

So You Want An Electric Car?

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Interest in battery-electric cars (BEVs) appears to be greatly increasing. I have been promoting BEVs for several years; recently I have been getting more requests than before about how to get a BEV.

There are two categories of EVs:

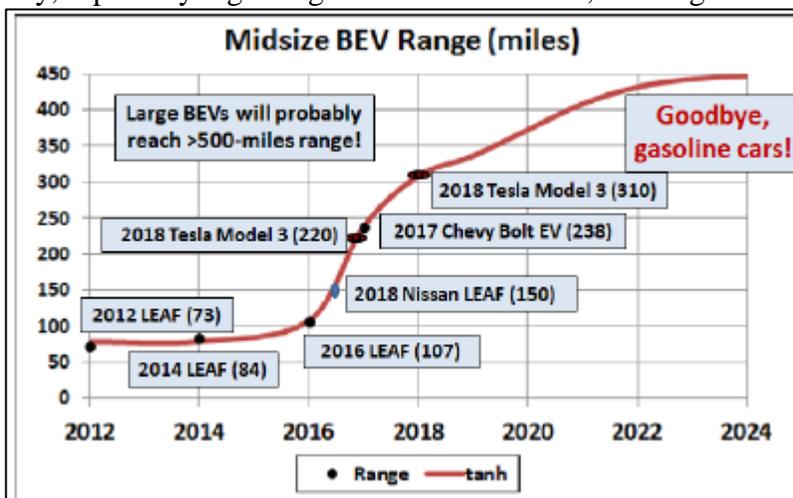
- **PHEV** = Plug-in Hybrid Electric Vehicle: small ICE + midsize battery + 1 or 2 electric motors + plug.
- **BEV** = Battery Electric Vehicle: large battery + 1 or 2 powerful electric motors + plug.

ICE = Internal Combustion Engine car (gasoline or diesel).

Here I am only discussing getting a BEV (e.g., a Chevrolet Bolt EV or Tesla Model 3), not a PHEV (e.g., Chevrolet Volt or Toyota Prius Prime)

Currently I recommend leasing instead of buying a BEV, except for used BEVs. The reasons for leasing are:

- BEV technology is changing very rapidly, especially regarding their batteries. Thus, the range has been



increasing rapidly for midsize BEVs:

- Batteries lose capacity with use. Teslas lose about 6% in 100,000 miles and about 8% in 200,000 miles.
- Negative: Only about one-half of the federal tax credit is taken off the lease price.
- When midsize BEVs have range 400-500 miles, perhaps buying will be better than leasing.

Here is what I have been telling persons interested in getting a BEV in the New River Valley:

- Check out my web page: <http://www.roperld.com/Science/NissanLEAFUsed.htm>. The 2016-17 LEAFs have 107-miles EPA range. You may want to specify the fast-charging (CHAdEMO) capability, so you can charge it at the Blacksburg Town Hall and [other places in Virginia](#).
- The best LEAF salesperson at First Team Nissan in Christiansburg is Jim Earp (jearp@firstteamnissan.motosnap.com) (540) 382-2903) I leased my 2012 & 2015 LEAFs through him. If you want to buy a used leaf, ask Jim to find one for you. If you want to lease the new 2018 LEAF, ask Jim about the lease terms. The one available soon has 150-miles range, which is good for trips to Roanoke. If you want the >200-miles one, you will probably have to wait until late 2018.
- You might want to schedule a test drive of the new 2018 LEAF: <https://allnewleafdrive.com/>. Nissan will bring it to you to test drive.
- You can order the 238-miles Chevy Bolt EV (CBEV) you want from Shelor. [Go to here to create what CBEV you want](#). The salesperson there is Josh Beavers [jbeavers@shelor.com] (276) 620-7090]. If he tells you how long it will take to get the one you want, you may be able to get one sooner from Ted Britt Chevrolet at 46990 Harry Byrd Hwy, Sterling VA, north of Dulles Airport. The salesperson there is Anthony Saunders [<mailto:AnthonySaunders@tedbrittchevrolet.cmdlr.com>] (703) 989-8465]. That is where I got mine through Anthony.
- To get in the queue to get the Tesla Model 3: <https://www.tesla.com/model3>
- If you want to install a level-2 240-volt charging station in your garage or driveway, I recommend the



indoor/outdoor [GE DuraStation at Home Depot for \\$397](#). You can just use the 120-volt portable charging station that comes with the car; many LEAF drivers do that. It can be [converted to a 240-volts portable charging station](#) to just use a 240-volt outlet instead of a fixed charging station. If you want a charging station with readout and WiFi data collection at a higher price, check out [OpenEVSE.com](#).

References:

- <http://www.roperld.com/science/ElectricCarsMusings.pdf>
- <http://www.roperld.com/Science/bevspevs2017.pdf>

Feel free to contact me if you have further questions: roperld@vt.edu