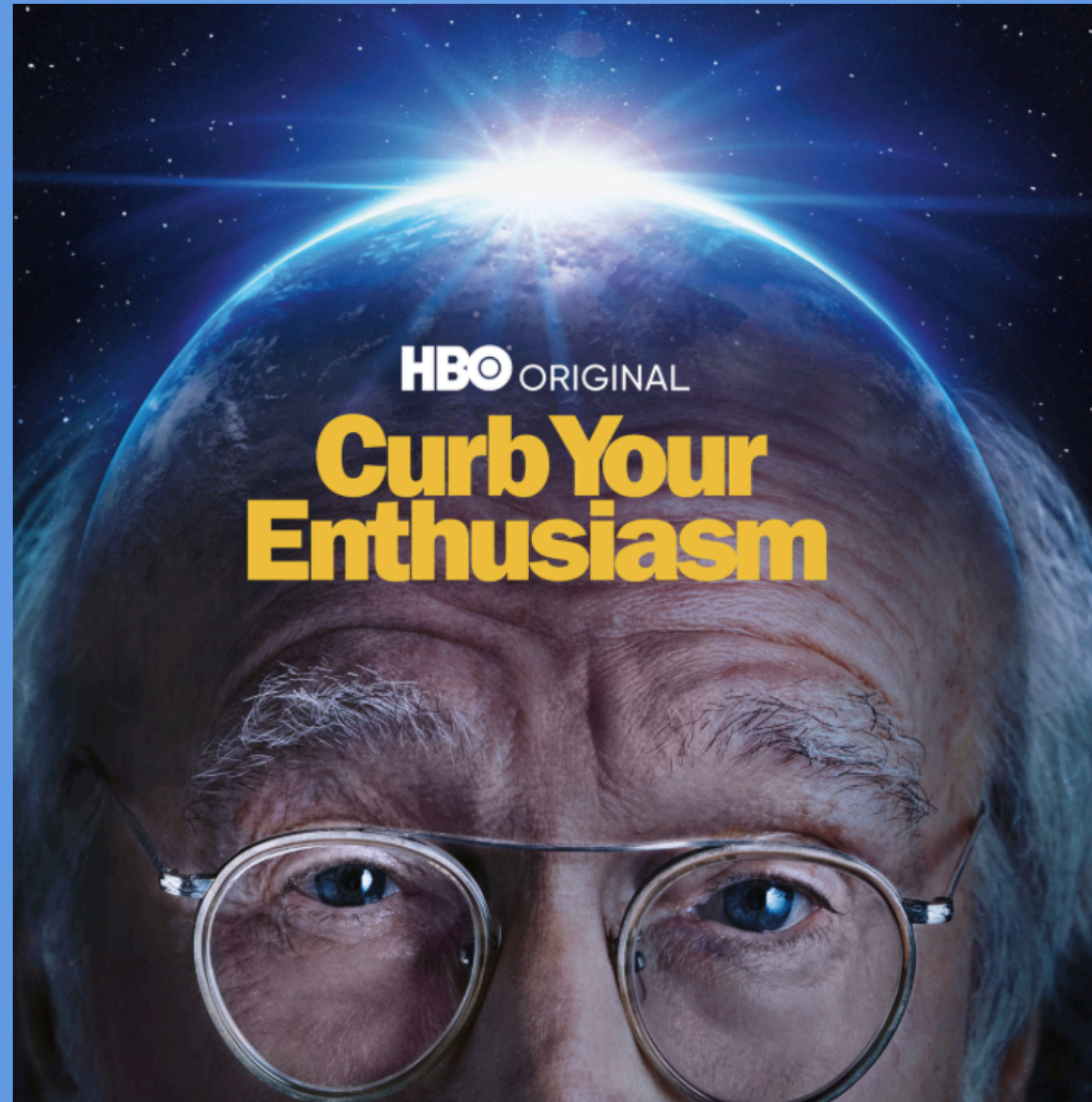


Looking Into Electric Cars

Session 3 : Charging



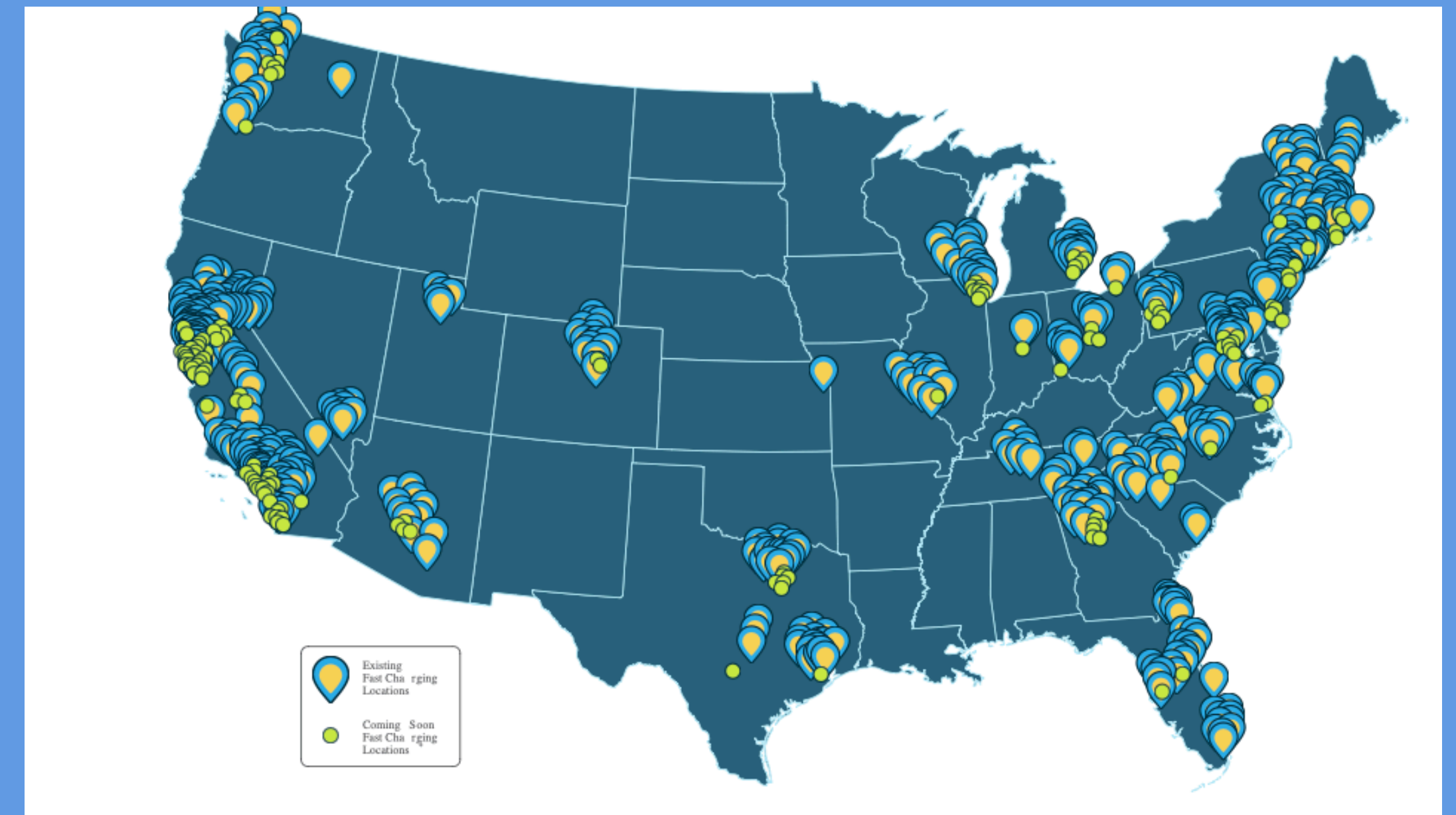
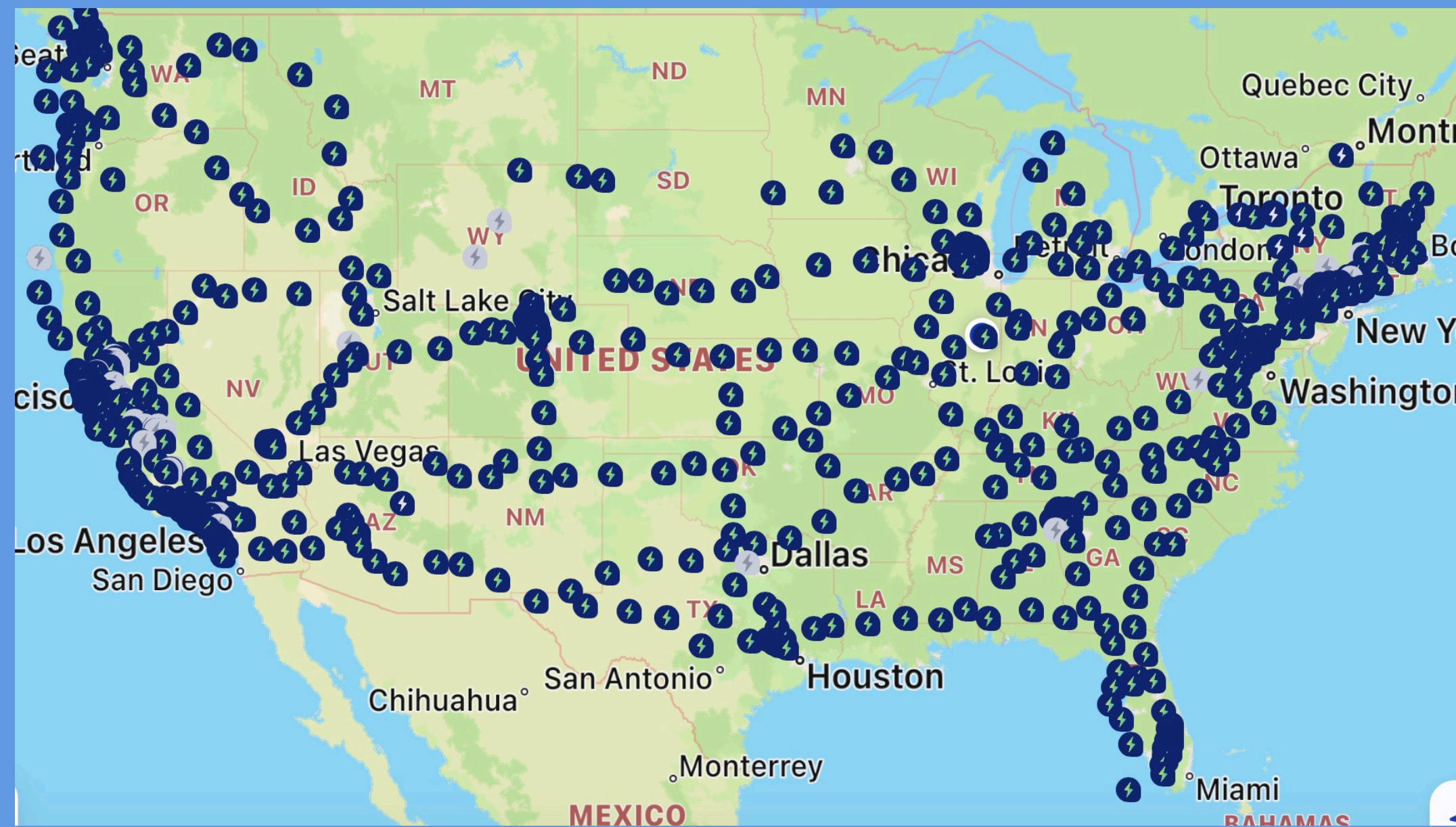
Sometimes my brain needs a leash
Sometimes my passion for the subject
gets away from me.
Last week I got into a bit of a rant about
EVGo.

So calmly stated -

Looking Into Electric Cars

Session 3 : Charging

Which network looks bigger
Which network gets you from NYC to LA
(Or IL to Tampa)



Looking Into Electric Cars

Session 3 : Charging

Breaking news

Tesla Stock: EV Giant Slashes Prices As Much As 25% Ahead Of Earnings

KIT NORTON

Tesla (TSLA) on Friday put in place additional vehicle price cuts in Europe, Israel and Singapore, continuing its 2023 price-slashing strategy ahead of its first-quarter financials release next week. TSLA shares edged lower Friday.

