear you asking is how do we know how often is this going to happen, those sorts of things? And it's very hard to say. What we're looking at in Northern and Central California is a phenomenon that's beginning to be discussed in the meteorological community as Diablo wind events. They're sort of our equivalent of the Santa Ana winds that we all hear about down South, which tend to drive similar programs for the two big utilities down South, Southern California Edison and San Diego Gas & Electric. Those Diablo wind events in our service territory are of varying levels of severity.

Aaron Johnson: In any given year, we've seen... and there's a number of research that's been published on this looking at over the last, say, 15 years or so. We will see years where there are none of these weather events. And we will also see there have been years where there has been as many as 15. Many of these occur... and these are sort of northerly winds, where the winds are blowing offshore. They're not coming from offshore. And it's that very unusual dry weather that you feel with winds coming, sort of feels like from the wrong direction.

Aaron Johnson: So they're not always severe enough to warrant concern that there'll be significant damage to our system. Many of these weather events in that direction occur in the winter when they're accompanied by a lot of moisture, and obviously, fire risk is not a challenge. I liken it to saying, "Can you tell me

how many times it's going to snow more than a foot in the mountains next winter?" It probably is going to snow. We might have a dry year, and it might not. We might have a year like we had last year. And it's really hard to predict on the weather. So, hopefully, that gives you a little bit of a sense of that. And our commitment to the public is that we want to give you as much advanced notice about doing that and providing as much information as possible about the possibility.

Aaron Johnson: We are looking to try and publish on our website in the coming month some additional weather information that would provide a more advanced and far outlook. We're trying to get approval from some different folks and vet that with different entities so that everyone's comfortable with PG&E providing that kind of a forecast and weather information to the general public. But once we move forward with that, hopefully, we'll be able to provide a little bit more information. So again, our emphasis is not to drag you into the world of our modeling and prediction, but to give you the best sense of that outcome and that possibility as possible. So I appreciate the challenging question, and I hear the frustration that comes without that full transparency of exactly what's happening. And so we've heard that loud and clear across a lot of these meetings, and we're trying to get more transparent with the public about providing you a further outlook of the possibility that this weather is potentially to materialize.

Aaron Johnson: I will remind folks that what we do see on those Diablo wind events, I failed to touch on that is they... the ones that we're generally targeting with the fire whether that accompany them tend to come in the fall once it starts getting very, very dry, and especially in the late fall before we have the first rain. So September, October, if we don't get rain into November, potentially even into December, depending on when the first couple of heavy rains come, and that's really the target time of the year that we would be looking at a potential Public Safety Power Shutoff.

Matt Pender: So Carlos asked a related question, and you started to talk about it a little bit. How do we take climate change into account when we look at our forecasting models?

Aaron Johnson: So what our meteorologists will say is that, obviously, we've all experienced changing weather conditions. In the state, we certainly seem to be having more and more extreme weather. Climate change, so far, hasn't significantly changed the frequency or the locations of these Diablo winds. We tend to see them a little bit more in the North Bay area, in the Sierra Foothills, not so much sort of, say, in the Santa Cruz Mountains or Marin, some of those other coastal areas. And we haven't seen a lot of change of where or the frequency of these, but what we have seen is that rain coming later in the system.

Aaron Johnson: So where the real challenge from climate change is, is not so much that those patterns have changed yet, they may, but that the rain comes later. And so those winds are coming when they always did. It's just historically when they came in November or October, we'd already had rain but we're not getting the rain as early. And so there's more elevated risk than of a potential ignition from our infrastructure due to these weather phenomenon and knocking debris into our lines and such when it stayed very dry and these winds start picking up in the late fall and the rain is late to come. So that's how we're thinking about, or what we're responding to and seeing around the issue of climate change so far.

Matt Pender: Great. A few questions we've gotten about how can people get more information? So if you're still able to view the webinar, the slide that we have has a phone number, an 866 phone number that is dedicated to wildfire issues and questions and such, as well as an email address, [wildfiresafety@pge.com](mailto:wildfiresafety@pge.com), where people can submit questions. We have over 250 questions submitted. Now, we're not going to be able to get to all of them. So I want to make sure that if you have a question that we don't answer tonight, that you know where to go to get that answer, and then also the website that I referenced a few times, [pge.com/wildfiresafety](http://pge.com/wildfiresafety). So, again, look at the webinar if you have that up still. And if not, those are the places where you can go to get additional information.

