[CLICKS]

[MUSIC PLAYING]

[CLICKS]

We found a broken strand, a bunch of broken strands. That's definitely a strand broken there. You can see it from that side. There's a little black spot on the conductor. Like, that one gets fixed.

Yeah.

That one should go away. That one should go away. Once we get that--

There's only one strand in the steel core holding it, so that--

So that--

--to me, goes to an A tag.

We're working on some new technology that can find things before they break.

Right on.

It's pretty transformational. It can change how you monitor the grid. EFD stands for early fault detection. This EFD system is different than a lot of other sensor systems we have. It's looking at something that's caused by partial discharge, basically arcing.

The partial discharge that it's picking up can be caused by cracked insulators, conductor strands that are broken, transformers that are starting to fail, splices that are bad. Tree branches coming in close to it, that gets picked up. We've never had anything close to this.

This is the past alert that we were tracking.

This is the broken tie wire that we looked at.

Yeah.

There's a controller box which has got the brains and the power supply, and then there's three little pods that go up on a cross arm that's right underneath the conductors, about 30 inches below it. Direct it up towards the conductor, picking up signal. We have these sensors that are placed every three miles, and they're basically measuring signal between those conductors.

The system itself is just a passive listening device. It's just sitting there listening to the electromagnetic field that is emanating from the power lines. Anything that has electricity flowing through it, we can monitor. It finds defects down to plus or minus 30 feet.

I mean, it's at this approximate location, plus or minus 30 feet. So it could be 30 feet that way, 30 feet that way, or 30 feet that way. This is like having that Check Engine light in your car, or all the lights that say, OK, your tire pressure is low. Something's not right with your engine. You need to go look at this now versus waiting till your next service.

The system had just gone online, and we got all the sensors commissioned and we started collecting data. And we started finding these little hotspots, areas we wanted to look at. We started going to them one by one. We drove up, parked the truck. We got out and we'd go out and look up. And sure enough, there's like broken strands.

Across the road, there's the park.

See this one? It's very difficult to see this without this technology.

And once we saw it, it was like, oh, yeah. The things that are starting to fail, we will know about them before they fail.

It's just they're collecting data every second, sending that to the cloud. And that's where all the magic takes place, like locating the defect, and as well as classifying the type of defect that is occurring. With that data, we're able to let PG&E know where to look and what to look for.

Most of what we're working on is to reduce wildfire risk, but it does translate into reliability and restoration. Because if we can find these things before they become an outage, there's no outage to go fix.

As you've seen today, some broken conductors, some broken strands that we've been able to detect. That's just another day at the office.

[MUSIC PLAYING]