



ELECTRIC VEHICLE MYTH-BUSTING



As your Touchstone Energy® cooperative, we want to be your source for energy and information. Since electric vehicles (EVs) are becoming more mainstream, we put together a variety of fact sheets and information to help answer questions you might have.

Contact us for more information about EVs.

As electric vehicles (EVs) continue to become more mainstream, new myths are popping up about their benefits and how they operate. Here we try to dispel some of the common myths we've heard.

MYTH EVs are more expensive than gasoline cars.

FACTS The upfront cost remains higher for EVs than for similar gas cars; however, prices are expected to reach parity in the coming years, and incentives and rebates are available to reduce initial costs. In addition to federal tax credits for both new and used EV models, look for offerings from your electric cooperative or state. Beyond their purchase price, EVs cost much less to operate because electricity is cheaper than gasoline (its price is also more stable, which can help with budgeting). Drivers can likely expect to save hundreds of dollars per year on fuel alone. With regard to maintenance, EVs have substantially fewer moving parts, so less can go wrong and oil changes are a thing of the past.





EVs aren't actually better for the environment than gasoline cars.



EVs are much more efficient than gasoline cars. More than 80% of the energy put into an EV is used to propel it. Gasoline vehicles, on the other hand, use only about 20% of that energy. The rest is lost to inefficiencies or used to power accessories. Both battery electric vehicles and plug-in hybrid electric vehicles – when running on electricity – also produce no tailpipe emissions.

When considering the emissions associated with the electricity used for charging, EVs still come out on top. According to the U.S. Department of Energy's Alternative Fuels Data Center, nationally, battery electric vehicles produce 2,817 pounds of carbon dioxide equivalent annually, plug-in hybrid electric vehicles produce 4,824 pounds, and gasoline vehicles produce 12,594 pounds. Even in states heavily reliant on coal to generate electricity, such as West Virginia and Wyoming, EVs produce fewer emissions.

EVs are responsible for more emissions when being built – that's because of the energy intensity of battery assembly. However, they typically make up this emissions deficit after just a couple of years and are cleaner from then on. Furthermore, unlike gasoline vehicles, EVs continue to get cleaner over time as electric cooperatives and other utilities add more low-carbon energy sources to the electric power grid.



EVs can't travel far enough to meet my needs.



Nearly all new EVs have ranges over 200 miles (and most are at least 250 miles) and can therefore cover the majority of daily driving needs – across the U.S., drivers average about 40 miles of driving per day, according to the Federal Highway Administration. For those that require hauling and towing capabilities, electric pickups have arrived, along with vans, ATVs and UTVs. Road-tripping in an EV also continues to get easier as charging infrastructure expands, particularly along highway corridors. Many apps exist to help drivers locate charging stations and plan longer excursions.



There aren't enough places to charge, and the charging that does exist is really slow.



New charging stations are being added every day, and there are currently more than 120,000 places to plug in across the country. Also, keep in mind that most charging tends to be done at home, so you'll often wake up with your battery ready to go. When on the road, DC Fast Chargers can provide about an 80% charge in 30 minutes, and as charging and battery technologies improve, charging speeds should increase. One other factor to consider is that charging an EV is generally different from fueling up a gas car: rather than waiting until nearly empty, EV drivers incorporate charging into their daily routes.

MYTH You can't use/charge EVs in the rain.

FACTS EVs are perfectly safe to use and charge in the rain. When using a charging station, electric current flows through the connector only when it is secured to the vehicle. Otherwise, it's not energized. Furthermore, charging stations and vehicles are designed to handle water intrusion.

MYTH There isn't an electric version of the vehicle type I am looking for.

FACTS The diversity of EV models continues to expand – there are more than 50 models available total – and you can now find EVs across many vehicle types and classes, from sedans and hatchbacks to SUVs, minivans and pickups. The medium- and heavy-duty EV market is also growing rapidly.

MYTH Having an EV will raise my electric bill a lot.

FACTS Charging your EV at home will raise your electric bill, but the amount you pay to charge will be significantly lower than what you would have spent on gas. Here's an example. Let's say you drive 1,000 miles per month. In a gasoline car that gets 28 mpg at \$3.50 per gallon of gas, you'll be paying \$125 per month. In an EV that gets 3 miles per kilowatt-hour (kWh) at a price per kWh of 14 cents, you'll be paying just \$47. Over a full year, that's nearly \$1,000 in fuel savings alone.

MYTH EVs have bad performance.

FACTS EVs actually have great performance and are a ton of fun to drive. They have instant torque, producing immediate acceleration, and are more responsive. Additionally, their battery packs are often along the floor of the car, meaning they have a low center of gravity and better handling. Finally, they're much quieter than gas cars, another perk.

MYTH Our electric power grid can't handle so many EVs.

FACTS Electric cooperatives and other utilities are preparing now to ensure that the grid will be able to handle the expected influx of EVs. Grid upgrades will be needed, particularly on a local level and in areas with more rapid EV growth, but one benefit of EVs is that charging is flexible. This means, for example, that it can be done when the grid has excess power, such as overnight. Your cooperative may offer programs or incentives to make it easier and more convenient to charge during these "off-peak" periods.



EV batteries don't last long.



EV batteries are designed to last the life of the vehicle, and all manufacturers offer a battery warranty of at least 8 years/100,000 miles. Over time, batteries do degrade to some extent, but improvements in battery technology and management systems mean that many of the concerns of even a handful of years ago are not as prominent today.

Also, when batteries become unsuitable for propelling an EV – or when the car they're in goes out of service – they can often be moved to other applications, such as stationary energy storage. Batteries are believed to still have approximately 70% capacity at that time. Beyond that, battery recycling is poised to take off as an industry in the coming years and decades. Reusing batteries in other situations before the end of their full operational life and then recycling them can extract additional value.



EVs are more likely to catch fire than gas cars.



Fires in EVs can be more difficult to put out than fires in gas cars; however, despite the media coverage, EVs are no more likely to catch fire in the first place than gasoline cars. In fact, the rate of fire occurrence appears to be lower in EVs than in gas cars. As EVs are still a relatively young technology, more data is needed to get a clearer understanding of fire risks, and continued training for first responders will help with fighting EV fires in safer, more-efficient ways.

This article was provided by Advanced Energy, a nonprofit energy consulting firm. For more information, visit www.advancedenergy.org.

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