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compete with gasoline-fueled vehicles, according to the U.S. Department of Energy.

Next year's electric models range from the \$29,990 MINI two-door, to the moderately priced \$39,990 Kia Niro EV, all the way up to the \$150,900 Porsche Taycan Turbo. Volvo has stated that by 2030, it would produce only electric vehicles. General Motors aims to offer 30 different EV models by 2025.

The first full-sized electric pickup from a major manufacturer, the Ford F-150 Lightning, is expected to hit showroom floors in mid-2022. The Lightning, which will start at \$39,974 according to Ford's website, looks similar to Ford's other F-150 trucks. There are no Ford Lightnings in area showrooms as of this publication's deadline, but you can reserve one online from your local dealership.

At its Bluebonnet service-area factory, Tesla and its CEO Elon Musk have said the company will make the newest Model 3 sedans, Model Y crossover SUVs and two new vehicles: the futuristic looking Cybertrucks, starting at \$39,900, and the big Semi trucks for long-haul commercial drivers, starting at \$180,000.

Manufacturers are touting many of the new EVs' increased ranges (the distance an electric vehicle can drive on a single charge) and affordability. Nissan's 2022 Ariya, an electric sport-utility vehicle, will retail for about \$40,000, according to an estimate from Consumer Reports. The Ariya will have a range of 300 miles on a single charge if the buyer chooses the "long-range battery" option.

U.S. electric vehicle sales could account for 25% to 30% of the new-car market in 2030, and as much as 50% by 2035, according to projections by IHS Markit,

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# And miles to go before I charge

## One electric vehicle driver's cautionary tale about proper planning to avoid 'range anxiety'

By Dana Frank

**NOT SO LONG AGO**, I drove regular gasoline- or diesel-powered vehicles. When I needed to fuel up, I could feel it in my bones and, of course, see it on the fuel gauge. I filled the tank when, and not before, the gauge neared E.

Half my life, I've lived 30 miles from a metro area, and the ability to drive wherever, whenever, has always been essential. I'm not alone in my drive for independence. The automobile is celebrated in America, which has nearly 50 million more cars than licensed drivers, according to the federal government. I'm in Texas, after all, where driving near and far most every day represents my autonomy and freedom.

But I've paid the price for that independence. On my round trips to town every day I cruised into gas stations, and I bought a lot of fuel. I had a 1998 VW diesel Bug that cost \$11 to fill and pounded out nearly 50 miles to the gallon. But I also drove several thirsty pickups and one muscle car (don't ask) over the years and came to resent the pricey twice-weekly gas station stops.

A few years ago, though, aside from annoyance at paying upward of \$300 a month for gas, I had begun to feel guilty about the carbon footprint of my long-distance com-

mute. The quiet electric vehicle beckoned from the shadows of my awareness, and I bought one.

Now the energy source I need in order to travel from here to there doesn't flow freely from easy-to-reach pumps dotting Texas roadways. Some EV owners, including me, have to hunt for vehicle juice, at least for now. I'm a believer that someday the electric vehicle-charging infrastructure will ramp up to meet demand.

Until that time, if you see me or other EV drivers rolling along, nervously alert for our elusive quarry — a charging station — understand that our condition has a name: range anxiety.

At first, my transition to the world of EVs was easy. I "researched" them on the coattails of someone else, then traded my gas-fueled car for a brand-new zippy, compact four-door 2019 Chevy Bolt. I could plug my car's charge adapter into the 120-volt outlet in my garage and get an overnight charge. I gleefully drove past gas stations and gradually got used to my car's power needs. I was coming and going just like my petroleum-powered days, traveling at least 60 miles a day.

The bright dashboard display showed me precisely what time my electric charge would be complete. If I plugged in at home at 6 p.m., say, I'd have a full charge by the wee

## NEW MAKES, MODELS OF ELECTRIC VEHICLES IN 2022 AND BEYOND

Automotive News, a weekly newspaper for the automotive industry, estimates that there will be nearly 100 models of electric vehicles available nationwide by the end of 2022. Buyers will see more crossover sport utility vehicles and pickups, from full to mid-size. Many new models will arrive in 2022, with preorders available now. Several automakers have also released plans for vehicles through 2024.



