After Hurricane Milton, a growing risk: Flooded Tesla electric cars going up in flames

Story by Ashley Miznazi

As emergency crews respond in the aftermath of Hurricane Milton over the next few days, they'll have to deal with a lot of dangers in the damage along the Gulf Coast — downed power lines, unstable ruins, leaking natural gas tanks and pipe lines, chemical spills and more.

There is one other growing concern that is unique to coastal areas in Florida and other hurricane zones — the spontaneous combustion of electrical vehicles flooded by the salty storm surge.

Not every EV flooded by storm surge goes up in flames but it's become frequent enough that insurers, car makers, fire chiefs and politicians have all issued warnings to EV owners in advance of the expected devastation of Hurricane Milton. And it's not just cars that are a concern.

Jimmy Patronis, Florida's chief financial officer and state fire marshal, issued a statement on Monday detailing a string of fires in the wake of Hurricane Helene, which flooded much of the Gulf Coast just two week ago. The state found 50,000 EV and hybrid registrations in the path of Hurricane Milton's storm surge and counted at least 64 lithium battery fires after Hurricane Helene. EVs accounted for 17 of those but the rest were devices like scooters, hoverboards and golf carts. One fire was even sparked by an electric wheelchair.

Geico, a major insurer of cars in Florida, sent an email on Wednesday citing Patronis' statement to its policyholders warning them about the threat for EVs and suggesting looking for protected parking areas. Tesla also sent a push notification to cars warning owners to move to higher ground.

The threat of lithium battery fires, which are difficult to extinguish, could worsen damage to homes and buildings after floods, he said.

"The average citizen I guarantee you does not realize they have a liability in their house with the salt water flooding," Patronis told the Miami Herald in an interview on Wednesday. He called flooded lithium-ion batteries "ticking time bombs" that could cause worse damage than the storms that damaged them.

Social media has captured a number of EV fires over the years. In one recent viral surveillance video posted by Pinellas County, a Tesla flooded by Helene's storm surge loudly combusts before it catches fire and fills a house garage with smoke in under a minute. Tampa Mayor Jane Castor, in a news conference, also said a home in Davis Islands was though to have burned down after Helene because of an electric vehicle fire, too.

"Water and the ion batteries do not mix, and they literally explode," she said.

This is the basic problem: Saltwater conducts electricity so if it gets inside a sealed the lithium-ion batteries used in cars and many devices, it can a cause a short-circuit, which creates heat and

potentially fire. The effect is akin to accidentally touching both terminals of a car battery with a wrench — sparks will fly.

Harder fires to put out

Lithium battery fires after salt water flooding are not a new worry. The first reported EV fires emerged as far back as Oct. 2012 after Hurricane Sandy. But as more and more drivers go electric, there have been more of them. The National Highway Traffic Safety Administration found that during Hurricane Ian in 2022, between 3,000 to 5,000 electric vehicles were impacted by the storm, with 600 being a total loss and 36 catching on fire.

Tesla's vehicle guidance on its website says not let the vehicle become submerged in water, and if it ever does, to keep it at least 50 feet from structures until a mechanic can take a look at it. With some water-damaged EVs, a mechanic can take out the battery and dry it out. One University of South Florida associate professor also is working on developing a battery that would prevent post-hurricane fires.

Andrew Klock, who oversees EV training programs for first responders at the National Fire Protection Association, said battery fires are rare but firefighters need to know how to handle them.

"Firefighters have had 100 years to figure out how to put out a gasoline car fire, they can put that out very efficiently," Klock said. "Whereas a battery, once it started, it's not as easy to put out."

Electric vehicle batteries are sealed, and designed to keep water out. But, Klock said, seals deteriorate over time and salt water is corrosive. In rare cases, salt water flooding can trigger a chain reaction of short circuits called "thermal runaway" sweeping through the internal cells within the battery.

When that happens, a fire can be hard to control. Usual methods of putting out a fire like a blanket won't work, and because the battery is encased in steel it takes awhile for the outer box to cool off.

The National Highway Traffic Safety Administration said battery fires can happen weeks after electric cars were submerged in salt water and the fire can take hours and anywhere from 3,000 to 8,000 gallons of water to put out.

Patronis said he saw the challenge firsthand. After Hurricane Ian two years ago, an electric vehicle caught fire in Collier County and a firetruck exhausted all of its water in 10 minutes trying to put it out. They ran a fire hose on the car for another hour to put out the flame, and then at 6 p.m., it reignited, he said.

It's important to note that outside of salt water flooding damage, electric vehicles actually are much less of a threat to catch fire than gas vehicles. Data from the U.S. National Transportation Safety Board shows that there are approximately 25 fires for every 100,000 EVs sold. That's in comparison to are approximately 1,530 fires for every 100,000 gas-powered vehicles sold.

Patronis stressed that he wasn't suggesting that EVs posed risks under regular usage.

"It's a fantastic technology, and isn't a problem in Atlanta or Oklahoma or Dallas," Patronis said. "It's a saltwater problem for storm surge areas. I always feared Tampa Bay."