Tesla on Friday reduced prices in several European markets, including Germany and France, for all versions of the Model 3, S and X, as well as the Model Y Performance. In early March, Tesla had offered significant discounts

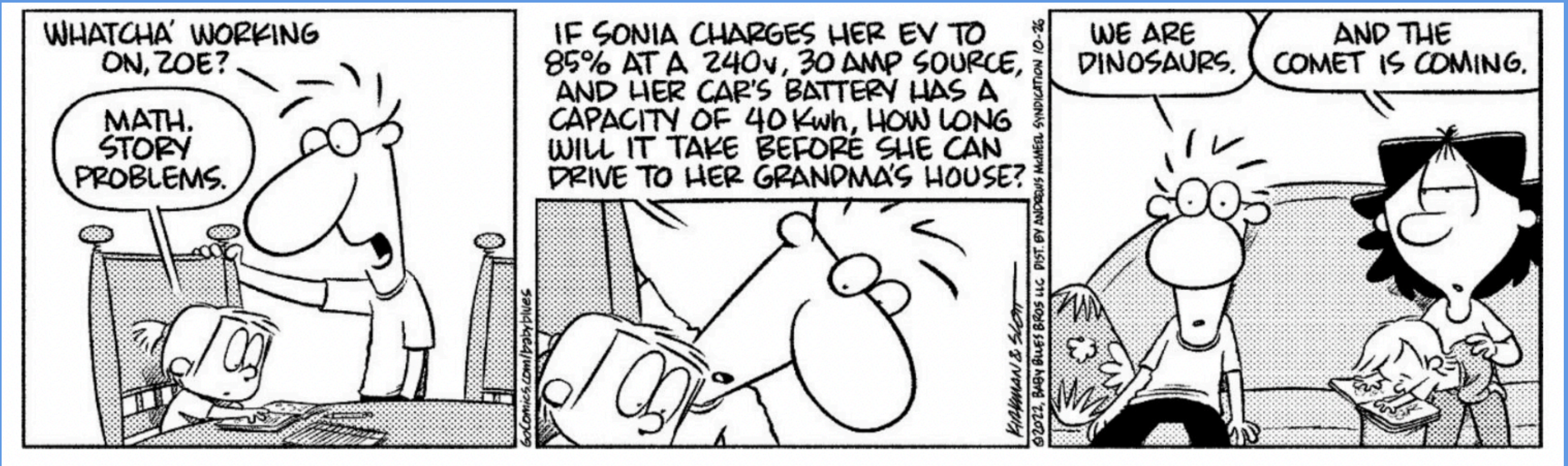
On the other hand the mistakes in the media about the recent regulations to reduce tailpipe emissions are through the roof. (I've been yelling at my TV a lot.)

Two examples : a person said that with fewer moving parts than gas, EV maintenance is “theoretically” lower their next story will probably say that the earth is theoretically flat.

A Washington Post (you expect better) columnist said the base price of a Chevy Bolt is \$40,000 (only off by 50%)

Looking Into Electric Cars

Session 3 : Charging



Looking Into Electric Cars

Session 3 : Charging



Looking Into Electric Cars

Session 3 : Charging

Last week was all about the hardware.

This week is the how and where
(Hint those two are related)

Session 3 : Charging

Just like there are three levels of chargers, there are three types of location (where) and each has a different goal (or how)

Home Charging

Destinations - at Work, School, Out and about
chargers that happen to be where you are at.

On the Road -

Choose a strategy to match your driving. And by its convenience.

Session 3 : Charging

Electric chargers have multiple levels of charging.

120V

Level 1

240 V

Level 2

Direct Current

DCFC - commonly referred to as level 3

Charging power of the three levels.

Level 1 1.2 kw 1.4 kw

Level 2 3.3 kw 6.6 kw 9.5 kw 11 kw 19 kw

DCFC 20 kw 25 kw 50 kw 62.5 kw 100 kw 125 kw 150 kw . . . 350 kw and up.

and these are just the ones that I am aware of.

**For convenience, it is best
if the charging speed matches why you are there.**

Home Charging can be either Level 1 or Level 2

It mostly depends on how far you drive

And your patience.

But remember - -

Charging at home is the most convenient all.



For some people, home charging can be done with a small appliance.

The average driver in the US drives less than 40 miles day.
How far do you drive ?

Federal Highway Administration data from 2019 indicates motorists in the U.S. drive an average of **39 miles per day**. Sep 22, 2021



If you are one of those less than 40 Level 1 might be all that you need.

Just use Level 2 public charging or DCFC

USA TODAY also said the Department of Energy estimates that 81% of charging comes at home, 14% at work and 5% at commercial chargers.

I only had level 1 at home for two years. It covered all of my in town driving



Charging is so easy it can be done with one hand while shooting a video

**If you often drive more than 25 miles everyday,
or make frequent trips over 100 miles,
you will be happier with a level 2. Or need level 2**

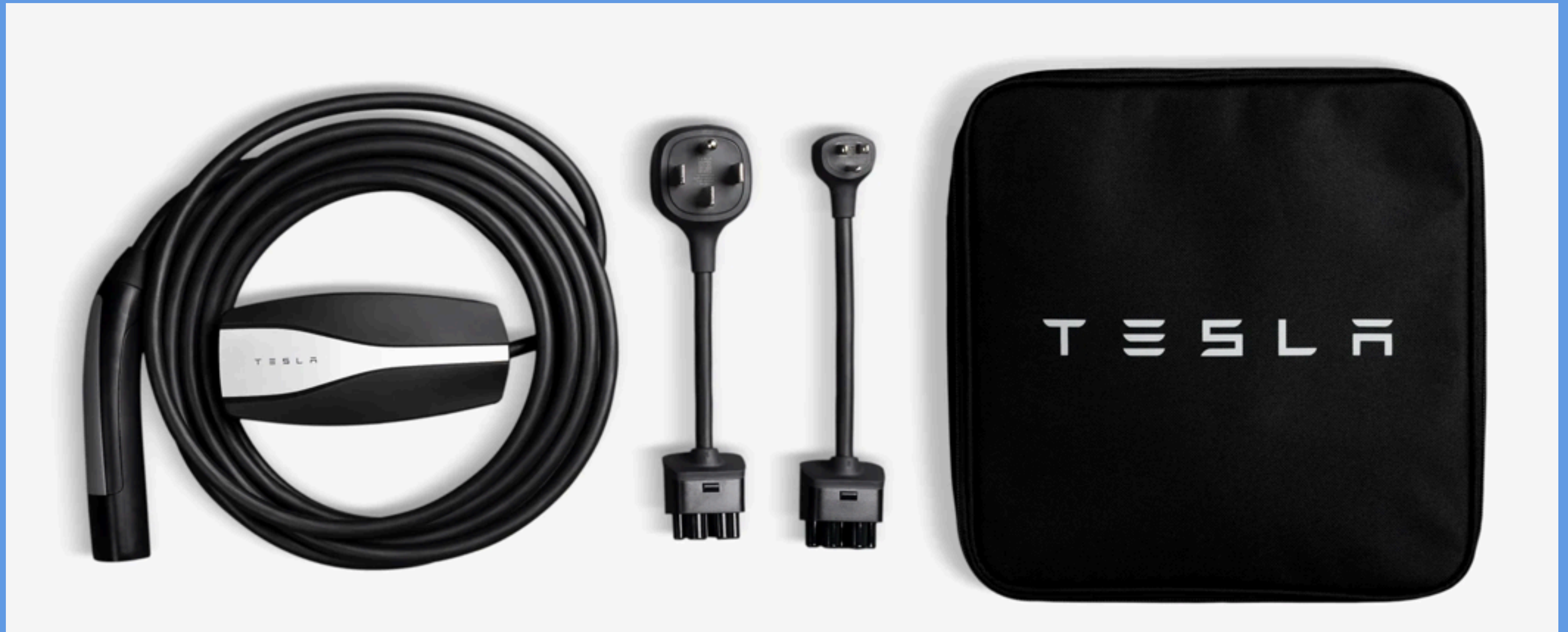
**If you need more than Level 1 and there isn't a 240 outlet in
your garage, changes need to be made.**

**And more EV manufacturers are including combo chargers
with their vehicles.**

**I only had level 1 at home for two years. It
covered all of my in town driving**

Tesla used to include the “Mobile Connector”

It is still available and comes with the standard 110 household plug and has various 240 plugs available.



Session 3 : Charging

Home



Either you have room

Or you don't



Often the biggest expense of a charger is the wiring.

The least expensive option is an outlet near the panel. Get a charger with 25ft cable and reaching the car is possible without special positioning of the car. Some EVs make it easier than others depending on the placement of the port on the car.

Often the biggest expense of a charger is the wiring.

With a full panel - options are limited.
Hope for a 240 outlet in the Garage.
That 240 outlet in the garage can be shared.





A splitter cable depends entirely on the breaker box for safety. I do NOT like these.

SplitVolt - makes one outlet into two. Is auto-switching. About \$299 Not yet UL approved.

NeoCharge - makes one outlet into two. Is auto-switching. About \$499 Elegant design. Is UL approved.

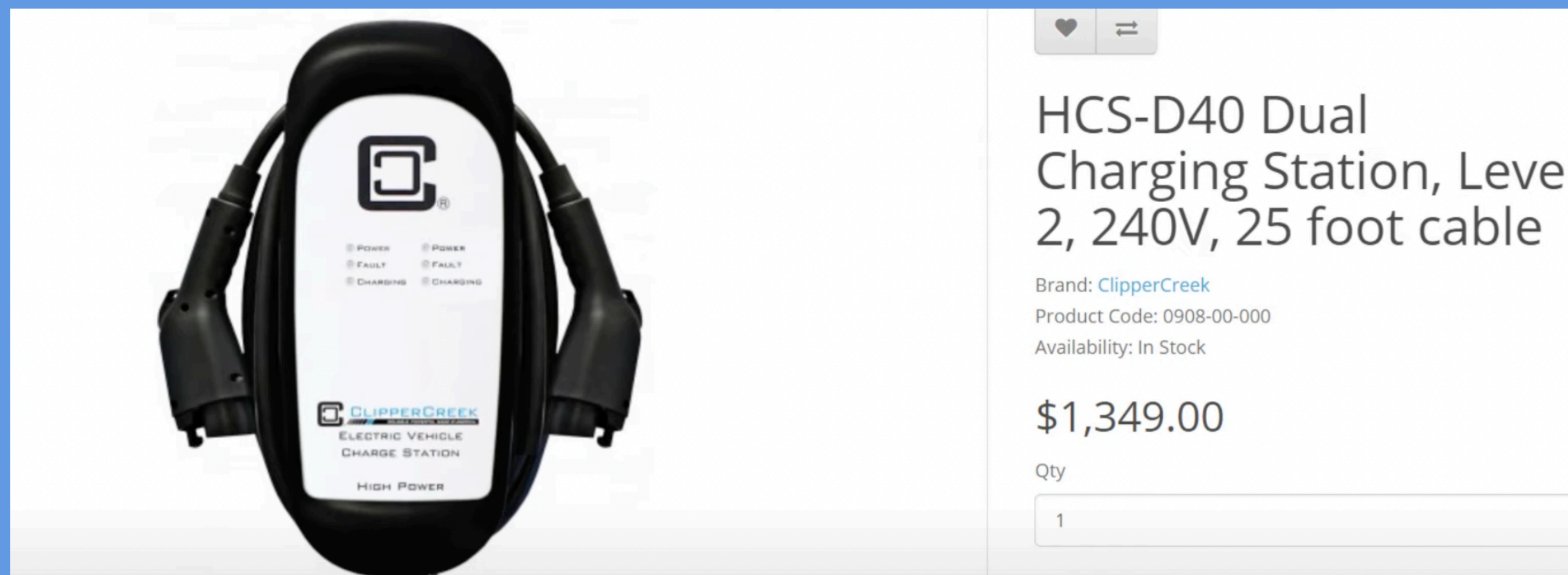
This is the one I got for my home. The full electrical panel photo is my house, house is 60 years old. The updates in 2010 and the solar panels in 2015 left me with nowhere to go.

I bought the \$500 switch so I could share the Dryer outlet with the EV charger. I can start both at the same time, dryer runs first, EV starts when the dryer turns off.



NeoCharge - makes one outlet into two. Is auto-switching. About \$499 Elegant design. Is UL approved.

With larger traveling distances a 32 amp charger would completely charge almost all current EVs from near empty to 100% in 10 hours. (adding 75 kWh) People that would want to recommend higher amp chargers are wasting your money. And some EVs might not accept the higher Level 2 charging levels.





