

Electric Vehicles Come to Bronxville

By Carole Upshur,

Bronxville Green Committee

When my Bronxville neighbor at Midland Gardens began recharging his electric car at a newly installed outlet in the garage we share, my curiosity was sparked, and not necessarily because being stuck at home for months has made me eager to get on the road. I found myself exploring recent developments in electric vehicles (EVs). A couple of my assumptions were confirmed by people I spoke to: some people buy electric vehicles because they're early adopters of high-tech products and some because they're committed to the environment. But many buy electric cars for the nice finishes, safety, low maintenance, and just plain fun of driving them.



EVs accelerate very quickly and handle well. They're quiet and smooth and have no problem getting up to highway speeds or passing. Owners raved about having had no repairs for over five years. Full EVs have only 20 moving parts versus 200 for a car powered by an internal combustion engine (ICE vehicle).

Testimonials about how great EVs are have become plentiful on the web. One West Coast owner reported happily traded her \$300 a month gasoline bill for a mere \$15 added to her electricity bill, the cost of operating her EV. A Midwest farm family said they lived twenty-two miles from town and go back and forth frequently for groceries, church, to visit friends, and for kids' school activities. For these trips they park their pick-up truck at home and use their EV. A Bronxville resident who recently traded in his first EV for a second one said it's hands down the best car he's ever owned. Some families told me they bought their first EV as a second car for local trips, saving their larger gas car to travel farther from home. Many of the early adopters I have heard about eventually broke the gasoline connection completely by switching entirely to EVs once the mileage and variety of available vehicles improved.

Exactly what is an electric car?

There are several types of electric cars on the market today.

Hybrid vehicles (HEVs) have been sold for over a decade. They combine an on-board battery (or several) that allows the car to use battery power for some miles driven before a back-up gasoline engine kicks in. The Toyota Prius is an example. Hybrid vehicles don't need to be plugged in and they operate like regular gasoline-powered vehicles, although they may be more

expensive because of the added technology. The battery is charged through kinetic energy created when the driver applies the brakes. Hybrids get good gas mileage, and they reduce emissions by about 22%.

Plug-in Hybrid Electric Vehicles (PHEVs) came along more recently. Plug-ins charge the batteries at a charging station and go farther on the electric-only miles before the back-up gas engine takes over. If you're using the car for local trips and a short commute to work, say ten to fifteen miles round trip, you can avoid using gasoline altogether. Most of these vehicles get only 25-40 miles on full electric, but you don't have to worry about recharging during longer trips. Because they use less gas and more electric power they save about 36% on greenhouse emissions.

Battery Electric Vehicles (BEVs) are designed without any gasoline back up. Less expensive models have a 125-150 mile range, and if you spend more or select an upgraded model, you can get over 250 miles per charge.

What about charging?

Many sources confirm that most people drive at least one family car no more than 30 miles a day, which makes a plug-in electric highly practical as a second car. Most current owners charge at home or work. There are different types of chargers and if you don't use the car much in the evening, you can plug it into a regular 120 volt plug overnight for a full charge by morning. This is a Level 1 charger (8-12 hours). Faster Level 2 or 3 chargers provide a full charge in 4-6 hours (Level 2) or in as little as one hour (Level 3). All EVs can use Level 2 chargers, which are the most common public chargers, but some may not be able to use the superfast Level 3 chargers that utilize direct current. Tesla has its own network of fast chargers for its cars, but they can also use the public stations. A federal tax credit will reimburse you for one-third of the cost, up to \$1000, for installing a charging station at home. ConEd offers a special low electricity rate for overnight charging in New York areas they serve, including Bronxville.

Accessing chargers in apartment complexes can be challenging, but buildings are starting to install them. Any resident of VillaBXV can get a charger but must pay for installation. Shareholders at Midland Gardens can request them in reserved garage spaces; they share the cost of installation and pay a flat monthly fee for electricity. Rebates are available for multiunit buildings (as well as other public and private entities) through the New York State Energy Research and Development Authority (NYSERDA) that cover much of the cost of installing Level 2 charging stations (see www.nyserda.ny.gov/Charge-Ready-NY).