Matt Pender: We got a question on here about why do we have to do these Public Safety Power Shutoffs? Why can't we install equipment that senses when something goes wrong with our electric system and shuts off the power in time? And I'll start with that and now you can add electricity moves at the speed of light. And so the technology to sense if electricity has gone off path, has gone off of the line into the ground or into a tree or something like that doesn't exist on a commercial scale at this point in time.

Matt Pender: We are experimenting and piloting some technology that a few folks, including some utilities in Australia have been working on to try to do that, to try to sense fast enough when a line break or on a contact has occurred and turn off the power in time to prevent a line from putting a spark on the ground by the time it falls. But that is not a proven technology that is ready to be deployed on a large scale yet. So unfortunately, that kind of technology solution just isn't available yet for us to deploy and prevent the necessity for this kind of solution.

Aaron Johnson: I would just add to Matt's... I mean, I think other technologies that we're looking at to help us better predict this kind of fire weather are all the sort of rocks that we're turning over as a company to really find... and Matt mentioned going to Australia where they had over a 10-year drought and had a significant issue with wildfire, and they've adopted a lot of new practices. And so we're trying to steal liberally from those and so that we can adopt them. It is one of the elegant elements of the utility industry is because we do not compete with each other,

we share information across all utilities. And so we've had a lot of utilities or the handful really that have dealt with these same sorts of issues are sharing with us some of their challenges.

Aaron Johnson: This level of wildfire risk has not been experienced by many utilities in the industry across the world. And so we are unfortunately on the cutting edge of these issues, but it's good to be based where we are and have access to a lot of the technology companies here, and we certainly have a number of who've come forward with ideas and thoughts about different things that we can try. And we are certainly trying anything we can get our hands on that may help with this.

Aaron Johnson: Ultimately, I mentioned the hardening that we will be doing of our infrastructure, undergrounding some lines in targeted areas, making the infrastructure itself more resilient, that will help us reduce the vegetation clearing around our lines done more exhaustively. All of that will help reduce the likelihood of Public Safety Power Shutoff. It won't eliminate it. I think, unfortunately, this tool is going to be in our tool chest for a long time to come. But our plan would be that as we make the infrastructure more robust, that the frequency with which we would have to do this would reduce significantly.

Matt Pender: I had several questions about generators. How can I get more information about generators? Don, in particular, asks one about how to set up his generator. We'd really encourage folks to go online and get more information. Generators, obviously, can play an important role. They can also be dangerous if not done properly, if they don't vent to a safe area. You can get a build up of exhaust fumes, which can be harmful. And if they're not hooked up electrically the right way, they can do damage, either create a safety concern or do damage to your equipment at home.

Matt Pender: So, again, [pge.com/generator](http://pge.com/generator), so simple website, [pge.com/generator](http://pge.com/generator) has safety tips for installing a generator or using a generator. It also has some guidance on choosing the right generator, and all the way link to a marketplace where you can look at actual generator options from different companies, which has some of the stuff that Aaron mentioned earlier, including some financing options that PG&E is facilitating and things like that. So if you're interested in generators, please go to [pge.com/generator](http://pge.com/generator) to get more information and make sure you use it safely.

Aaron Johnson: And I will just say that one of the issues that does come up for our employees who are doing those inspections and the restoration work is if those generators aren't connected correctly, there is some risk of that generator back feeding, we call it, feeding electricity on the lines that our employees think are de-energized and potentially a safety hazard to them. So I really would strongly encourage you to... we have test processes that should keep our employees safe even if

that happens that said, "We'd like to eliminate as much risk for employees who are out there trying to get your power up as quickly as possible." So really encourage you to use a qualified electrician as you're doing that work to put in the appropriate safety protections on those generators.

Matt Pender: All right, Gala asks, "Are the power outages likely to affect water provision, like East Bay MUD being able to pump water through their distribution network?" Similar questions on like sewer systems and things like that. So how we engage with those service providers?