I do suggest using level 1 at home but I do love my 16 amp level 2

The level 2 is handy for prepping the VW for almost weekly road trip.

I never use it on BMW, 8 hours on level 1 adds a week of driving.

UpDate - I have noticed that with some L2 chargers, going to a higher amperage is a nominal charge and I would consider it.

When trying to use the network app to start a charge -
It is often better to turn your phone WIFI off.

Too many apps like Electrify America DON'T REFRESH THE DATA
- if you had the app running before starting a charge, turn it off
and back on, to refresh the data.

Sometimes “unavailable” chargers that won't start with the app
will start by tapping credit card.
(Emphasis on sometimes -the point being if you're already there its worth a try)

Session 3 : Charging



Unlike home - you use what someone else thought was right for the location

Destination

Away from home there are public chargers



Session 3 : Charging



Plug & go



Plug & go
But ask
permission



Tap & go

Destination



Tap & go
but better
with App



Plug & go

This is just outside OLLI on level 3 of the Hill Street Garage. A perk since you paid for parking. Just plug in and almost walk away. Sometimes there is a false start and it fails just as you turn the corner. Public charging etiquette - if your car reaches a charge level where it stops charging. PLEASE - move your car.

Session 3 : Charging

Destination



Plug & go





**Plug & go
But ask
permission**

This one is at the iHotel – available for hotel or restaurant customers. They do want you to identify your car and if hotel or restaurant customer. Again - Public charging etiquette - if your car reaches a charge level where it stops charging. PLEASE – move your car.



Plug & go
But ask
permission



On left shows the 80amp capacity
of Tesla charger
Video talks about using the adaptor

Session 3 : Charging

Destination

Tap & go - Use a tap or contact free credit card. Generally if your'e paying for it, it's OK. The ones I'm referring to here are not networked. They often show up on apps, so they can be found. But the only way of finding out if available is to show up.



Tap & go



Its not easy doing a video while charging. Tapping my card was off screen. But there was little feedback from device but my car did say it was charging.

Session 3 : Charging

Charging with ChargePoint

Using ChargePoint equipment is simple and you can charge with or without the ChargePoint app.

ChargePoint is the largest network nationwide and most common networked level 2 in the area. They are also adding DCFC chargers. The following videos hope to show how charging with the app works.

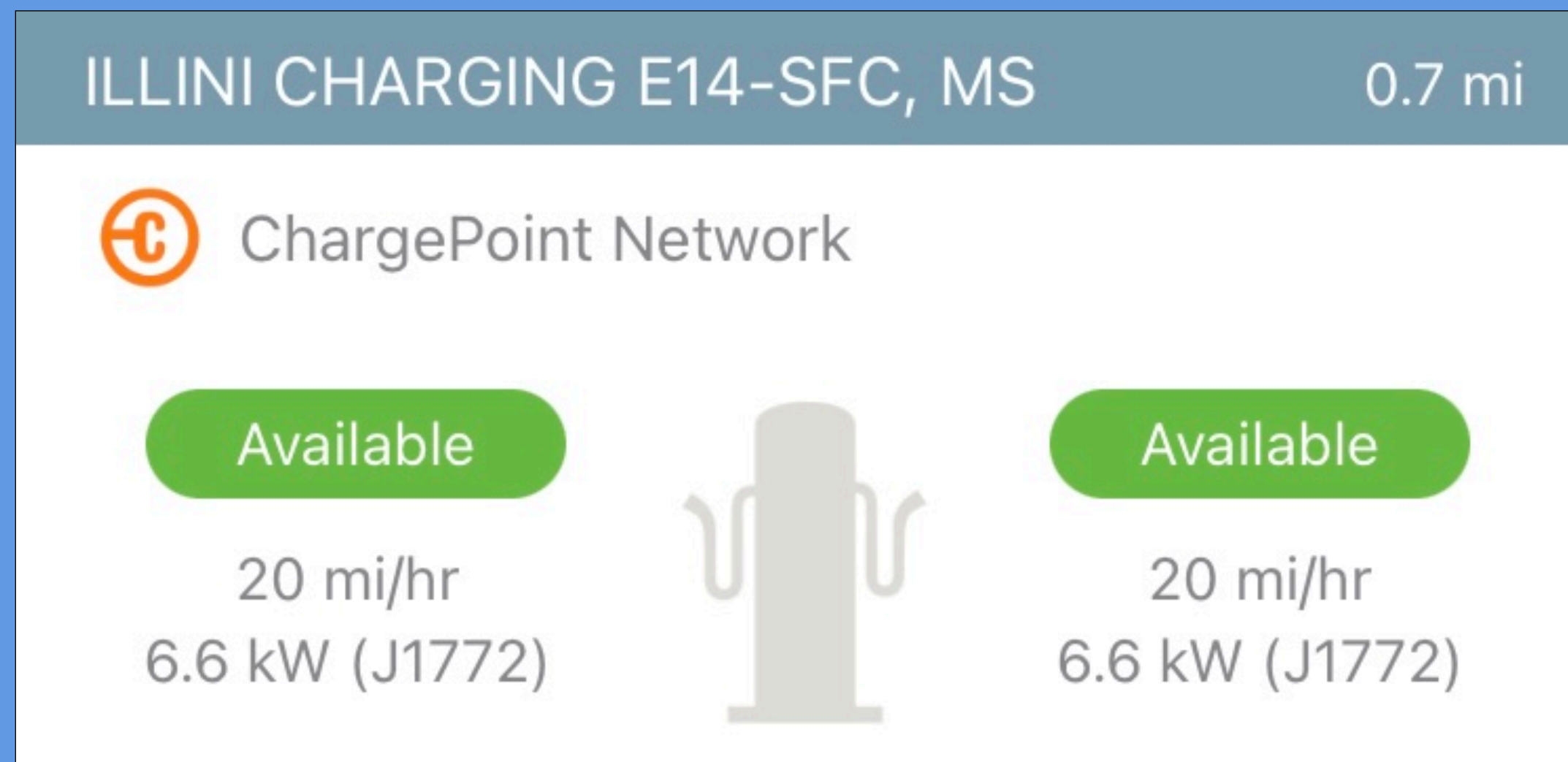
Destination



Tap & go
but better
with App

Session 3 : Charging

Better with the app. Showing up and tapping a card works. But with the app often shows availability, some apps allow for reservations (within hour of showing up). App with account w/credit card can get you discounts and better receipts, charging progress texts or emails. Etc.



