

GUNNISON COUNTY ELECTRIC ASSOCIATION

Powering Possibilities

SEPTEMBER 2020



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ELECTRIC VEHICLE OWNERSHIP WHAT'S NOT TO LOVE?

ALLIY SAHAGUN MEMBER RELATIONS SUPERVISOR



ALLIY SAHAGUN

Several years ago, my parents came to visit while I was living in Utah. We lived in a hilly community in the southeastern corner of the Salt Lake valley, which required long hauls up and down the mountain each time we traveled into town. At the time, my parents owned a Toyota Prius, and my dad enjoyed driving me around, showing me the regenerative braking feature on his hybrid vehicle: “See, Alliy, we are gaining mileage as we go down the hill – isn’t that great?” I appreciated his giddy enthusiasm, but truthfully, I didn’t quite get it and continued happily driving my Honda Pilot.

Fast-forward five years to 2018, when I was fortunate enough to land a job at Gunnison County Electric Association under the guidance of CEO Mike McBride, who taught me from day one all about the exciting world of electric vehicles. I learned what a J1772 plug was and how long it took to “trickle charge” an EV at home. I frequently drove the Chevy Bolt for work-related business, and I appreciated the quiet, smooth ride around town. Then in the summer of 2019, GCEA bought a Tesla Model 3 and my life as an EV enthusiast gained momentum. The first time I allowed myself to “step on it” brought “Tesla smiles” that would last for days. The instant torque is crazy fun.

As it turns out, I am not the only EV lover

out there. Millions of car owners worldwide have made the shift from internal combustion engines to battery-powered vehicles. Global EV sales totaled about 1.1 million for the first half of 2019, an increase of 46% compared to the total sold in the first half of 2018, according to the Edison Electric Institute. Bringing it closer to home, Colorado ranks fourth in United States in electric vehicle sales, behind California, Washington and Oregon. Colorado DMV registration shows there are 37 electric vehicles registered in Gunnison and Hinsdale counties. Twenty-three are all-electric (BEV) and 14 are plug-in hybrid (PHEV).

EVs are the minority in these parts, but the owners of these vehicles are not shy in sharing their enthusiasm for driving all-electric. I reached out to our GCEA members who own electric vehicles to share their experience of owning an EV, and the comments poured in. These people are passionate. On page 8 are questions I frequently get regarding EVs, followed by the feedback from our GCEA members who have chosen to “go EV.”



 GCEA's Chevy Bolt can be loaned out for a week at a time to members as part of their EV test drive program.

Answers to EV Questions

We live in a mountain community. How do EVs handle the cold weather and mountain roads?

“These are fantastic cold weather cars. I drove mine one night when it was minus 22 F all the way to Breckenridge. No problem. Even better, you can preheat the car using the phone app. We have no garage, so when I am getting ready to leave in the winter, I turn the heat on in the car from inside my house 15 minutes before I leave, using my iPhone. I don’t have to start the ‘engine’ to turn the heat on. When I get in, the ice has melted off the windshield and the cabin air and seat are warm, even when it’s below zero and my diesel truck is an ice block that won’t start.”
— Alan Peterson, current Tesla Model 3 and former Model S owner

“In both my Chevy Volt and my Model 3, I realize how much I love not having a transmission, especially on Colorado mountain roads. It’s pleasant to drive up a Colorado mountain pass, like Cottonwood or Monarch, with all the torque of electric motors and none of the lurching, jarring downshifting of internal combustion engines. Another place I notice this is when passing vehicles, instant torque, and no downshifting.”
— Andy Woster, Tesla Model 3 owner

OK, but what about driving in the snow? I would need my all-wheel drive or four-wheel drive for that, right?

“They are fantastic in the snow with snow tires. Most are all-wheel drive, but my first was unstoppable as a rear-wheel drive. This is because the car is heavy with a 1,000-pound battery, and it has computer-controlled traction control that pulls to the point of slippage, then backs off 100 times per second. So, it always uses available traction. I pulled a Tacoma out of a ditch

in 18 inches of unplowed snow with my Model 3 this winter. (It is the same weight as a Tacoma and has double the horsepower.)”
— Alan Peterson, current Tesla Model 3 and former Model S owner

Waiting for a charge on an EV seems like such a hassle. Is it convenient, and what are the cost savings compared to gasoline?

“Our ‘vehicular lifestyle’ has easily changed from watching a fuel gauge and refueling, to simply plugging the vehicle in when we’re at home.”
— Benjamin Diem, Tesla Model Y owner

“The car has changed our perspective entirely, and there is no going back to gasoline or diesel for us. We have not been to a gas station in three years. I estimate the average price of gas to be right at \$4 per gallon, and in a car of this size and weight, we would have gotten 18 miles per gallon in a gas car if we were lucky. It now has 35,000 miles on it, so that would mean the purchase of about 1,950 gallons of fuel. That translates into \$7,800 of fuel savings alone! Tesla covers the cost of power when we’re on the road and, with their high-speed charger network, we never have to worry about being stranded or losing time. By the time it takes to get a cup of coffee or a quick bite, the car is already charged and ready to go.”