According to NYSERDA, currently there are almost 5000 charging stations located in New York State, including some high-speed chargers along the New York State ThruWay. As an incentive, many are free. A Westchester County bond issue passed in May 2020 provides \$1 million to install additional charging stations throughout the county. Although there are now fewer of the highest-speed chargers, most public ones are Level 2, for which most EVs will need to plug in for only 30 minutes to get up to 80% power. A two-car charging kiosk is located at the Bronxville train station (in the Parkway Road parking lot behind Chase Bank), four public charging stations are being installed in the Kensington Road garage, and seventeen stations are

available at the Ridge Hill Shopping Center in two different garages. Special phone apps indicate locations and the type of charger (see [Plugshare app](#)). Some owners have reported that many public chargers aren't well maintained and don't work, which can complicate taking EVs on long drives. In some communities EV owners offer their own home outlets for those looking to recharge, and find it a great way to meet other EV enthusiasts.

A note: Cold weather can shorten the range of EVs; many websites offer suggestions on how to drive them efficiently in snow and cold.

What about cost?

There are more than two dozen EVs on the market today, including basic sedans, SUVs, and luxury models. This website reviews types of EVs, if you are ready to explore:

<https://pluginamerica.org/discover-40-plug-in-models-with-the-ev-guide/>

While the least expensive (starting around \$30,000) generally costs more than an average sedan, rebates and tax credits can lower the cost to about the same as a compact car, especially when you factor in much lower expenses for maintenance and fuel. A federal tax credit can offset \$2500-7500, depending on the vehicle, although for some more popular cars these rebates are phasing out. Sustainable Westchester has an arrangement with a local Nissan dealer for an additional \$5000 discount on a new Nissan Leaf. New York State offers a point-of-sale rebate of up to \$2000 for EVs (see NYSERDA.ny.gov/All-Programs). A Port Authority Green Pass from EZPass discounts tolls and allows HOV lane use for any EV or hybrid vehicle that gets at least 45 miles/gallon. For more information on calculating the cost and savings of buying an EV:

<https://www.nyserda.ny.gov/All-Programs/Programs/Drive-Clean-Rebate/About-Electric-Cars/Electric-Vehicle-Calculator>

Another option: buy a used EV being turned in from a lease. Although such purchases aren't eligible for rebates, the initial cost is often much lower. And don't worry about the batteries. They're designed to last at least 100,000 miles and to be recyclable and replaceable.

Why is an electric car better for the environment?

According to the U.S. Environmental Protection Agency (EPA), in 2018 transportation contributed 28% of greenhouse gas emissions in this country. About half of that came from cars and vans while the rest was contributed by trucks, shipping, and air travel. Substantially curbing emissions from cars will be essential if we're to meet New York State's ambitious climate goals.

Environmental organizations frequently talk about "electrifying the grid." Because we already have the technology to generate electricity from clean, renewable sources such as wind, solar, and hydroelectric, it makes sense to move to electricity as the major source of energy for heating and cooling our homes and businesses, and for transportation. A fully electric vehicle running on power generated by solar or wind emits zero emissions.

Although we're in the process of switching to renewable sources, we're far from achieving a clean electrical grid. Even so, EVs are better for the environment. Even a car operating on electricity generated by "dirty" coal runs more cleanly than a gasoline-powered vehicle, which are inherently inefficient. Cleaner electrical generation, such as from natural gas, increases the

benefit, and if the electricity is from clean, renewable sources (think your own solar panels, for example), then there are no emissions associated with either charging or using the vehicle. The Union of Concerned Scientists says that about 80% of the U.S. has enough of a mix of cleaner electric generation to make EVs preferred over gasoline powered vehicles.

Of course, it also takes raw materials and energy to produce the batteries for EVs. Ongoing studies being conducted in the European Union suggest that the life-cycle of electric vehicles inclusive of manufacturing is still positive in terms of reducing greenhouse emissions compared to gasoline powered vehicles (25-75% less greenhouse emissions depending on the energy source). Further research is being conducted concerning the environmental impact of EV batteries. We want to make sure they really can be recycled and reused in a cost-effective manner, so as not to create a new source of hard-to-dispose-of waste. And producing the batteries requires raw materials that are mined in various places around the world at a high environmental cost.

Where can you learn more?

In addition to the links provided throughout this article, Edmunds.com, the car trade publication, reviews dozens of EVs currently on the market, with brands from Audi, BMW, Chevrolet, Chrysler, Honda, Hyundai, Fiat, Jaguar, Kia, Nissan, Subaru, Tesla, Toyota, Volvo, and Volkswagen.

Local non-profits and New York State promote electric vehicles; in addition to NYSERDA (nyserda.ny.gov). Also check out Sustainable Westchester (cleantransportation@sustainablewestchester.org) for info about rebates and other incentives.

Maybe you plan to investigate electric models when it's time to buy your next car. For me, an EV is sounding better than ever.