Destination



Tap & go
but better
with App

Session 3 : Charging



Tap & go

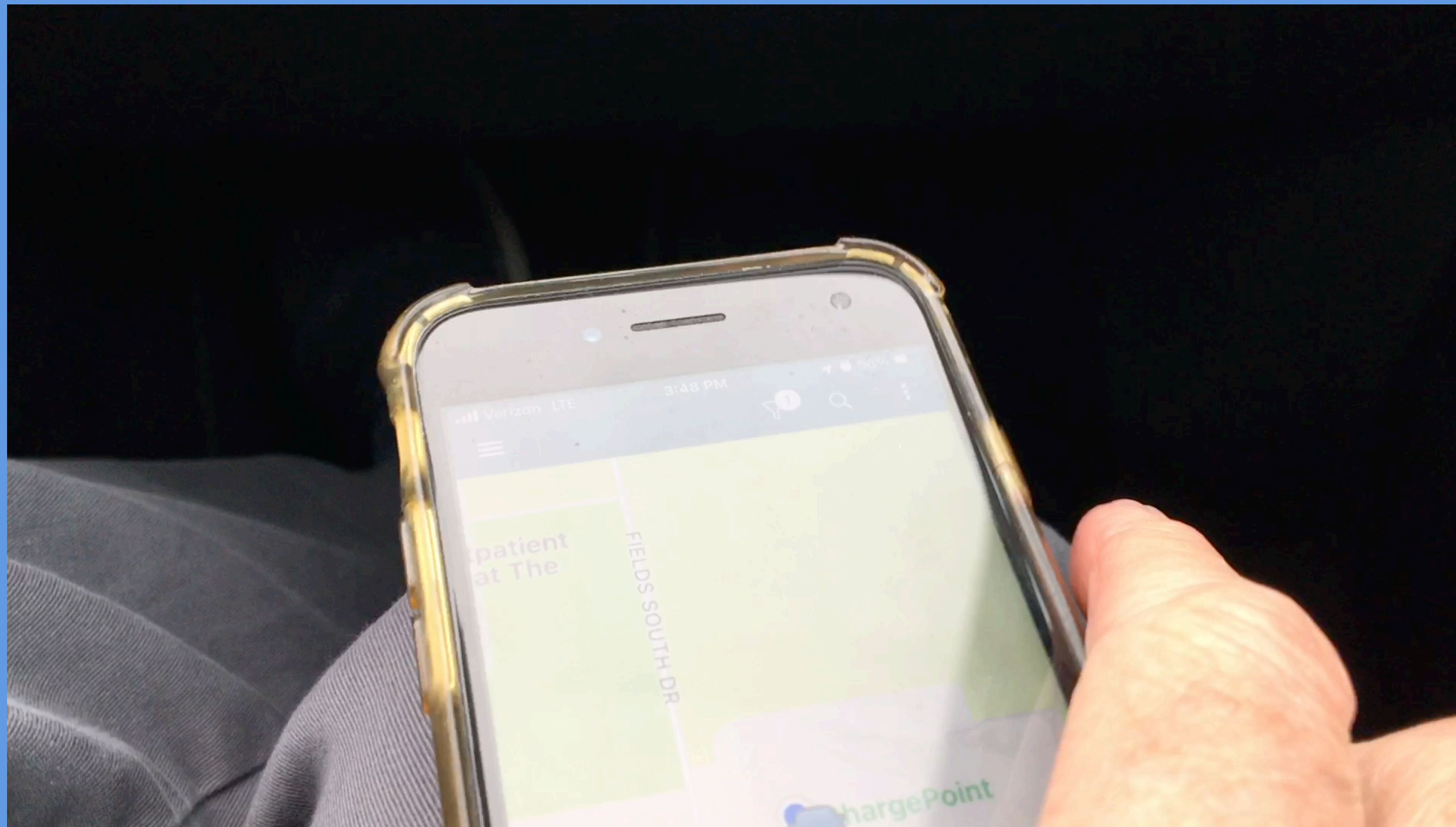
Destination



Tap & go
but better
with App

Session 3 : Charging

Destination

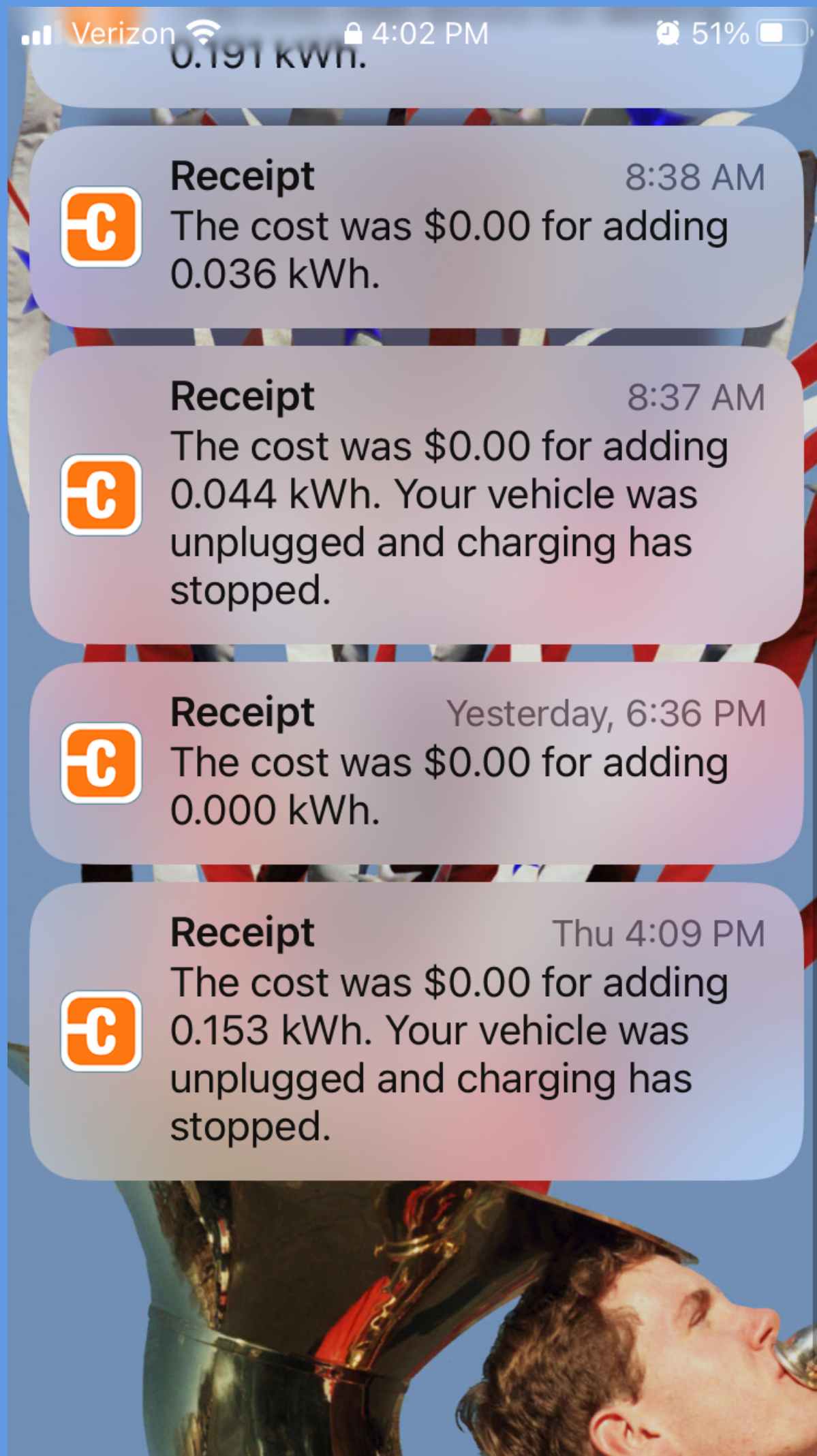


Watching on the app.

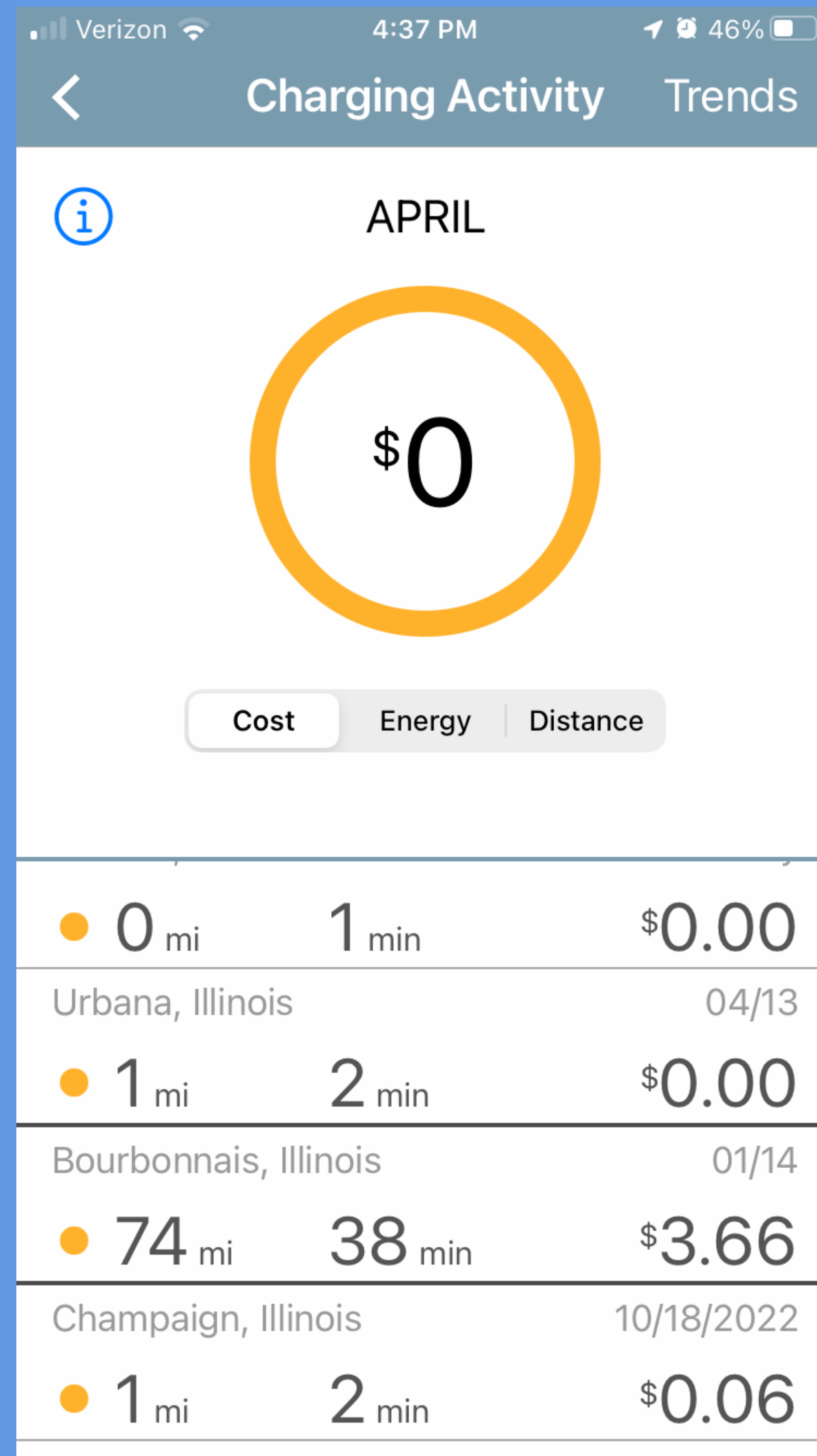


Tap & go
but better
with App

Session 3 : Charging



Texts on screen



Data in the app

Destination

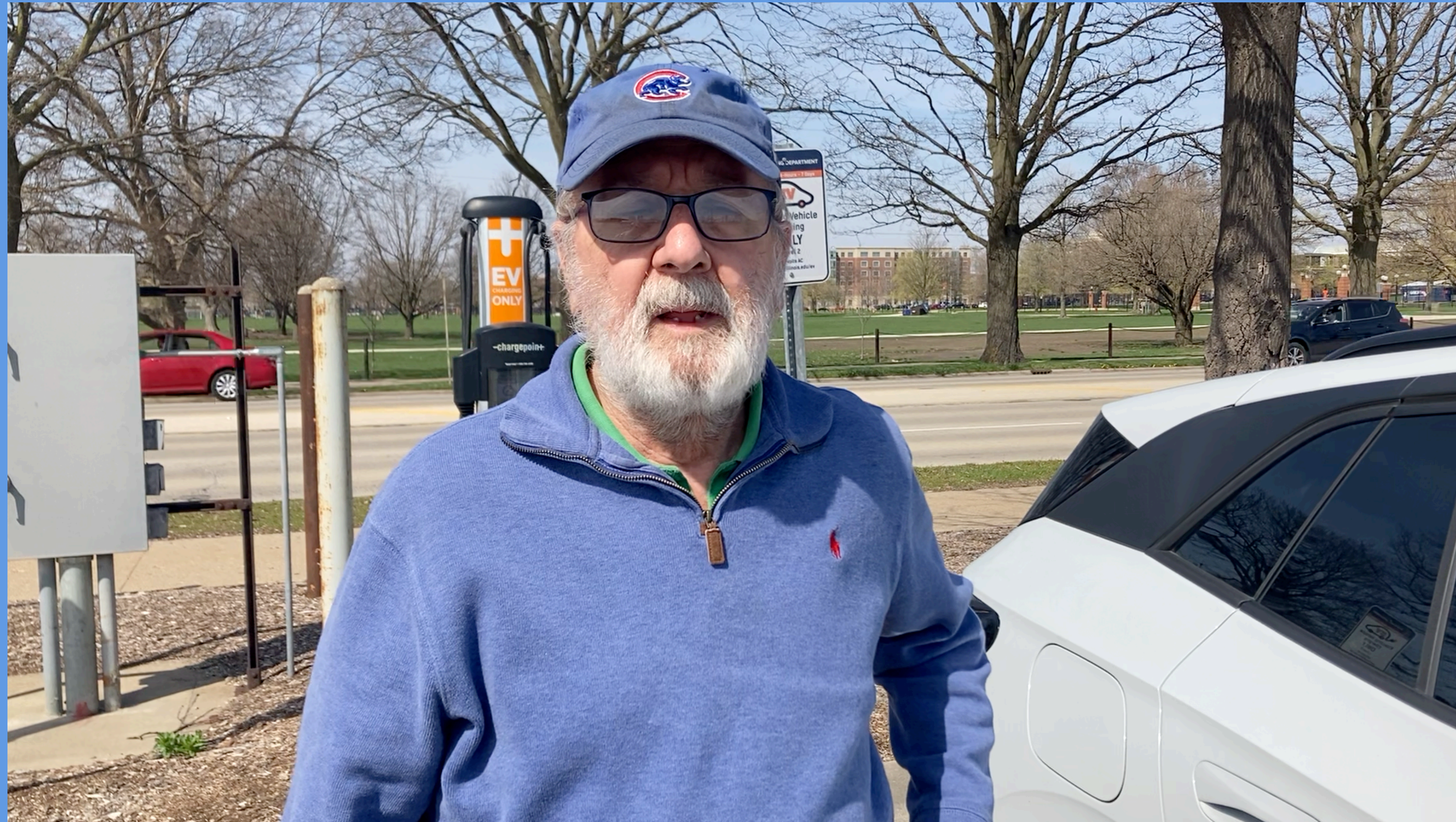


Tap & go
but better
with App

Looking Into Electric Cars

Session 3 : Charging

Destination



OK. Here's some honesty. On occasion you will go to a charger that is listed as available but is in fact broken.

Here is that information on a PDF.

If you would like this PDF - It is or will be put it on the OLLI download site.

Charging with ChargePoint

Using ChargePoint equipment is simple and you can charge with or without the ChargePoint app.

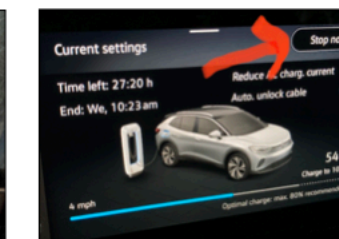


All you need is a contactless credit card (RFID) or phone. There are about 5 ChargePoint locations in the Champaign-Urbana-Savoy area. A few other L2 chargers by other providers show up on the ChargePoint App.

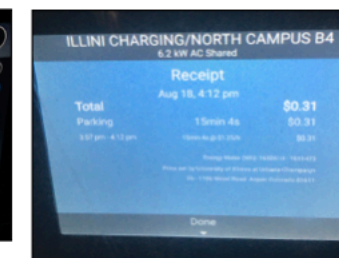
Wave RFID CC or phone at machine. Plug in when instructed.



When finished turn off charge from the car.



When session is over, receipt shows on the screen

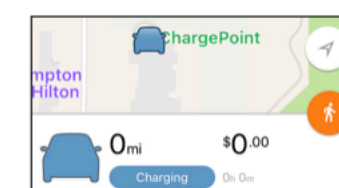


If plug doesn't release from car, unlock the car again. Really !!

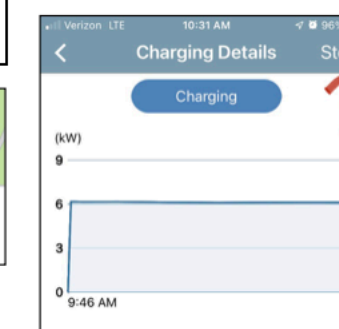


It is better when you use the ChargePoint App, more controls and possibly better rates. Log into App on phone, use phone to start charger and plug in when instructed.

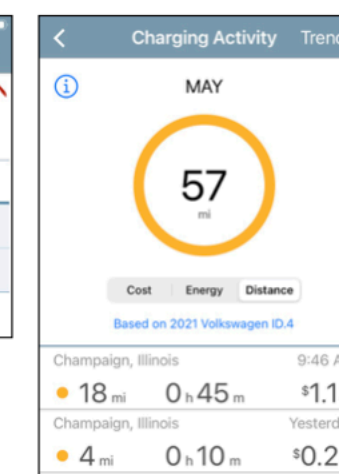
The Current Session screen pops up on bottom of screen. Tap that and you get more information.