— Jim Hopkins, Tesla Model X 100D owner

I am interested in EVs because of their environmental benefits, but how can I make my EV charging 100% carbon-free?

“Solar. Thanks to GCEA’s net metering program, my car is powered by my solar panels (when I charge during the day), which uses about one-third of my power from my average-sized solar array.”

— Alan Peterson, current Tesla Model 3 and former Model S owner



EV CHARGE AT HOME PROGRAM

We recognize that electric vehicles present an exciting opportunity for members to reduce carbon emissions while saving money. We are seeing more EVs on the road every day, which adds electricity demand to the GCEA grid. This additional load to our system may present challenges, however, if not properly managed.

To better understand EV charging behavior, GCEA has developed a program to help EV owners receive a complimentary Level 2 ChargePoint Home Flex charging station in exchange for access to their charging data. The Charge at Home program aims to further the adoption of EVs while educating members on how to develop smart charging habits.

The Product

- A Level 2, 240-volt, 16- to 50-amp flexible amperage home EV charger with a 23-foot charging cable. (Retail value, \$699.)

The App

- As part of the program, you will be required to download the ChargePoint app on your mobile device and request a connection with GCEA to provide access to your charging data.

Installation

- If you have an available 240V connection, the station is essentially “plug and play.” Just plug it in, download the app and complete the setup by connecting to GCEA. If you need to install a 240V outlet, you may also apply for an EVSE (electric vehicle service equipment) installation cost rebate, up to \$250. Visit www.gcea.coop/ev-rebates to apply.

If you are an EV owner interested in participating in our pilot Charge at Home program, please call us at 970-641-3520.

INFORMATION ON ELECTRIC VEHICLE CHARGING

BY ALANTHA GARRISON ENERGY USE ADVISOR

HOW LONG WILL IT TAKE TO CHARGE MY ELECTRIC VEHICLE?

This depends on your EV and its charge rate, the type of station you're charging at, the EV station's charge rate and how much power is left in your battery. Below are approximate average charging times at each type of station:

EV CHARGING

A GUIDE TO CHARGING YOUR ELECTRIC VEHICLE



LEVEL 1

120 VOLT - 9-24 HOURS CHARGE TIME

- Typically delivers two to five miles of range per hour of charging used in home applications, but is sometimes used at workplaces
- A full charge may take up to 24 hours with Level 1 120 V charging
- Charging your EV for 8 hours would cost \$1.44



LEVEL 2

240 VOLT - 4-6 HOURS CHARGE TIME

- Typically delivers 10 to 20 miles of range per hour of charging
- Used in homes, workplaces and for some public charging
- Level 2 charging systems provide slight energy efficiency benefits over Level 1 chargers - savings estimates vary based on length of charge time
- Charging your EV for 8 hours would cost \$6.80 to \$7.44



DC FAST-CHARGER

480 VOLT - 30 MINUTES CHARGE TIME

- Can deliver an 80 percent battery charge or 60 to 100 miles of range for most EV models in about 20-30 minutes of charging
- This format is used in public charging stations, especially along heavy-traffic corridors
- One hour of charging would cost \$27.50



QUESTIONS?

GCEA is happy to help anyone with questions about their charging needs. Call 970-641-3520 or visit www.gcea.coop/Electric-Vehicle for more details.

HOW MUCH WILL IT COST TO CHARGE MY EV?

This depends on a few different things, including your EV's charge rate, the station's charge rate and the fee charged at the station.

Level 1 charging is typically done with a cord that plugs into a standard outlet. At home the member pays for the electricity along with his or her usual electric usage. At just 1.4 kilowatts, this charger would use 1.4 kilowatt-hour in one hour, costing 18 cents at GCEA's current residential rate of \$0.12918 per kWh. Charging your EV for 8 hours would cost \$1.44 and give you about 40 miles of range in mild weather (40-85 degrees).

Level 2 stations can be found in homes and are also available in many public places. At home, the member would pay for his or her electrical usage just like with the Level 1 charger, but the EV's battery

would be recharged faster. Most Level 2 stations use 6.6 to 7.2 kW, so in one hour, a Level 2 charger would use 6.6 to 7.2 kWh, costing 85 to 93 cents at GCEA's current residential rate; charging your EV for 8 hours would cost \$6.80 to \$7.44 and give you more than 200 miles of range in mild weather. At GCEA's Level 2 stations, the charge is 25 cents per kWh for energy used during on-peak hours (Monday through Saturday, 5 to 10 p.m.) and 8 cents per kWh for energy used during off-peak hours (all other times). In one hour during off-peak hours, a charging session of 6.6 to 7.2 kWh would cost 53 to 58 cents; during on-peak hours, 6.6 to 7.2 kWh would cost \$1.65 to \$1.80.

