Road Tripping in an EV

United States & Canada
Who’s gone on a road trip ...in an EV?
My 2019 trip

- About 11,862 miles
- Over 2.8 MWh of electricity
  - Amount used in New York City in 22 seconds (2012)

33 Days
33 Friends
35 States/Provinces
73 Supercharges
Planning
Planning

Determine destination and/or route

- Where are you going?
- What is your route to get there?
- Anywhere interesting your route could take you?
Planning

Driving time and stopping points

● How far can you drive per day?
● What kind of locations will you spend the night?
Planning

Tools

- A Better Route Planner
- RV Parky
- PlugShare
- A spreadsheet for tracking waypoints and stops
Planning > Tools

A Better Route Planner

- Customizable
- Timetables
- Distances
- Saved Plans
- Long Distance
- Has App

https://abetterrouteplanner.com/
Planning > Tools

RV Parky

- Filter by amenities
- Filter by outlets
- Filter by site type
- Has App

http://rvparky.com/
Planning > Tools

PlugShare

- Filter by charge types
- Filter by networks
- Long Distance
- Local charging
- Has App

https://www.plugshare.com/
Planning > Tools

A Spreadsheet

- Track next stops
- Plan driving legs
- Checklists
- Log data
- Have apps

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<th>Travel Time (hr)</th>
<th>Notes</th>
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Charging on the road
Charging on the road

Charging Standards

● DC Fast Charging
  ○ Tesla Supercharger
  ○ CHAdeMO
  ○ CCS 1

● AC Level 2 Charging (slow)
  ○ J1772
  ○ Tesla
Charging on the road

Charging Logistics

- DC Fast charging is usually measured in minutes
- AC Level 2 charging is measured in hours
- Locate via app or car navigation
- A Better Route Planner great companion
- Charge enough to get to next charger
- Time for bathroom and meal breaks (every 2-3 hours)
Charging on the road

Charging Costs

● Charging networks have different rates
● A Better Route Planner gives you that cost
● Calculate approximate charging costs with car’s Wh/mile or miles/kWh efficiency
  ○ \( \frac{(\text{Wh/mile})}{1000} \times \text{miles} \times (\$/\text{kWh}) \)
  ○ \( \text{miles} \div (\text{miles/kWh}) \times (\$/\text{kWh}) \)
● Charges by minute are harder to calculate
Charging at destinations
Charging at destinations

Charging Options

- Public charging stations
- Campgrounds
- Private homes
Planning > Charging at destinations

Charging equipment

- Portable EVSE
- Adapters for EVSE
- Outdoor extension cord
- J1772 adapter (for Teslas)
- When using plug adapters be sure your car does not charge more than 80% of outlet rating.
Planning > Charging at destinations

Public charging stations

- Use PlugShare to find
- Have app that works with the network
- Some locations offer free charging
Planning > Charging at destinations

Campground charging

- Use RV Parky to find
- Some campgrounds require reservations
- Require portable EVSE
- 50 amp: Nema 14-50 @ 240v up to 40 amps
- 30 amp: NEMA TT-30 @ 120v up to 24 amps (adapter must be EV compatible)

Fun fact: TT in “TT-30” stands for Travel Trailer
Charging at friends’ homes

- Exterior extension cord is handy
- Handy EVSE adapters:
  - NEMA 5-15
  - NEMA 5-20
  - NEMA 10-30
  - NEMA 14-30

Fun fact: The last number in NEMA outlets is the amperage rating!
Takeaways
**Takeaways**

- Great way to see the country.
- Driving what amounts to an average of nearly 400 miles a day leaves little time for being.
- I didn’t use all of my adapters.
- Buying food at every charging stop does add up.
- I want to do it again.
Questions?
Cecelia Sullivan
Follow me on future trips.

Have a nice trip!