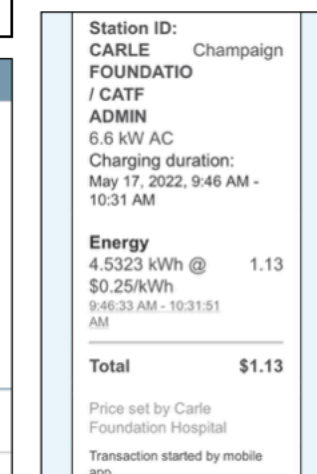
Charging can be stopped from the phone.



You can find summaries of all your sessions on the app.



A receipt will be emailed.



2022-05-25

Session 3 : Charging

The two largest networks with good national coverage are Tesla and Electrify America.



DC Fast Charging

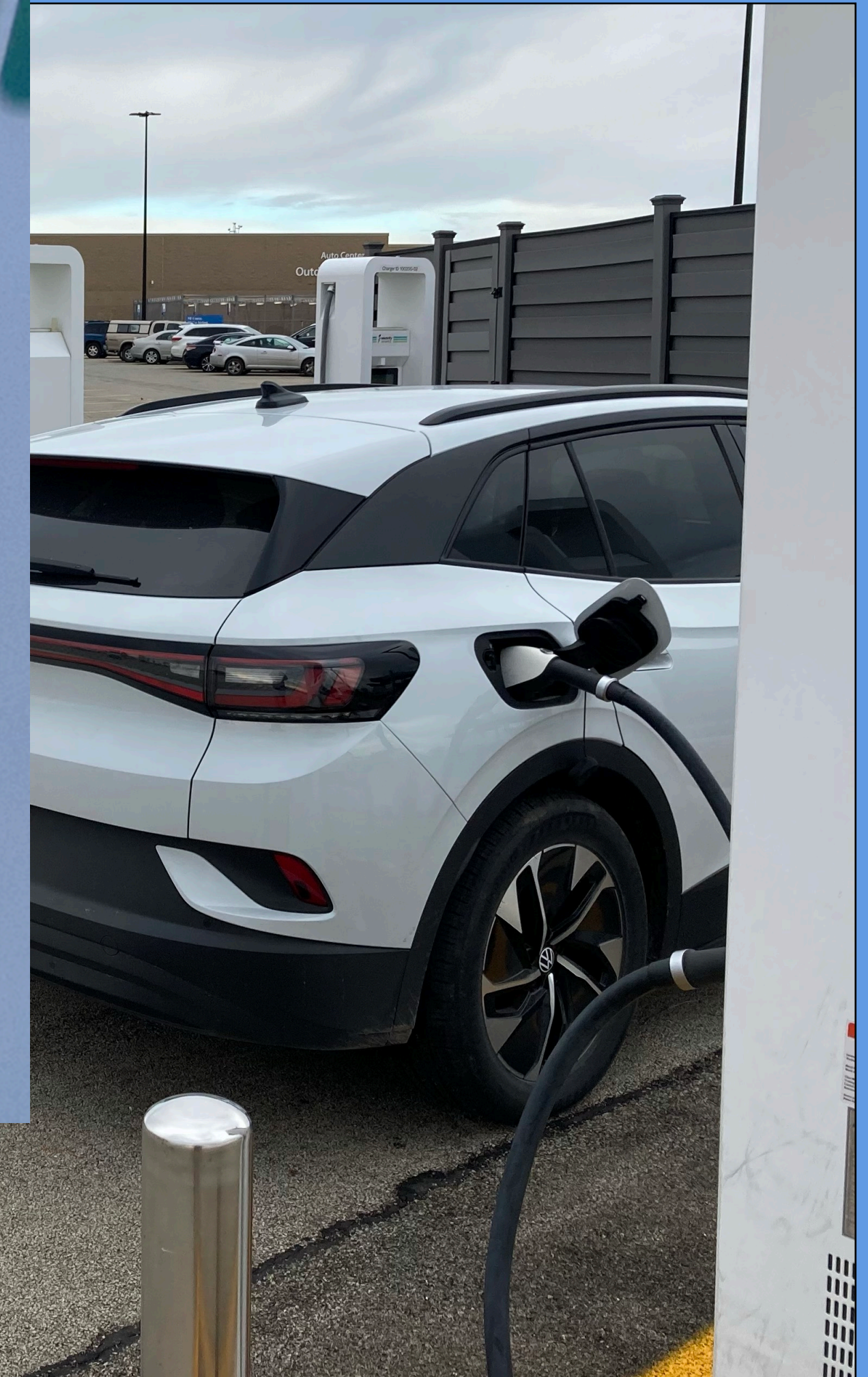


Session 3 : Charging

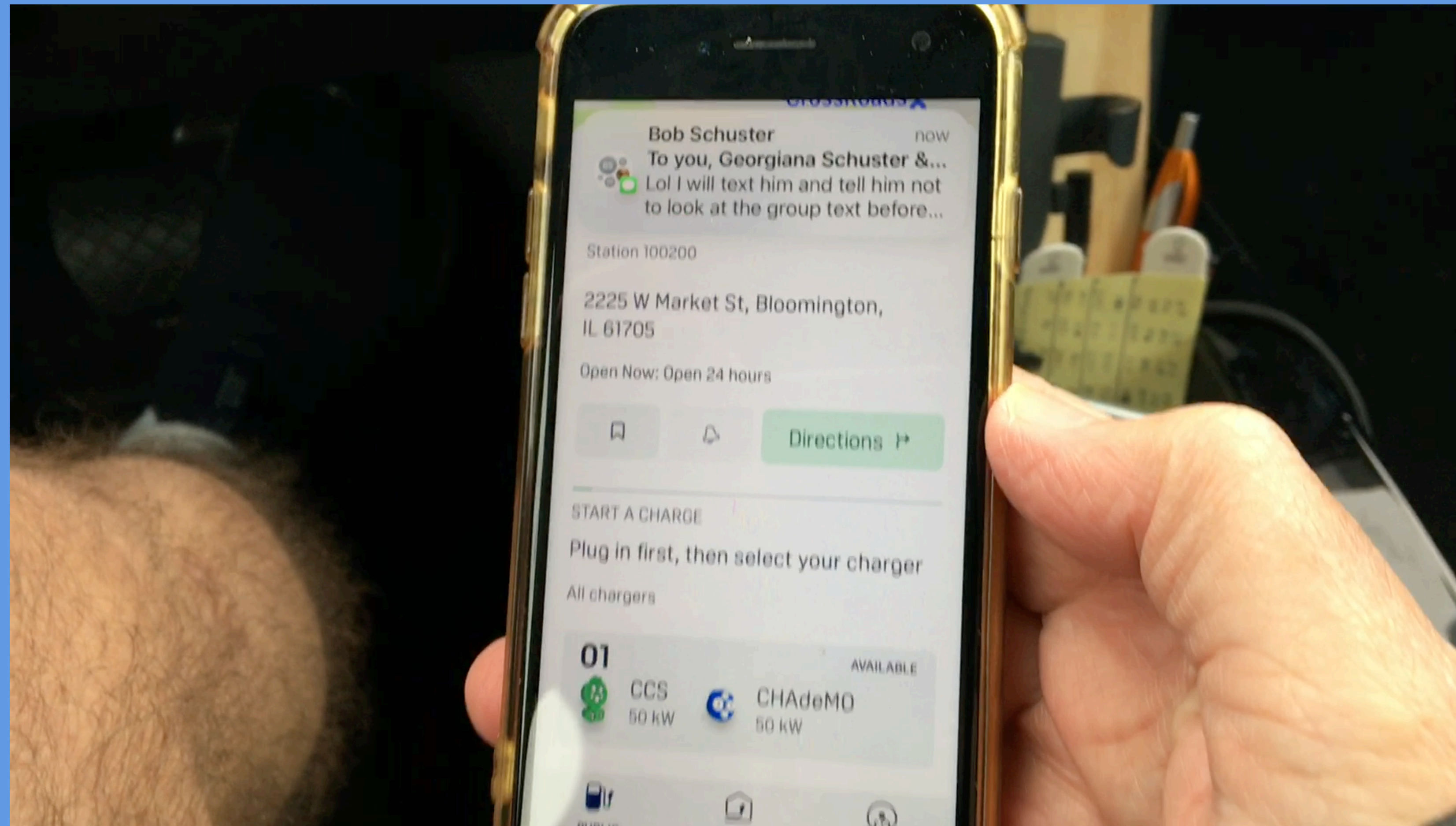
Since Electric America is what I use most, I will run through using their chargers. Using the equipment is simple and charging can be started with or without the app. You can charge with a credit card but by using the app you will get better rates. Current rates are \$.43 per kWh. The app automatically applies the discount. First find the station on the app,

