Own An EV And Kiss Your Gas Goodbye!

Croton's Sustainability Committee is encouraging anyone looking to buy a new car to consider an electric vehicle (either fully electric or plug-in hybrid EV).

Why Switch To An EV?

After home heating, burning gasoline to run a car may be your largest source of the greenhouse gases (GHG) that cause climate disruption. The rising and volatile cost of gas may also be a burden on a family's finances. Both issues are reduced by switching to an EV.

To travel the same distance, driving an EV in our area causes (at power plants) about 70% less GHG, costs less per mile than gasoline, and its maintenance is much cheaper. You may also get up to $9,500 off the cost of a new EV through rebates and tax credits, and save 10¢ per kilowatt-hour (kWh) when charging an EV at night. That's almost half-off the price of power!

Electric Vehicles 101

There are two types of EVs**:**

- battery electric vehicles (BEV) run only on electricity and have no gas engine

- plug-in hybrid electric vehicles (PHEV) run on electricity or gasoline.

Standard hybrid cars (e.g., Toyota Prius) are not EVs.

BEVs have ranges comparable to gas-driven cars, e.g., 250 to 300 miles, before needing charging. PHEVs have ranges from 25 to 50 miles before they automatically switch over to their gas engines, which provide another 200 to 300 miles.

What Kind Is Best For Me?

Just as you choose a gas-powered car based on your desires and needs, so should you choose an EV or PHEV. How would it be most often used, e.g., local driving, daily commuting, long-distance traveling? Federal studies found that ~80% of car trips are less than ~25 miles, ideal for EVs whose batteries then need only a daily "topping off". Frequent charging does not harm an EV battery.

Many EV owners do most of their daily driving within a 100-mile radius. To avoid range issues, some buy PHEVs. While an EV's own charger may be smaller than a shoe box (fine for traveling), long distance trips may require planning to ensure time isn't wasted re-charging along the way. As faster chargers are installed across the country, that issue will diminish. For vacation trips, some EV owners rent a gas-driven car or drive a second car that runs on gas.

How To Shop For An EV

When next you're in the market for a new car, find an EV model that's right for you at these sites**:**

http://content.sierraclub.org/evguide/pick-a-plugin

http://plugstar.com/cars

http://driveelectricus.com/explore-electric-cars/

Once you find one (or more) models you like, call their local dealers to find out what's available, and how long it may take for delivery. For contact information on nearby Westchester dealerships offering EVs, email to ***info@sustain-croton.org*** For questions about a specific EV model, contact a dealer or web search for an online forum about it.

How To Get Tax Credits And Rebates

When buying a new (not used) EV, file for the federal tax credit at:

https://www.irs.gov/forms-pubs/about-form-8936

Find the New York State rebate at:

www.nyserda.ny.gov/All-Programs/Programs/Drive-Clean-Rebate

For any EV (new or used), find the 10¢/kWh night charge rebate at:

https://www.fleetcarma.com/smartchargenewyork/

For a $300 federal tax credit to install a permanent charger at your home, go to:
www.irs.gov/instructions/i8911#idm140707868933440

EV Charging 101

There are four types of chargers**:**

A **Level 1** (L1) charger comes with the car and can be plugged into a standard 120-volt electric outlet. All EVs can use L1 chargers. While a 40-mile charge on a L1 may take up to 10 hours (e.g., overnight), many owners find it sufficient for their daily driving habits.

A **Level 2** (L2) charger requires a 240-volt electric service. L2s come in different wattage outputs. All EVs can use L2 chargers. They plug into the same port (see photo at right) that works with L1 chargers. L2s installed in homes may take 3-4 hours to provide a 40-mile charge. Total cost (charger plus installation) runs about $1,000. Those found at malls and parking lots (e.g., Croton's Municipal Building and railroad station) may take 2-3 hours. The most powerful L2 units may take less than an hour.

In this 2021 Nissan Leaf, the L1/L2 port is on the right and the L3 port is on the left.

A **Level 3** (L3) charger (also called a Direct Current Fast Charger, or DCFC) requires a 480-volt electric service not found in homes. At present (2022), almost two dozen BEV models have receptacles for L3 chargers, but PHEVs do not. To be sure there's one in your desired BEV model, ask to see its L3 receptacle. Teslas may use them with an adapter. L3 power outputs vary, with many able to provide a 40-mile charge in 15 minutes or less. L3 units are found at some shopping centers (e.g., Ossining's Stop & Shop) and highway rest stops.

- Tesla **SuperChargers** are presently (2022) usable only by Tesla EVs. They may provide a 40-mile charge in less than 2 minutes. Several may be found at Ossining's Arcadian Shopping Center. Tesla is creating a national network of SuperChargers.

Charging at home is typically done in early evening or overnight. Con Edison's SmartCharge program pays 10¢ per kilowatt-hour for charging between midnight and 8 AM on any day. Doing so saves Con Ed money, and cuts an EV owner's charging cost almost in half, saving (relative to gasoline) almost 70% on the per-mile cost.

How Do I Use A Public EV Charger?

It's a lot like E-Z-Pass. Using a credit card, open an account online with a charger company. Croton's public chargers are with ChargePoint. An account with it also works at most other brands of public chargers. Use the credit card to deposit $10. When that's used up, another $10 will automatically be charged to your card. A smartphone or a keychain card from the charger company is used to start the charging process. At many public chargers, a 40-mile charge costs less than $5.00.

To find public chargers, use the charger company's app or enter "ev charging stations" into googlemaps.com. Charging an EV means you'll never again smell like gasoline!