Electric Car Experiences - First 60 Days
Oct 5, 2024

Disclaimer

Observations based on my personal experience & research on about 2000 miles over 60 days

Subject to change based upon further experiences and environment growth

Costs based upon FPL normal residential rates, other plans may offer savings depending on your actual usage patterns, i.e. Time of Usage (TOU)

Objective

- What it's like to own a electric vehicle
- Options for car ownership today
  - Internal combustion engine (ICE)
  - Hybrids – gas & electric
  - Full electric (EV)
- Pros/Cons
- Misconceptions & experiences

What it's like to own a electric vehicle

Become familiar with types of charging

- Level 1 - 110v AC – 3 miles/hr – 1.2 to 2.4 KW
- Level 2 – 220v AC – 30 miles/hr – 3.6 to 9KW
- Level 3 – 400 to 800v DC (Fast Charging) - 50 to 500KW - 100 to 250 miles/.5hr

What it’s like to own a electric vehicle

Level 1 - 110v AC

What it's like to own a electric vehicle

Level 2 – 220v AC

What it's like to own a electric vehicle

Level 3 – 400 to 800v DC (Fast Charging)

What it's like to own a electric vehicle

Types of charging plugs

- CHAdeMO – Nissan Leaf phased out
- Combined Charging System CCS/J1772 - all except Tesla
- North American Charging System NACS - all Tesla – almost all switching to NACS in 2025

What it's like to own a electric vehicle

Combined Charging System CCS/J1772 socket

Level 2 &

Level 3

Options for car ownership today

Internal combustion engine (ICE)

- What we grew up with
- Gas powered only
- Air & oil cooled

Options for car ownership today

Hybrids (HEV) – gas & electric

- Toyota Prius, Chevrolet Volt
- Gas and electric power generated
- Regenerative braking charging
- External charging capability only with plug in HEV (PHEV) versions
- Air & oil cooled

Options for car ownership today

Full electric vehicle (EV)

- Tesla, KIA EV6/EV9, Ford Mustang Mach-E, etc.
- Full electric only
- No air or oil cooling
- Charging plug options require software updates & plug adapter

Pros & Cons

Pros ICE

- Easy fueling access
- Long driving range
- Lower initial cost

Cons ICE

- Higher maintenance
- High level of direct polluting
- Average 16 MPG – MY 2016

Pros & Cons

Pros HEV

- Easy fueling access
- Long driving range
- Up to 50 MPG
- PHEV less than 40 miles all electric

Cons HEV

- Higher maintenance
- Less direct polluting
- Higher cost depending on rebates

Pros & Cons

Pros EV

- Up to 130+ MPGe – 33.7 MPG x miles/KWH
- No direct pollution

Cons EV

- Range anxiety – long drives require planning for charge stops
- Battery technology evolving quickly
- Higher cost depending on rebates

Misconceptions & Experiences

- Level 1 charger (about $60 on Amazon) was sufficient for my 1st month of use when averaging about <40 miles/day
- Level 2 charger was $400 to install – dealer provided charger as part of lease
- Level 3 charging gives over 200 miles in <20 minutes

Misconceptions & Experiences

- FPL charges $0.13/kwh normal residential rate
- September Level 2 charging totaled $36 for 1125 miles using 281 kwh = $0.032/mile
- Level 3 charging gives over 200 miles in <20 minutes – lease included 1000 kwh at public charging stations (Sams Club Cocoa $.56/kwh)