### Chevrolet Bolt EUV

**Starts at \$33,000;** Electric SUV, 2022 models in transit to dealers, available for purchase now; 247-mile estimated range; dual-level charge cord with attachment plugs for 120- or 240-volt outlets; hands-free and semi-autonomous driving assistance features; Level 2 charging outlet installed by Chevrolet at home of eligible buyers



### Kia EV6

**Starts at \$58,500;** First edition of new Kia line of crossover EVs, limited number (1,500) being produced, coming January 2022; seats 5, futuristic design with dual curved screens and display, estimated 300-mile range; wait list available



Dana Frank charges her 2019 Chevy Bolt electric vehicle at a charging station in San Marcos. Now that she can't charge her vehicle at home overnight, she tries to find places where she can go about her daily routine while charging her car. Sometimes that takes planning. *Laura Skelding photo*

hours of the next morning. I wasn't worried. A full charge on my Bolt could carry me 250 miles, give or take. That was plenty.

But a year and a half later I moved. At my new dwelling, I no longer have a place to plug in at night. There's no retail charging station nearby, either. I don't always start the day with confidence and a feeling of freedom. My mornings often begin with a question: Can I get where I need to go? Can I make it to Independence in Washington County to meander among the blossoms at the Antique Rose Emporium? This is when my range anxiety kicks in.

So I map my meanderings in relation to retail charging stations, like the one at the city park where I swim, and the one near the coffee shop where I write. If all goes to plan, I easily get my charge, take a deep breath and sometimes even feel a bit prideful.

Sometimes, however, things don't go according to plan. I approach a parking spot that has a charger, and it's occupied and in use. My heart sinks and tightens in my chest. Don't even get me started

about charging spaces that are occupied by a vehicle that's not electric. I may have only 57 miles of range on my gauge and miles to go before I sleep. I must conserve enough range to reach a charging station in the morning. One day I was down to my last 5 miles before I found a place to charge. My anxiety rises in inverse proportion to my range gauge, and I'm no longer smug.

The happy news is that range anxiety is a treatable ailment. Planning ahead and using common sense are the easiest cures. But for those considering an electric vehicle, I have some advice.

- Charge your EV at home. Whether you plug your vehicle's adapter into a 120-volt outlet or use a dedicated wall-mounted charger, the ability to consistently and easily charge up while you sleep is the number one cure for range anxiety. When I move again, that will be a priority.

- Get hip to the apps that display EV charging stations' locations and their availability, so you have good back-up options.

I'm behind the curve on that, I admit. You can get there with ChargePoint, PlugShare, ChargeHub EV Map or Chargemap. Even Google Maps shows the location of EV charging stations now.

- If you're getting worried about making your destination, ease up on the go pedal and, if you can, turn off amenities such as the AC and radio. Their use drains your range. For example, when I turn off my AC, I watch the range level rise in real time by about 25 percent. Yes, turning off the AC is a lot to ask in sweaty Central Texas, but that range-expanding peace of mind may be worth it.

- If you drive a lot, and can do it, go ahead and splurge for one of the newest electric vehicles. Many 2022 EV models tout ranges of up to 300 miles per charge. The newest technology may be the best way to battle range anxiety.

My particular case of range anxiety probably falls under the category of "user error." Don't let my story of hitting the occasional speed bump deter you from charging into the electric vehicle revolution.



### Hyundai IONIQ 5

No pricing available; crossover, coming in 2022; estimated 300-mile range (168 kilowatt motor); equipped for "ultra-fast charging" of 60 miles range in 5 minutes; two years unlimited 30-minute free charging on some DC fast chargers in partnership with Electrify America



### Also coming

- 2022 Tesla Cybertruck (manufactured in Travis County)
- 2022 Toyota bZ4X, Toyota's first electric crossover SUV
- 2023 Subaru Solterra, Subaru's first electric SUV
- 2023 Jeep Wrangler Magneto (above)



- 2024 Ram 1500 EV, a full-size pickup
- 2024 GMC Hummer (above)
- 2024 Honda Prologue SUV
- 2022 BMW and Mercedes Benz, releasing multiple EVs including small cars such as EQS from Mercedes Benz and SUVs such as the 2022 iX from BMW