DC fast charging stations are usually only found commercially due to their high power requirements — from 50 to 350 kW, and higher power stations up to 1 megawatt (1,000 kW) are being developed. DCFCs are designed to be used infrequently, as regular use of a DCFC can reduce the overall health of the battery and shorten its useful life. GCEA has installed 62.5 kW DCFCs in its service territory. GCEA currently charges 20 cents per kWh plus 25 cents per minute to use this charger, so one hour of charging (at 62.5 kW) would cost \$27.50 and give the driver about 250 miles of range in mild weather.

WHY WOULD THE COST TO CHARGE AT EACH STATION BE SO DIFFERENT?

A Level 1 charge cord typically comes with an EV and provides a low level of energy. It's inexpensive to use and the equipment cost is fairly low, but it takes an extremely long time to fully charge an EV from empty. You can think of a Level 1 station as a trickle charger, with a small amount of energy being used over a long period. A Level 2 station requires higher power to provide a charge in less time than a Level 1 charger — up to six times faster. The equipment and associated parts are more expensive than a Level 1 charger. Finally, DCFCs charge at a much, much higher power than Level 1 and Level 2 stations — up to 250 times higher than a Level 1 charger and 50 times higher than a Level 2 charger. The cost to install a DCFC station is much more expensive than what is required to install Level 1 and Level 2 stations and requires more labor. Additionally, a 50 to 350 kW load has the potential to become extremely expensive if usage occurs during GCEA's peak hours and coincides with the system-wide peak demand. But you can be back on the road in a short time with a decent chunk of your battery recharged, which is valuable when your time is limited.



ELECTRIC VEHICLE CHARGER REBATE

GCEA can help electric vehicle owners shift their charging to off-peak with this incentive on EV chargers:

- 70%, up to \$500, of the cost of a Level 2 home charger
- You MUST sign up for the time-of-use rate to qualify for the rebate

Drive for 82 cents per gallon equivalent when charging off-peak on the time-of-use rate!

Shifting electricity consumption off-peak can benefit you and your neighbors! For questions regarding the rebate, please call 970-641-3520.

SEPTEMBER WORK ANNIVERSARIES

Ron Copenhaver
Engineering Technician, 20 years

Brian Muth
Engineering Technician, 14 years

Alliy Sahagun
Member Relations Supervisor, 2 years

CO-OP CALENDAR

Thursday, October 8 at 6:30 p.m.
Virtual Member Forum — more information to follow

ELECTRIFY YOUR DRIVE



GCEA now owns and operates 11 public charging stations in Gunnison and Hinsdale counties. Grants from the Charge Ahead Colorado program helped fund most of these projects, along with generous contributions from the Towns of Crested Butte and Lake City as well as Hinsdale County, Lake City DIRT and the Lake City Chamber of Commerce. Some, but not all, of the stations currently offer free charging. By January 1, 2021, all but one of the stations will charge reasonable fees for 240-volt Level 2 and 480-volt Level 3 or DC fast charging.

- **Almont**
Almont Resort back parking lot – Level 2
- **Lake City**
Ice Wall – DC fast charger
3rd Street – Level 2
- **Crested Butte**
Fire Hall – DC fast charger
Elk & 6th parking lot – Level 2
Elk & 1st parking lot – Level 2
Town Hall – Level 2
- **Pitkin**
Silver Plume General Store – Level 2
- **Gunnison**
Headquarters – Level 2
City Office – Level 2 (owned by the city of Gunnison)
- **Sargents**
Tomichi Creek Trading Post – Level 2

EV TRUCKS AND SUVs COMING SOON TO A GARAGE NEAR YOU



Pickup trucks and SUVs are a dime a dozen these days. Everyone seems to have one or is looking to purchase one considering how practical they are to haul around gear, sporting equipment, tools and play toys. In the coming months and years, options for trucks and SUVs will be expanded to include electric versions of popular models like the Ford F-150 and GMC's new Hummer EV. And there is a new space emerging in the U.S. auto industry for startups like Tesla, Rivian, Lordstown, Nikola, Atlys and Bollinger. Here's a lineup of new EV pickup trucks and SUVs hitting the market soon.

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Make/Model	Delivery Date	Starting Price	Expected Range
Tesla Cybertruck	Late 2021	\$39,900	250-500 miles
GMC Hummer EV	Fall 2022	\$70,000	400 miles
Ford F-150	2022	unknown	300 miles
Rivian R1T	June 2021	\$69,000	230-400 miles
Rivian R1S	August 2021	\$72,500	230-400 miles
Lordstown Endurance	Early 2021	\$52,500	250 miles
Bollinger B1 and B2	Mid 2021	\$125,000	200 miles
Nikola Badger	2022	\$60,000	300 miles
Atlys XT	2021	\$45,000	500 miles
Fisker Ocean	2022	\$37,499	250-300 miles