Misconceptions & Experiences

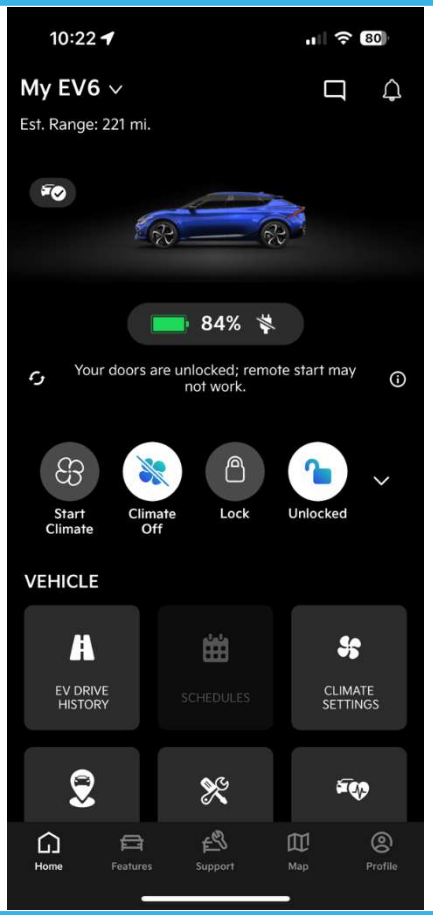
- Realtime status of charging locations & availability on smartphone apps & car navigation
- Tons of data in KIA app and public charging apps
- High speeds >60mph consume power quicker
- Super performance – instant torque even with single motor RWD

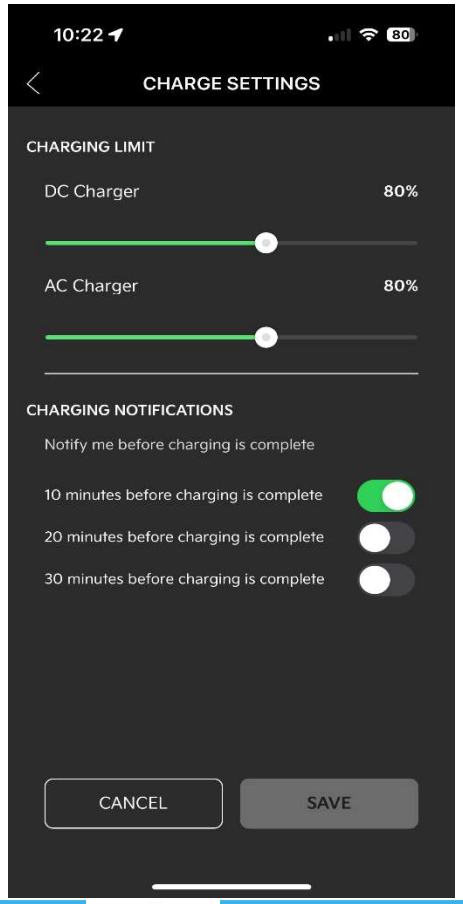
Misconceptions & Experiences

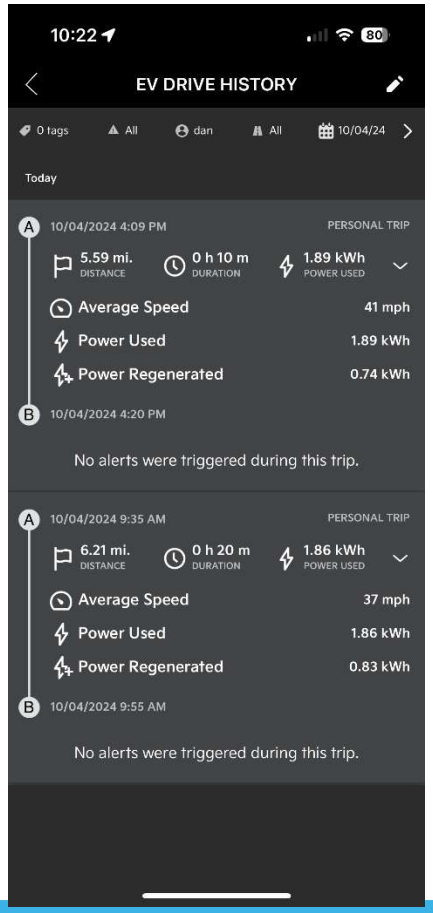
Charging recommendations

- Keep battery level between 10 – 80% normally
- Charge to 100% once a month
- Use DC Fast charging to 100% occasional for max battery conditioning