DC Fast Charging

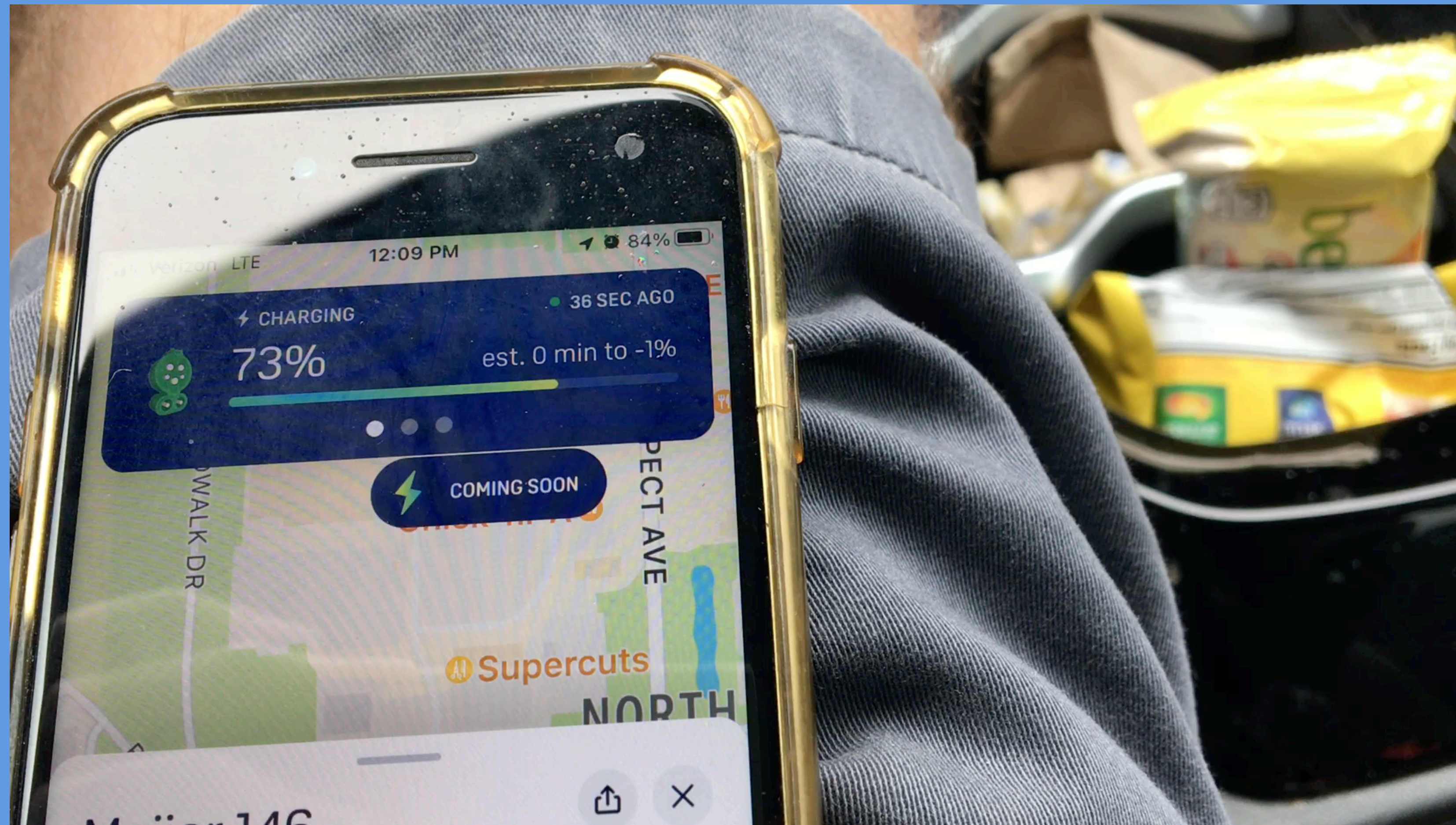




Plug in first



Use app to start

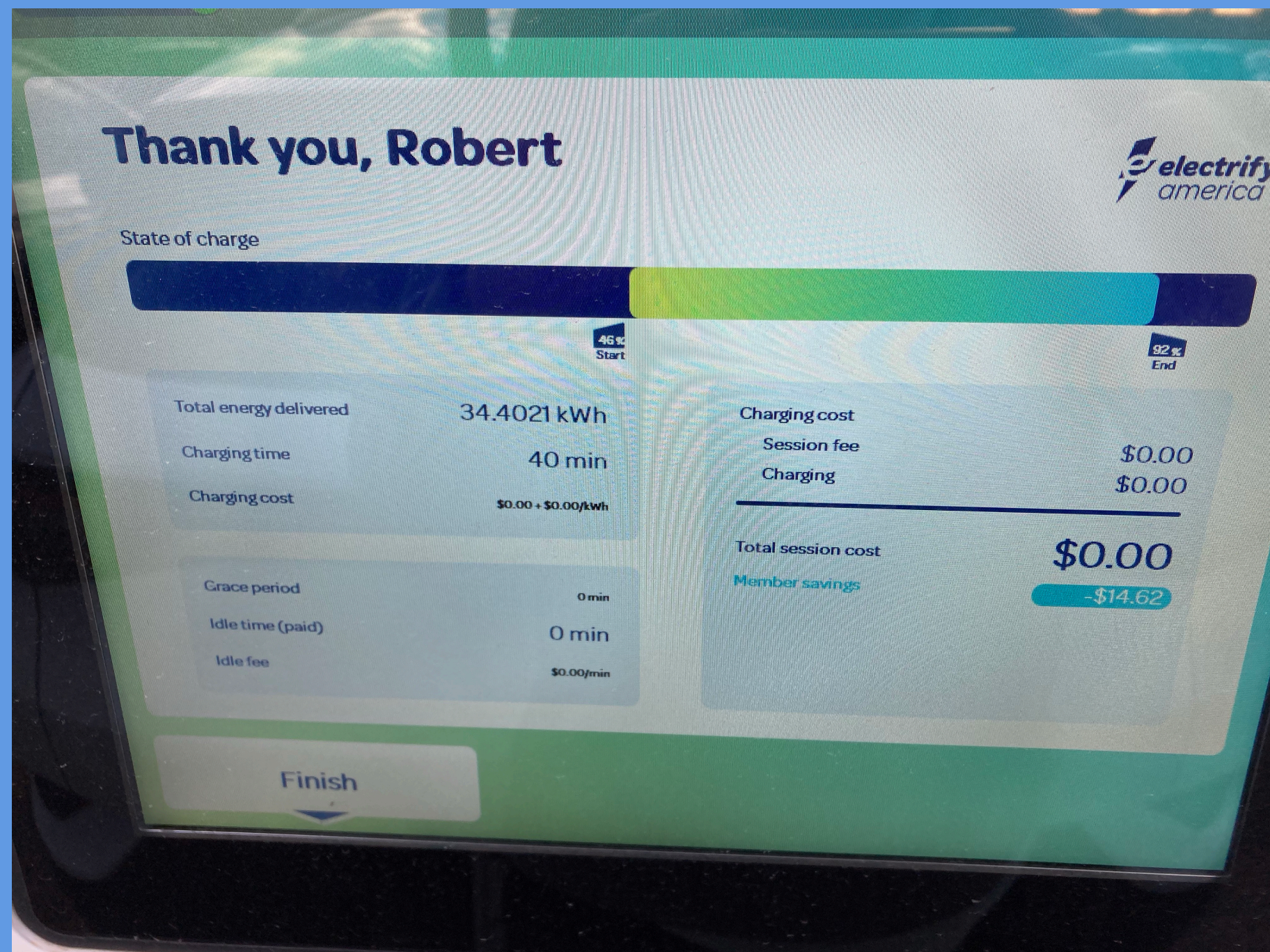


At the end

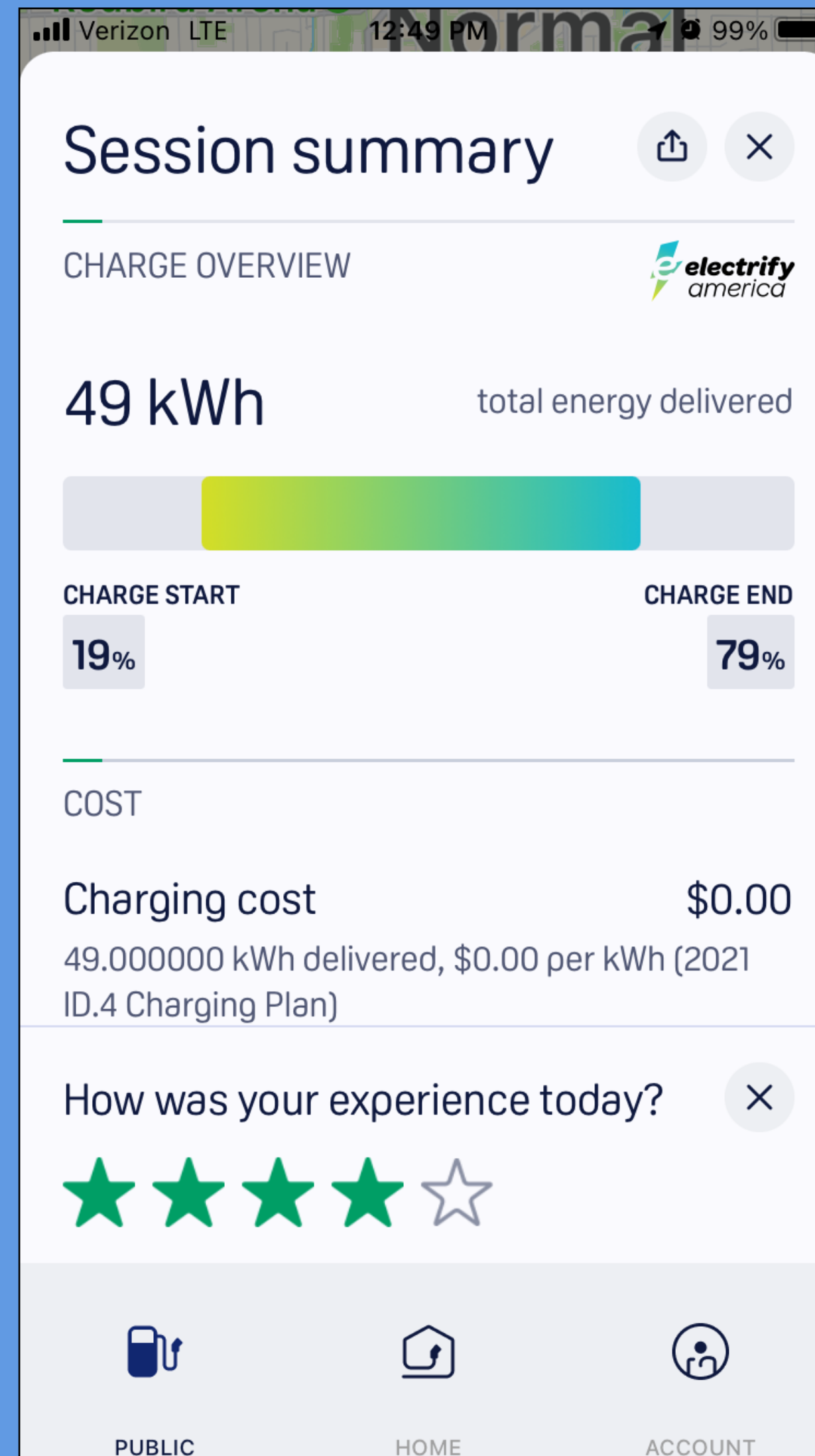
Session 3 : Charging

DCFC - (Level 3)

After you will get a summary and/or receipt on the charger screen, in the app or by email



On screen



In app

Session Start Time	11:40:39 AM
Session End Time	12:11:10 PM
Charging Time	00:29:41
Idle Start Time	00:00:00
Idle Stop Time	00:00:00
Paid Idle Time	00:00:00
Grace Period	00:00 min
End State of Charge	76%
Max. Charging Speed	123 kW
Total Energy Delivered	45.5160 kWh
Energy Billed	45.0000 kWh

by email

Here is that information on a PDF.

If you would like this PDF - It is or will be put it on the OLLI download site.

Charging at Electrify America

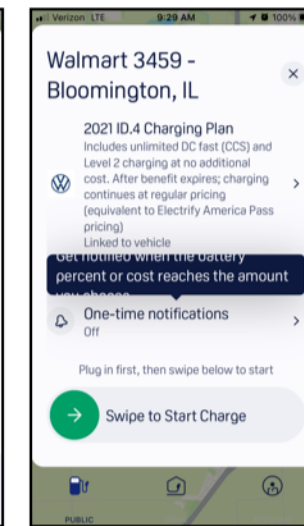
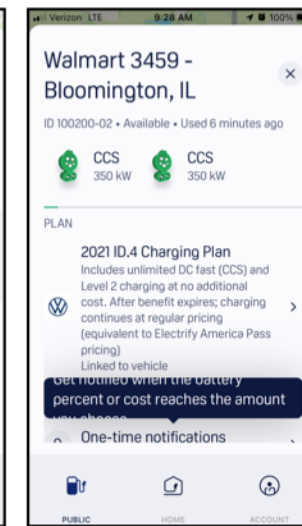
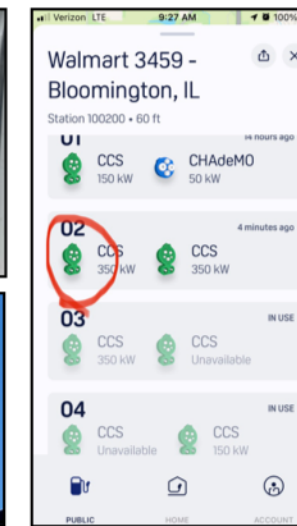
You can charge with credit card but by using the app you will get better rates. As the charger says, Plug-in first, find station on the app look for charger number at top of charger.

EA is the largest public Direct Current Fast Charging network for non Tesla EVs. DCFC makes cross country trips with EVs possible. Log onto the charger with either a RFID credit card or using the EA app. With a credit card login - follow instructions on the screen

Select charger by tapping on the app.

If you have a charging plan it will show up on the EA app.

Go to bottom of that page on app and swipe to start.

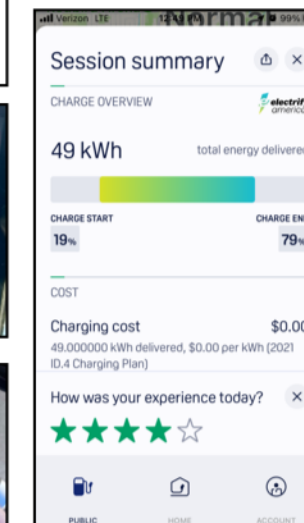
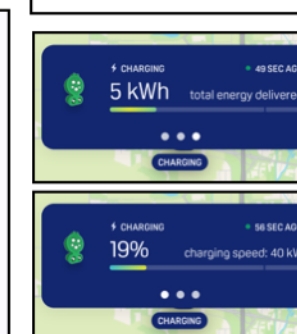
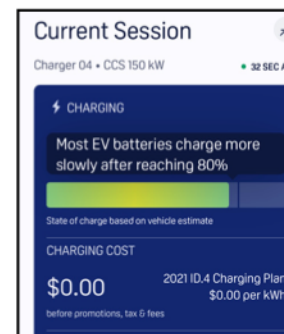


The Current Session screen pops up when charging starts.

Status of the session is updated in the app. To see different screens, swipe left or right.

Stop charging on the charger or the panel in the car. If plug is locked, unlock the car

After you're done you will get a session summary.



Bonus !!!

When planning a trip you can check on the App and find out if any of the locations you want to use are having maintenance done. Sometimes an "unavailable" charger can be started by inserting chip credit card.

2022-06-15

Session 3 : Charging

1,000 Miles!



