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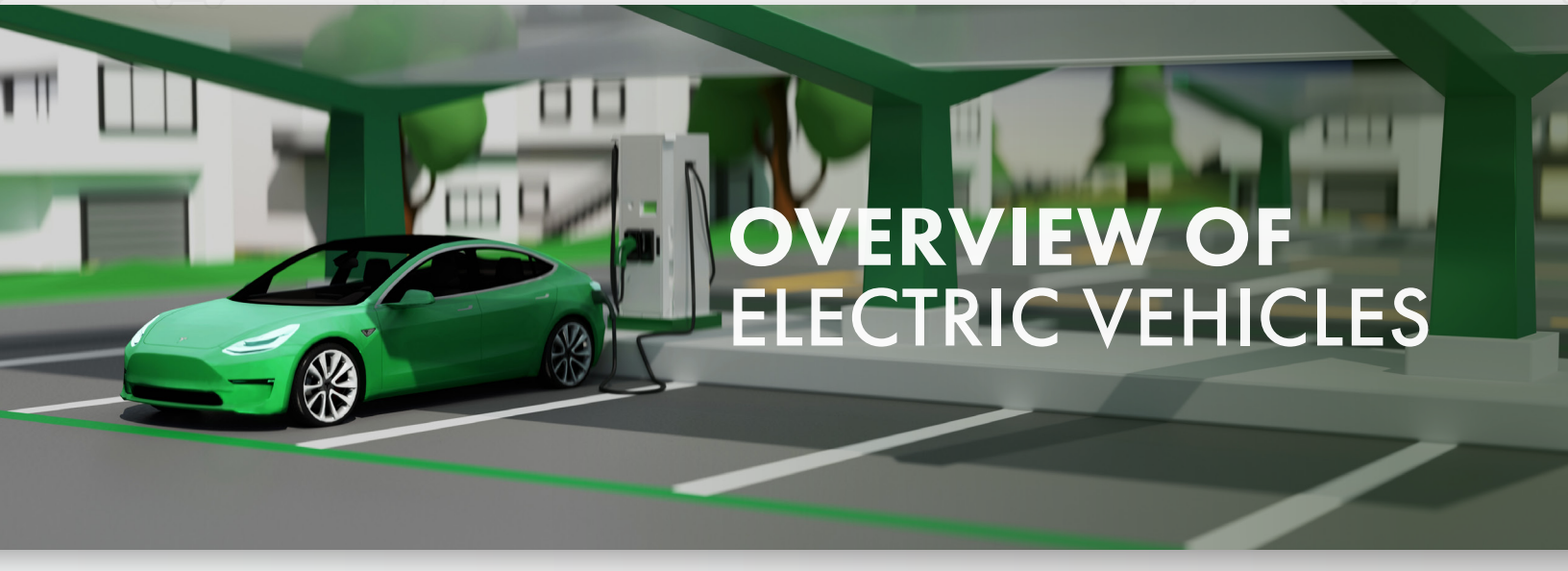

OVERVIEW OF ELECTRIC VEHICLES

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.

Is it smart to rely on such a "new" technology?

Electric vehicles (EVs) are actually not a new technology – they have been around for over a century. In the 1890s, electric cars were more popular than gas-powered cars because of their simplicity, reliability and low cost to operate. Henry Ford's wife even drove an EV.

For a variety of reasons, EVs disappeared for much of the 20th century, but they are on the rise once again.

What do the terms mean?

We are most familiar with conventional combustion-engine vehicles, but the market is changing, and it can be hard to keep up with the latest technologies, models and terminology. For simplicity, vehicles can be sorted into four main categories.

1. Conventional vehicles have an internal combustion engine, with the most common fuels being gasoline and diesel.
2. Hybrid electric vehicles have both a gasoline engine and an electric motor and battery pack; both gas and electricity power the wheels. The electric motor and battery are designed to improve fuel economy, so less gasoline is used to operate the vehicle. The battery is charged solely by operating the vehicle; it is not possible to charge by plugging in.

3. Plug-in hybrid electric vehicles (PHEVs) have larger battery packs than hybrids and use both gas and electricity to power the wheels. These vehicles vary in their electric range but shift to gasoline-only operation when battery power is depleted or in certain other conditions. The vehicles plug in to charge the battery.

4. Battery electric vehicles (BEVs) have much longer electric ranges than PHEVs, are powered solely by electricity and are charged by plugging in. Both PHEVs and BEVs fall under the "EV" umbrella.

What is the cost to own and operate an EV vs. a gas-powered vehicle?

While EVs can have higher purchase prices, incentives and rebates are available, and these vehicles have lower operating costs.

Using an electricity rate of 13 cents per kilowatt-hour (kWh), a BEV that drives 15,000 miles a year and can travel 3 miles per kWh will cost about $650 annually. In comparison, a gas-powered vehicle that gets 25 mpg with gasoline at $3.50 per gallon will cost approximately $2,100 for those same 15,000 miles – that's a savings of around $1,400! (A PHEV would likely fall between the two.)

Because of their simplicity (i.e., fewer moving parts), BEVs also tend to have lower maintenance costs than gasoline vehicles. PHEVs are slightly more complex, with both gas and electric components, but maintenance costs should still be reduced. For example, thanks to regenerative braking, the brake system experiences less wear.

Other considerations to add to the calculation:

- Tax credit: EVs may qualify for the federal tax credit of up to $7,500 for new models and up to $4,000 for used models. The specific amount you receive will depend on a few factors.
- Other incentives: Some states, cities and cooperatives offer additional credits or perks for EVs.

RESOURCES FOR FURTHER INFORMATION

The following resources can help as you explore options for purchasing or leasing a BEV or PHEV.

Cost-of-ownership Calculators

- Edmunds - www.edmunds.com/tco.html
- U.S. Department of Energy - www.fueleconomy.gov/feg/findacar.shtml
- Alternative Fuels Data Center - www.afdc.energy.gov/calc/Charging Station Locators
- PlugShare - www.plugshare.com
- Alternative Fuels Data Center - www.afdc.energy.gov/fuels/electricity_locations.html
- A Better Routeplanner - www.abetterrouteplanner.com
- Chargeway - www.chargeway.net

GENERAL INFORMATION

- GoElectricDrive - www.goelectricdrive.org
- Plug In America - www.pluginamerica.org

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

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