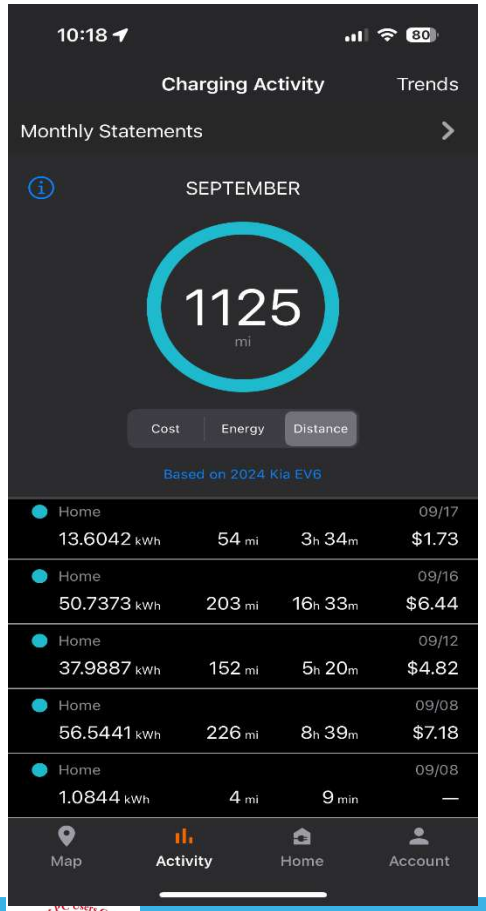
KIA App

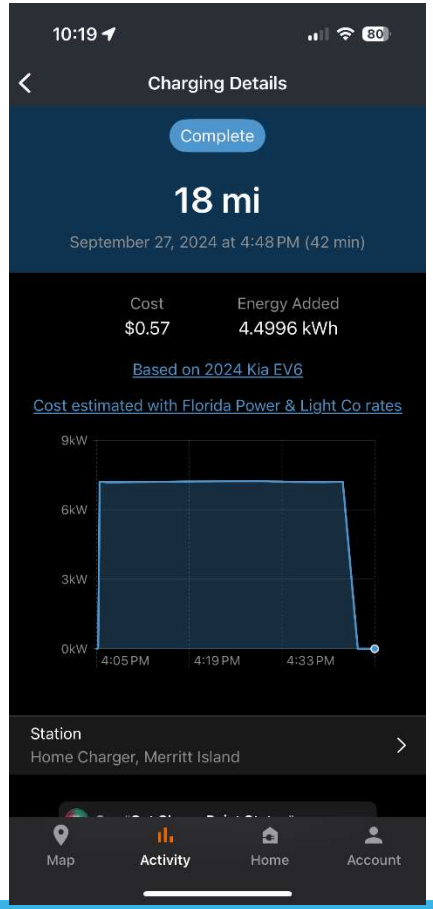

10:22
My EV6
Est. Range: 221 mi.
84%
Your doors are unlocked; remote start may not work.
Start Climate
Climate Off
Lock
Unlocked
VEHICLE
EV DRIVE HISTORY
SCHEDULES
CLIMATE SETTINGS
Home
Features
Support
Map
Profile


10:22
CHARGE SETTINGS
CHARGING LIMIT
DC Charger
80%
AC Charger
80%
CHARGING NOTIFICATIONS
Notify me before charging is complete
10 minutes before charging is complete
20 minutes before charging is complete
30 minutes before charging is complete
CANCEL
SAVE


10:22
EV DRIVE HISTORY
0 tags
All
dan
All
10/04/24
Today
10/04/2024 4:09 PM
PERSONAL TRIP
5.59 mi. DISTANCE
0 h 10 m DURATION
1.89 kWh POWER USED
Average Speed 41 mph
Power Used 1.89 kWh
Power Regenerated 0.74 kWh
10/04/2024 4:20 PM
No alerts were triggered during this trip.
10/04/2024 9:35 AM
PERSONAL TRIP
6.21 mi. DISTANCE
0 h 20 m DURATION
1.86 kWh POWER USED
Average Speed 37 mph
Power Used 1.86 kWh
Power Regenerated 0.83 kWh
10/04/2024 9:55 AM
No alerts were triggered during this trip.

Chargepoint App – Level 2 Home Charger





What's Next

600+ mile trip to NC in October

New upgraded charges being installed at Sams Club Cocoa by Electrify America

Switch cars for long trips for work to gain IRS mileage $$