Interesting road trip video - this driver is a little braver pushing the range limits than I would. Video shows good attitude for convenience charging and dealing with charging glitches that pop up. (32 minute video)

Session 3 : Charging Apps



The screenshot shows the iExit app's home screen for Interstate 57 North. The top navigation bar is green with a back arrow, the text "Home", the Interstate 57 shield, and "North", and a search icon. Below the navigation bar are five tabs: "All Exits", "Fuel Prices", "All Food", "All Lodging", and "Electric". The main content area lists five exits with their respective distances and icons for services:

- EXIT 283** (US-24; Gilman; Chatsworth) - 46.5 mi. Icons: Fuel, Food, Lodging, Exit, Shopping, More.
- EXIT 293** (IL-116; Ashkum; Pontiac) - 56.0 mi. Icons: Fuel, Food, Car.
- EXIT 297** (Clifton) - 59.7 mi. Icons: Food, Lodging, Shopping, Bank.
- EXIT 302** (Chebanse) - 64.6 mi. Icons: Fuel, Food, Shopping.
- EXIT 308** (US 45; US 52) - 70.4 mi. Icons: Fuel, Food, Lodging, Camp, Exit, Shopping, Map.

Past Performance vs Future Results

This screenshot shows a detailed view of Exit 308 on Interstate 57 North in Kankakee, Illinois, which is 70.4 miles away. The "All Food" tab is selected. It displays two restaurant cards:

- Arbys**: Located "Right, 0.1 mi". It has a 5-star Yelp rating (5 reviews).
- Taco Bell**: Located "Left, 0.1 mi". It has a 4-star Yelp rating (19 reviews).

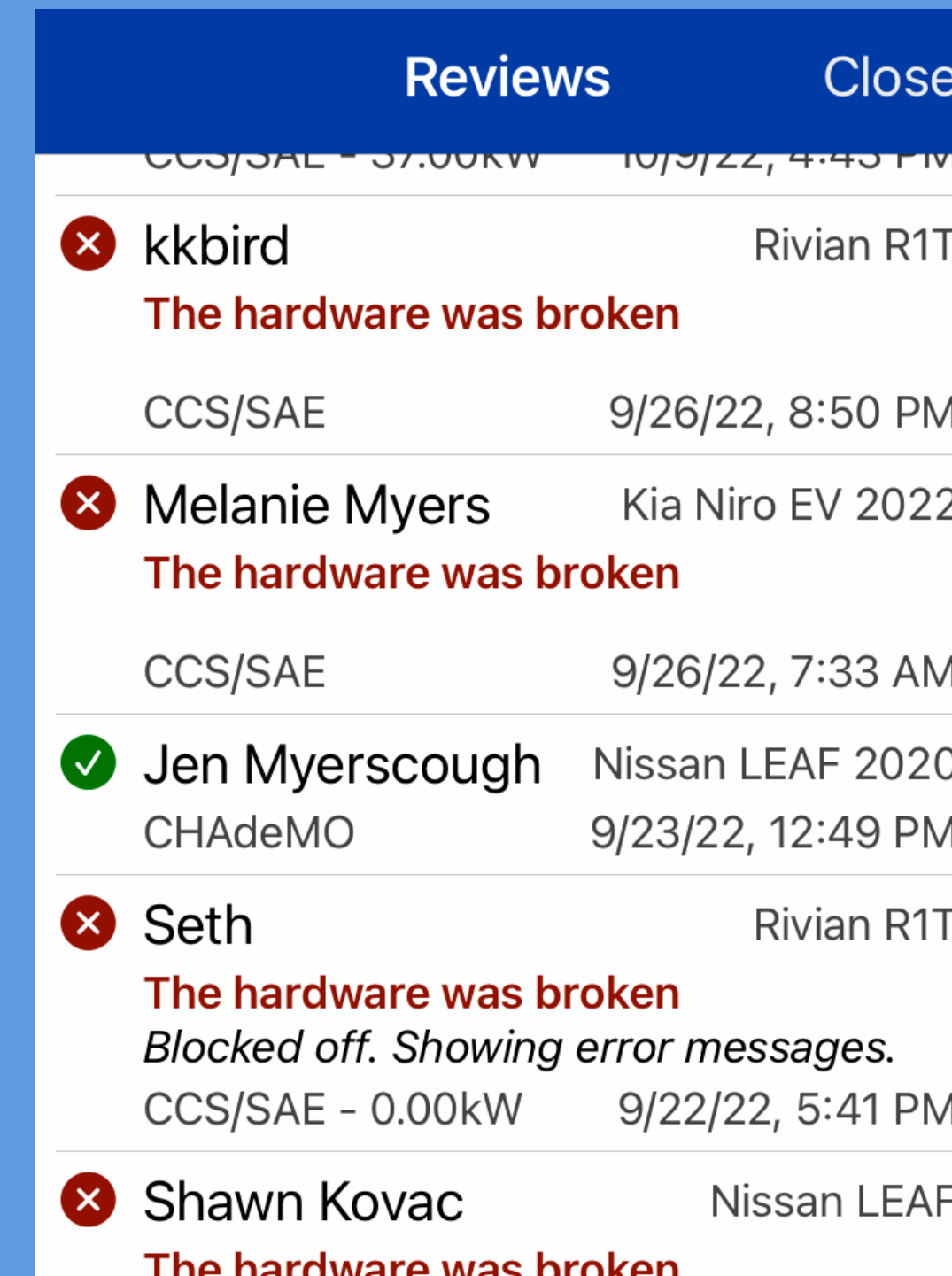
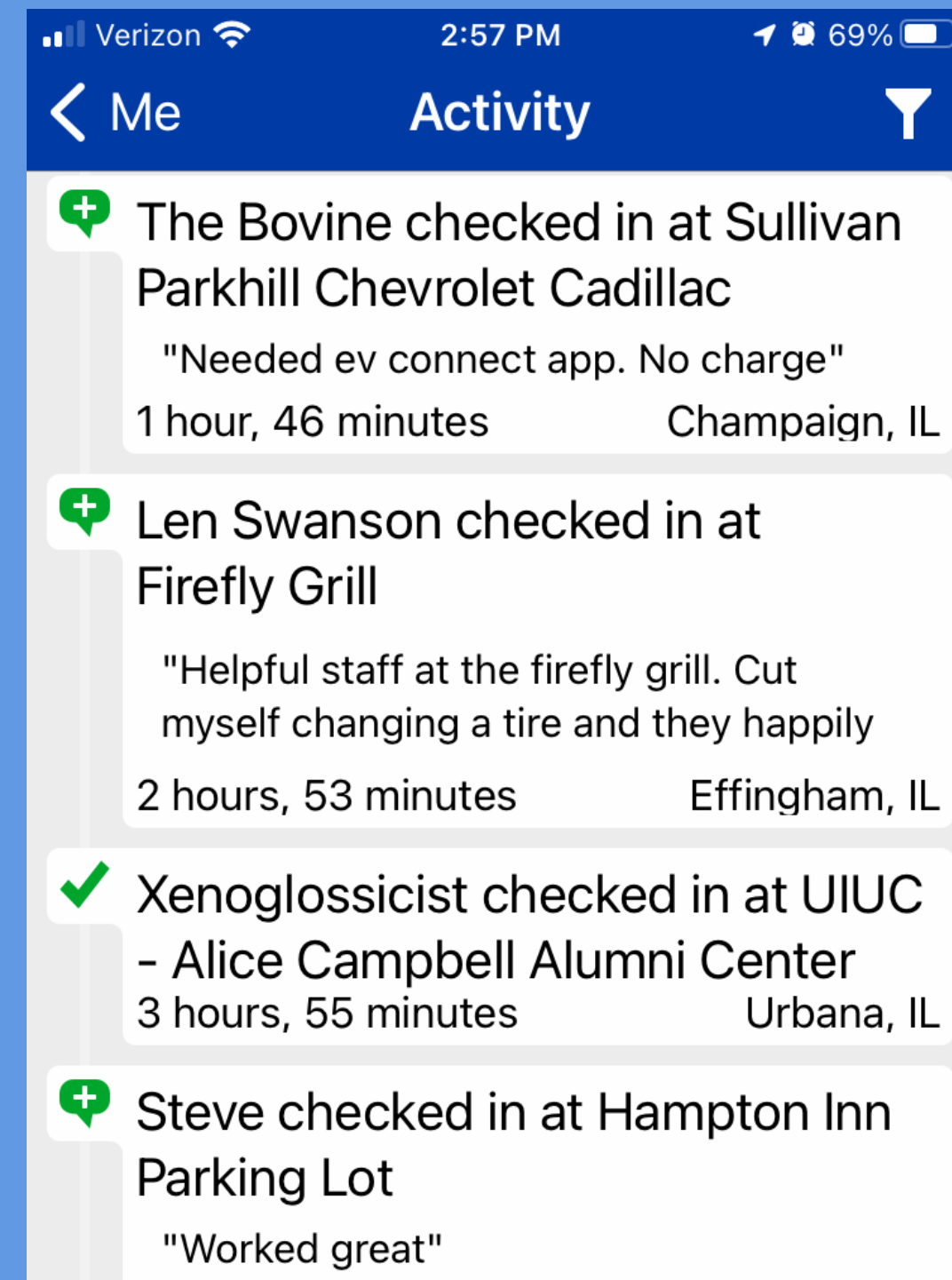
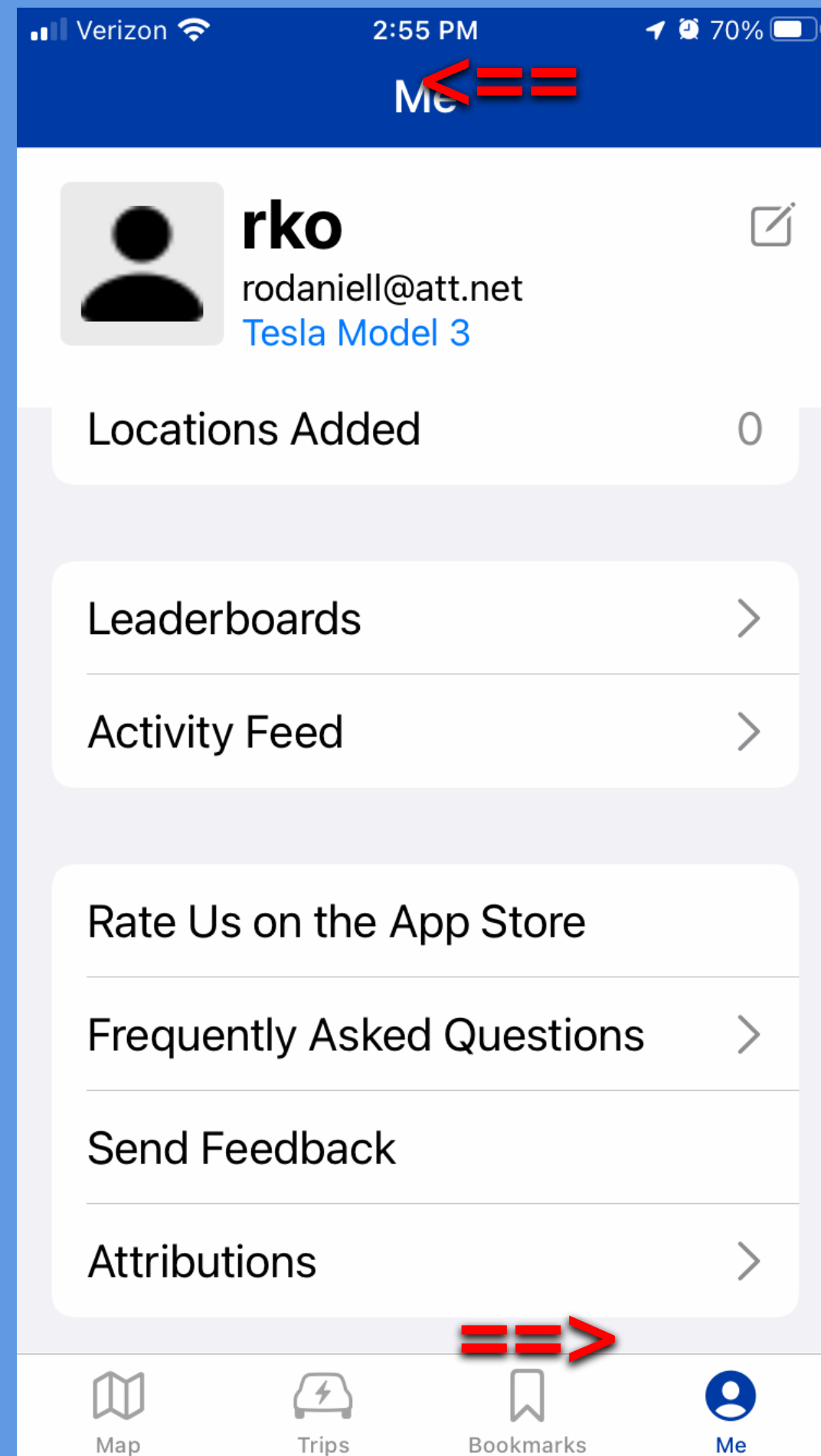
Below this, it shows "5 results found at exit" for Exit 312 (73.4 mi away):

- McDonalds**: Located "Left, 0.3 mi". It has a 4-star Yelp rating (31 reviews).
- Bud's Groceries**: Located "Left, 0.5 mi". It has a 5-star Yelp rating (2 reviews).