Aaron Johnson: So we have been working with a variety of water agencies to address those issues. Some have backup generation, some are adding it for their facilities. A lot of water agencies have asked us for as much notice as possible so they can pump water and use gravity to operate their systems during a potential power outage. So we're really trying to stay closely connected with various water agencies so that they are as aware as possible and can take the necessary precautions and pre-planning measures that water agencies would want to take in the event of extended power outage.

Matt Pender: So Brian has a... oh, sorry, Susan has a question about the oversight the CPUC is conducting a PG&E's repair and hardening activities. And so I wanted to give a little primer on our annual wildfire safety plan. So as part of a bill that was actually passed by the California legislature last year, all of the utilities in California are required to annually provide the CPUC with a plan of what we're doing to mitigate wildfire risk. And so the CPUC is the agency that oversees that effort. So we also made our plans to the CPUC. There's a public proceeding with evidence and discussion and feedback that ultimately results in the CPUC approving or modifying each utilities including PG&E's plan of what we're doing to reduce wildfire risk.

Matt Pender: And so we have a 2019 plan. It was approved by the CPUC for how much of each of those efforts we're going to do. At the end of this year, there is an independent evaluator process where the CPUC is going to appoint an evaluator to review the work that PG&E did and see if it complies with the plan that we put forward and that the CPUC approved. So to the question about CPUC oversight, there is an annual process where we submit our plan and explain what actions we're looking to take, and then it is reviewed on an annual basis by the CPUC's independent evaluator. So that's an answer to that question.

Matt Pender: Next question is kind of a pulse check. Brian asking, "This all sounds pretty good in theory, but how has it actually worked in reality? You say that you've done this before, have you been able to give 48 hours notice? Have you been able to go door-to-door to notify Medical Baseline customers, and how long did it take to get the power back up?"

Aaron Johnson: So, fair questions. Any good emergency manager will tell you there's a plan on paper and then obviously what happens in the event. So we've had about three of these events. I would say it's a learning process for us. I think we've gotten better at it each time. But each event has had certainly things where we felt like they went very well, and then some clear challenges with them. So two events last year, one where we did turn off the power, and one we did not. We were able to give, I think, around a little less than 48 hours, I think 36 hours of notice in that first event. I'm stretching my memory a little bit, so I apologize.

Aaron Johnson: And we were able to restore power to all but a handful of customers within 36 hours of view of the all clear on the weather. Again, about a 12-hour weather event itself. We had a handful of... and this wouldn't be uncommon that 99.9% of customers are restored, but a handful of very remote customers might take a little bit longer to get to inspect their lines. We did not turn off power, the weather did not materialize as we expected in our second event last year. We certainly saw a fair bit of damage the first time on our system. We were able to repair that as part of those restoration times.

Aaron Johnson: For the event that we had in June, I think that notice was more around 24 hours. So we were caught a little bit more off guard by that weather moving. We were ready, we were monitoring it. But it was very unusual to have a Public Safety Power Shutoff event in June, highly unusual. It's still quite damp in our system, the higher elevations, but a lot of elevated risk at the lower levels of our service territory. And so we gave about 24 hours notice there. Again, it was an overnight event. There were two events, one in the Sierra Foothills, one in the North Bay. Both events we're slightly less than 12 hours as weather events. And in both instances, I think we restored power in 6 and 10 hours respectively after the weather cleared.

Aaron Johnson: So significant improvement based on a lot of the practices that we've been evolving over this winter. We've been hard at work evolving this program. We still have much to improve on. We've heard from a lot of our county partners that they need better communication with them, more advanced notice. And they struggled a little bit with the short notice in the June event, which was very fair feedback or criticism if you will. So we still have much to do. We feel like we're getting better at it. It's not something I relish getting better at, but we know it's a reality in a program we have to execute on, so we're continuing to evolve.

Aaron Johnson: And frankly, we've changed a lot of the practices based on the feedback we get from these kinds of meetings, from the public meetings. We moved our timelines for more advanced notice based on the public and emergency management feedback we received in the last couple of years on this program, enhanced a lot of our communication with water and telecommunications providers based on their feedback. So it's a program that's evolving. We strive to

continue to get better. And if there are specific things you see or observe or experience, we'd love to hear that feedback so we can continue to evolve.

