

Navigating Common Electric Vehicle and Charging Infrastructure Concerns

Increasing knowledge about electric vehicles (EVs) can increase Tribal members' comfort levels with the technology, leading to increased EV adoption. This fact sheet lists common EV and charging infrastructure concerns and provides information to help address these hurdles during engagement with Tribal communities.

Concern #1: EVs do not have enough range to meet my travel needs.

Fact: On average, people travel 41 miles per day (Replica 2024). The majority of EVs can travel farther than 200 miles on a fully charged battery, and many EVs get up to 300–400 or more miles of range (U.S. Environmental Protection Agency 2025).

Find out more about estimated range for different EVs on the Find a Car Tool: www.fueleconomy.gov/feg/findacar.shtml.

Concern #2: EVs will not work in regions with very cold weather.

Fact: Cold temperatures impact the range of EVs, but there are steps to reduce the impact, including:

- Pre-condition (warm up) the battery and interior of the vehicle while still connected to the charger (rather than using the battery).
- Lower the interior temperature and use a heated steering wheel and heated seats for warmth.
- Park in a warm garage when possible.
- Check tire pressure before driving (low tire pressure can reduce range).

The Electric Nation program (www.electriconation.info) has deployed EV charging stations and EVs across Tribal communities in the Midwest, including Red Lake Nation in northern Minnesota. Electric Nation chooses EVs meticulously, matching the EV range and capabilities to the use case. This allows the vehicles to drive and charge in cold climates appropriately (Alternative Fuels Data Center 2024).



The Alliance for Tribal Clean Energy and the National Laboratory of the Rockies partnered to develop resources for Tribes interested in pursuing public EV charging infrastructure.

Concern #3: EVs will not work in regions with very hot weather.

Fact: Continuous exposure to extreme heat (above 100°F) can reduce EV battery lifespan. Newer EVs have thermal management systems that help keep the battery cool and protect battery life (Electric Vehicle Council n.d.).

EV owners can take steps to protect the battery and maintain vehicle efficiency:

- Park in the shade, when possible, to keep the vehicle cool.
- Use eco mode (Hardesty 2025).
- Pre-condition (cool down) the car's interior before driving.
- Charge overnight when the weather is cooler. Extreme heat can impact charging speed and stress the battery (Hardesty 2025).

The Cherokee Nation built a charging station at their government headquarters in Tahlequah, Oklahoma. The charging station has a solar panel cover, offering shade to vehicles while charging (Trotter 2017).

Concern #4: EV batteries are developed with critical minerals.

Fact: Mining for critical minerals can impact land, water, and human health, especially for Indigenous communities.

Organizations across the world are working to mitigate the impacts of critical mineral mining, and EV battery recycling research is advancing, enabling the reuse of some critical minerals. For more information about critical mineral mining, see **Section 6.2** of *Strategic Pathways for Indigenous Resilient and Innovative Transportation*: docs.nlr.gov/docs/fy26osti/99494.pdf.

Concern #5: EV batteries cannot be recycled effectively.

Fact: EV batteries can be recycled with a certified recycler. When batteries are recycled, critical minerals and other materials can be recovered and used in the production of new batteries. The EV battery recycling market is still developing and expanding.

To find out more about certified recyclers and accreditation standards for recycling, see the R2 Standard for electronics recyclers (sustainableelectronics.org/r2/) and the

e-Stewards Standard for Ethical and Responsible Reuse, Recycling, and Disposition of Electronic Equipment and Information Technology (e-stewards.org/the-e-stewards-standard/).

Concern #6: EV fires are common and difficult to control.

Fact: The risk of an EV fire is very low, and data show that EV fire rates are comparable to or less likely than non-EVs (U.S. Department of Energy 2024).

Trainings are available for emergency responders on how to appropriately respond to EV fires. Tribes can coordinate with Tribal emergency service providers and nearby local emergency service providers (e.g., fire and police departments) to ensure responders are prepared in the case of an EV fire.

To learn more about trainings for emergency responders, see Electric Vehicle Safety Training Resources for First and Second Responders (afdc.energy.gov/vehicles/electric-responders).

Concern #7: EV charging stations are often not working or unreliable.

Fact: When planning an EV charging infrastructure project, Tribes can do the following to have a strong O&M plan:

- Train on-staff electricians in EV charging equipment operations and maintenance (O&M) to improve reliability and reduce downtime.
- If O&M work is outsourced, make sure project partners are reliable and able to quickly repair charging stations. Ensure that O&M contracts with outside partners include requirements for uptime (the amount of time a charger is available and working), response time, repair time, emergency maintenance protocols, and preventative services.

Tribes can also implement practices that promote reliable broadband services, including stable internet connections, backup connections, and cybersecurity protections.

Concern #8: Charging an EV takes a long time.

Fact: The amount of time needed to charge an EV varies based on charging level, the vehicle itself, and other factors. Often, EVs are charged at home or work while parked. The following table compares the charging speed and charge time for the three categories of EV charging equipment (Alternative Fuels Data Center n.d.).

Table 1. Comparison of the Three Categories of EV Charging Equipment (Alternative Fuels Data Center n.d.)

Charging Level	Charging Speed	Estimated EV Charge Time (0% to 80%)
Alternating-current (AC) Level 1	Approximately 2–5 miles of range per hour of charging	40–50 hours
AC Level 2	Approximately 10–30 miles of range per hour of charging	4–10 hours
Direct-current fast charging (DCFC)	Approximately 100–200 or more miles of range per 30 minutes of charging	20 minutes to 1 hour

Concern #9: Charging an EV is expensive.

Fact: Where the EV is charged matters. Home charging is the most affordable option, but the cost depends on the local utility rates and time of charging. Many utilities offer lower electricity rates during off-peak hours, so charging an EV at night can be more affordable. Some utilities offer specialized EV charging incentives, such as bill credits for joining a managed charging program.

Public charging stations, especially DCFC chargers, will likely be more expensive than home charging.

Use the U.S. Department of Energy’s Vehicle Cost Calculator (afdc.energy.gov/calc/) to compare fueling costs for different vehicle makes and models.

Cover image: The Tule River Tribe installed EV chargers at the Tribe’s Eagle Feather Trading Post. Photo by Liam Huber, Tule River Indian Tribe

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