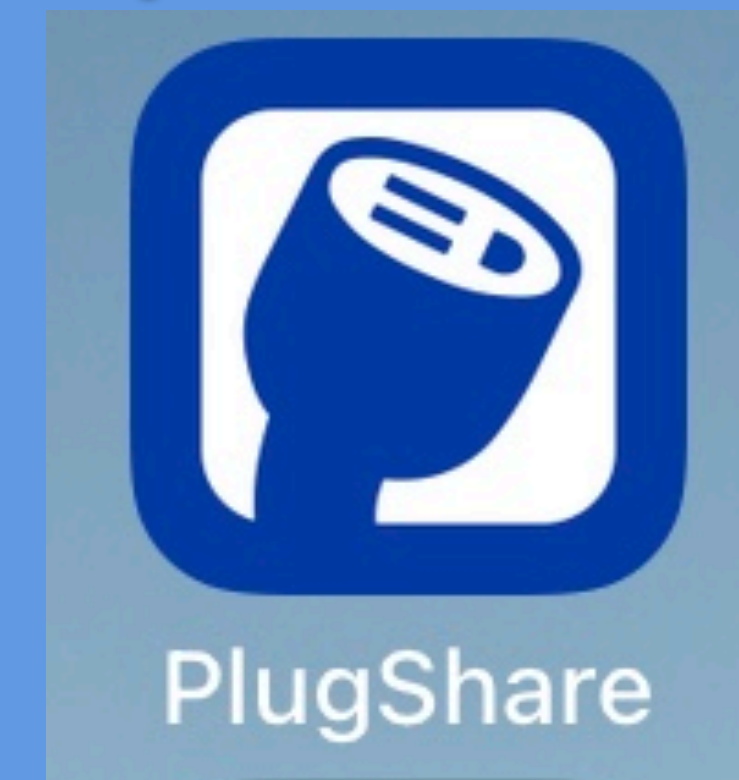
The bottom of the screen shows Exit 315 (Bourbonnais, Illinois) with a "Map" button.

Session 3 : Charging Apps

Plugshare is a crowd source App



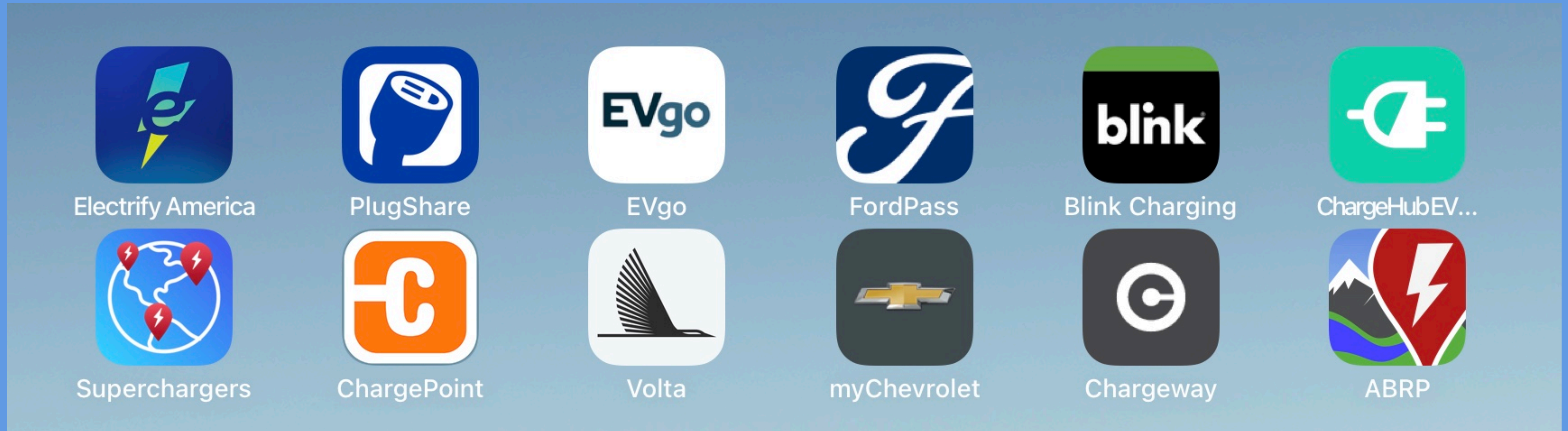
The “reviews” are checkins posted directly to a specific charger location, in this case the Wally’s in Pontiac, still having charger problems.



Plugshare

EV users locate, comment on, describe, add photos and review public chargers. Click on the “me” at the bottom, then “activity feed” (red arrows) and you will get the most recent checkins from an area within 50 miles or so from your current location.

Session 3 : Charging Apps



There are a lot of apps for charging networks - some actually are charging networks - one in particular - is pretty good at finding chargers regardless of network. Some even claim to be a networks but are really just a list of chargers.

Session 3 : Charging Apps



Starting with the ones that I find most useful.

Electrify America

Superchargers

PlugShare

ChargePoint

Session 3 : Charging

Talking Points

Disney World now lets you charge your EV faster than you can get through one roller-coaster ride

Peter Johnson



Disney World is stepping up its efforts to assist the growing population of EV drivers on the road today with new charging solutions that will easily “fill up” your ride quicker than you can get through one roller coaster at the park.

What’s wrong with this picture ?

Well it says it in the headline.

Actually its not a Disney world - its at Disney Springs, tent in the background is Cirque du Soleil

Session 3 : Charging

Talking Points

TRANSPORTATION • EDITORS' PICK

The Future Of EV Charging May Be At 50KW, Not The 'Gasoline Thinking' of 250KW

Brad Templeton Senior Contributor

I cover robocar technology & previously worked on Google's car team.

Follow

Jul 9, 2020, 08:00am EDT



Listen to article 13 minutes



This article is more than 2 years old.

This is SOOOO wrong

There is no way the person writing
this ever charged an EV on a trip.

Placebo on Wheels: AAA Charging Trucks Seek to Remedy EV Range Anxiety, Prove Mostly Unneeded

Published: Aug 15, 2016



EV Out Of Juice? AAA's Mobile Charger Will Come To The Rescue

AAA's solution for dead electric vehicles? A Ford F-350 with a generator

by Michael Gauthier

April 6, 2023 at 18:02



AAA first had a mobile recess charger in 2016 - which I believe failed.
They are starting the service up again.

Session 3 : Charging

SparkCharge's Currently Enables Affordable Mobile Fast Charging For The Masses

By Kyle Field • 3 mins ago



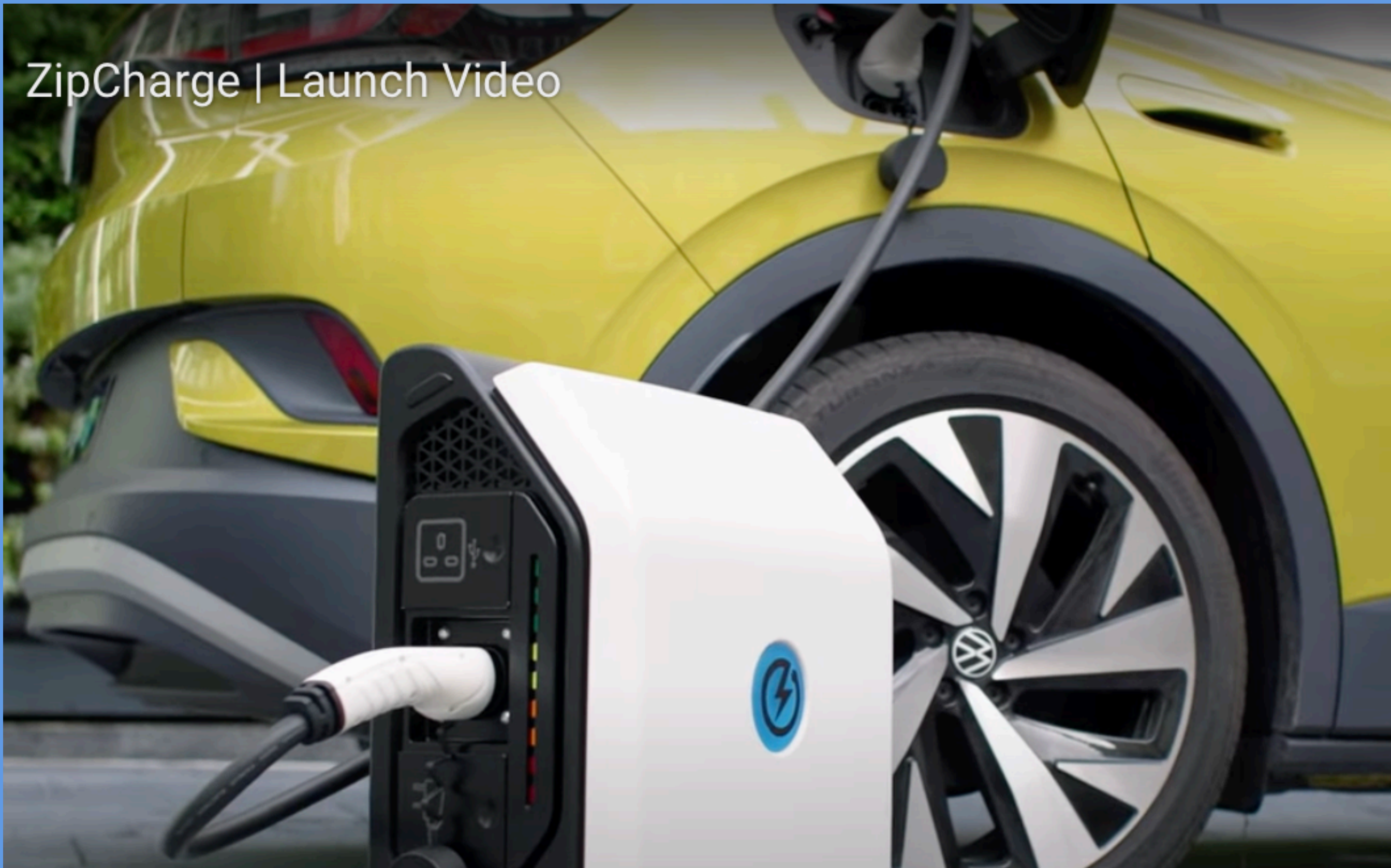
Talking Points

May have started as a rescue service and changed to subscription where there are few chargers.

Article says affordable, but seems expensive to me. Mostly a subscription service. I'm not aware of any highway service.

SparkCharge monthly fee about \$25 plus \$6 per delivery. Up to 50 miles max. Maybe nice for apartments and work locations.

Session 3 : Charging



Talking Points

**ZipCharge GO -
Gives you 25 miles.
\$2000 or \$70 a month
50 pounds**

**How much would you
pay ?**



Inductive (commonly Wireless) charger is apparently cost effective for buses, keeping them on the route longer.

Also some possibilities at taxi stands.

Session 3 : Charging



Talking Points

Inductive
(commonly called
Wireless) charging
for cars would
probably not get
approval on UI
campus due to trip
hazard.



Inductive (commonly Wireless) charging for cars at home. Costly installation. I was surprised that energy loss is about the same as plugin charging.



Inductive (commonly Wireless) charging for highways. A nice idea but maintaining roads is already costly and time consuming without this.

Session 3 : Charging

The end for now.

Session 3 : Charging

The end for now.

Session 3 : Charging

The end for now.