Matt Pender: So a couple of questions about maybe some confusion about what would cause a PSPS, Public Safety Power Shutoff. Just to be clear, a Public Safety Power Shutoff is a preemptive turning off the power when the weather conditions are elevated and there's very high fire threat danger. There are also times when a wildfire has already occurred for other reasons that we, PG&E, are instructed to turn off our lines for the safety of first responders like Firemen. And so there was a question about that that people didn't get notice in that case, didn't get advanced notice of the outage. And so just want to make sure people understand the difference there between reactive outages because of an incident that's already occurred versus proactive Public Safety Power Shutoff.

Aaron Johnson: Yeah, that's a good clarification. We've had practices for many, many decades of turning off power on very short notice at the direction of first responders, which is a very different practice than trying to get out in advance of an extraordinary weather event and really trying to reduce the risk of our lines being a cause of an ignition. So thank you. That's a very important clarification.

Matt Pender: And then last question, we have time for a couple of folks again asking for how can they make sure that they're getting a notification? So, again, go to our website, [pge.com/wildfiresafety](http://pge.com/wildfiresafety). There's easy link there that says, "Update my information." Once they updated their account information with us, do they need to do anything else to get notification of a PSPS event?

Aaron Johnson: No, that will happen automatically. Obviously, you can adjust those preferences in their email, text, phone call, all of the above. You have the opportunity to do that if you want to put someone else's contact info on your account so that they get that information as well. And that notice, you can do that as well and add that information there. But once you have that in there, if there is a possibility of a PSPS event in your area, you will be notified automatically. There's nothing additional that you need to do.

Matt Pender: All right, so one more that just came in. Sheila asks, "How will general panic be prevented?" And so I want to pivot that to how we're working with first responders and county governments and things of that nature. How we work with them to make sure that this is controlled?

Aaron Johnson: So I think the general... our objective to control the situation, which is a situation that we don't feel entirely in control of because we're seeing the kind of really extraordinary weather that necessitates the only... that it's not safe to operate our system. And so... excuse me. So the most important element for us is to get the power back on as quickly as possible to do that. I think we spoke

earlier about providing community resource center so that there's information, water charging, air conditioned facilities.

Aaron Johnson: I know some counties will activate their own emergency management systems and some of their own resource centers. They may choose to do that, they may not, depending on a variety of factors. But I think the most important way to avoid chaos is to do advanced notice and communication so that people can activate their plans. If they don't have a plan, make a plan. If you don't feel comfortable, you can leave the area. For many others, they're going to wait it out. Others will choose to add generation or may already have it in some of our most remote areas where electricity service can be a little less reliable. And so I think generally all of that sums up to having a plan and executing on that plan and making sure you get your contact info in so that you can activate that plan with as much notice as possible.

Matt Pender: And we've also been doing exercises with counties, run through their county OES, Offices of Emergency Services to plot out what would this look like, how would the county plan to respond, where would they deploy law enforcement, or have fire first responder resources on standby, etc. So we've been working extensively with local governments and first responders so that they have plans that they're ready to execute, and they have thought through what this might look like in their community, right?

Aaron Johnson: Correct.

Matt Pender: Okay, great. All right, we're pretty much out of time. We really appreciate everyone's questions and participation this evening. We hope this webinar session was helpful, and we look forward to continue our dialogue with you, all of our customers as we continue to implement these critical safety efforts. If you would like to invite others to an open house or a webinar like this one, we're going to be adding a couple more webinars over the next couple months, and the dates for the open houses, the in-person open houses are already on our website.

Matt Pender: As I mentioned before, if we didn't get to your question, please do submit it. The email address and phone number are on the slide that's up still. And again, the email address would be [wildfiresafety@pge.com](mailto:wildfiresafety@pge.com). So thank you all for taking the time out of your evening to engage with us on this important topic. Nothing is more important to PG&E than keeping our customers and communities safe. We know that we need to work together with all of you, as well as local governments, first responders, and many others to keep all of our communities safe against this increasing wildfire risk. So thank you again. Be safe and have a good night.

Donna:

Thank you all for joining us today. We hope you found this webcast presentation informative. This concludes our program, and you may now disconnect.