The Recharging Conundrum

In the previous articles in this series, we looked at the times needed to charge your EV for local use and the factors that influence charging time on long trips. In this final article, we look at some real-world examples of long trips to see how charging worked out.

An Out of Town but Not Real Long Trip

My wife and I drove to Oxford, north of Cincinnati, and back, about 250 miles round trip, in our new Tesla Model 3, which has a rated range 260 miles.

An hour or so out of Columbus, we stopped at the Supercharger in Dayton, just off I-70, for a quick restroom and coffee break. For charging purposes, we could have skipped this stop easily, but we wanted a restroom/coffee stop. We plugged in, walked over to Panera next door, and found what we needed: caffeine! By the time we returned to the car, it had already gained 50 or 60 miles of range.

On the way back to Columbus, we stopped again at the same Supercharger, but this time did some grocery shopping. The Supercharger is at a Meijer store, we like Meijer, and we needed groceries – why not? The 30 – 40 minutes that we spent that had nothing to do with the time needed for charging; it was the time it took us to shop. That charging time gave us way more than enough power to get back to Columbus.

So was the charging "too slow"? Not at all; from our point of view it was a few seconds to plug in and then go do what we wanted to do anyway.

A Middle-Range Trip

We drove to visit family in western Pennsylvania, about 450 miles (including some local driving there). Heading out on I-70, we first made a quick stop in Cambridge OH to use a restroom and get some coffee. There was a Supercharger in the parking lot, so we plugged in – why not? The 10 minutes that we took for a rest break and coffee gave us 50 miles or so of extra range.

We then stopped in Triadelphia WV for lunch, where we again plugged into a Supercharger and walked to a nearby restaurant for lunch. Our sit-down restaurant stop took about 40 minutes, during which the car got nearly a full charge, and off we went.

After a couple of days in Greensburg PA chauffeuring relatives here and there, we started back to Ohio. We again plugged in for another quick (10 minute) stop in Triadelphia: the car didn't need to recharge yet, but after driving I-70 in western PA, we needed some personal recharging! Then on to lunch in Cambridge, and by the time we were done, the battery was almost fully charged, way more than enough range to return to Columbus. Again, we simply let the car charge on our stops while we went about our own business. Charge time was irrelevant.

Does it sound like charging was always a piece of cake? Well, yes and no. On the yes side, charging was truly simple: we just plugged in and walked away. On the no side, we had to do a little planning (figuring out where we would stop along the way, although the Tesla navigation system does most of the work for us), had fewer choices (using restaurants near the chargers), and had to walk a little farther than if we had just parked right in front of the restaurants. Had

we not wanted to stop for lunch, we would have had to wait for 15 to 20 minutes somewhere along the way.

The Day Long Trip

As we have not yet done a truly long trip in our newish EV, I asked Tim Freidenberger for an example. Tim, often accompanied by family members, drives occasionally to Otis, Kansas, a journey of 939 miles, in his Tesla Model X (rated range 230 miles). For most of us, a trip that long requires an overnight stop, and the following times reflect that.

Tim first makes a quick 20-minute stop at the Dayton Supercharger: coffee and restrooms are handy. Then it's on to a Supercharger in Indianapolis, where a one-hour stop around 11:00 am allows for both charging and lunch. (There's quite a variety of food choices, such as Fujiyama, Steak'n Shake, Pizza Hut, and McDonald's.)

Crossing the next state line, Tim usually gets to the Effingham, IL about 2:00 pm for a 50-minute charge. The Supercharger is in the parking lot of a gas station (this is becoming more common, although it seems a little ironic) and there are nearby restaurants to pick up coffee or snacks. The next stop is 40 minutes at St. Charles, MO at about 4:30. Depending on how hungry Tim and his passengers are, they might eat dinner at a nearby restaurant, such as Smashburger (now that sounds intriguing!). Then it's on to the overnight stop in Columbia, MO, where there's a Supercharger in the hotel parking lot, along with a restaurant if they didn't get dinner at the previous stop. It's a 40-minute charge, but of course it's at the hotel so doesn't really add extra time.

The next morning takes him to a Supercharger in Independence, MO for a 30-minute stop and a visit to the Bass Po Shop (always a favorite!) Then it's on to the Topeka, KS Supercharger, arriving about 10:30 for a 40-minute charge. As usual, restrooms and coffee are in the picture. Next is the Salina, KS Supercharger, arriving about 1:00 for a 30-minute charge and break. The last leg of the trip is to the destination in Otis, KS at about 2:30. (Recharging here is simple, as the house has a 240V outlet that's more than sufficient to charge overnight.)

That was quite an itinerary, so let's summarize: the trip in the EV takes just over 18½ hours. In Tim's gas-powered vehicle, and assuming the family is along and wants to eat reasonable meals, it took about 16½ hours; driving alone and powering through with minimal breaks, he's done it in 14½. In other words, the trip takes a bit over 2 hours longer in his EV if the family is eating real meals and relaxing along the way, and a little over 4 hours longer if he's alone and really pushing.

So, is two hours longer (or four hours in the marathon driving case) over the course of a two-day trip "too long"? That's a very subjective question: some people wouldn't care at all; others might think that it sounds like torture; and some would be in the middle.

But note also that the times, they are a 'changin'. For instance, the long-range version of the Tesla Model 3 is rated at 325 miles. That extra range on one charge would knock off at least one stop each day. (The length of the remaining stops would not change significantly because the newer car charges faster.) Moreover, the Superchargers themselves are getting faster, which can shrink the time further by shortening the stops.

Summary

In summary, our experiences suggest that charging on longer trips still can require some patience and is not quite as flexible as using gas. But the idea that you will sit staring blankly out the window while your vehicle charges for hours is way off base. Personally, I'm ready and eager to try a *really* long drive!

Thanks for reading along. If you have questions, why not visit the Drive Electric Columbus website at https://driveelectriccolumbus.com/ or Facebook page at https://www.facebook.com/driveelectriccolumbus/. Better yet, come to a Drive Electric meeting, where you can chat with EV owners about their experiences. Finally, Drive Electric member Alex Sibila has a YouTube channel devoted to EVs; his recent videos have covered some of the same topics that we discussed in these articles. Check it out at https://YouTube.com/alexsibila. Happy driving!