Millerton's Earth Day

Your Next Car Will Be an EV

The long-term trend is clear: Most of us will be driving electric vehicles before this decade is over. (Or riding as they drive us.)

Electric motors are quiet. No pollution spews from the tailpipe. (There is no tailpipe.) Motors and batteries suit little cars and giant cargo haulers, urban lunch buckets and hardworking country pickups. Maintenance is nil, there are few moving parts to replace. No oil leaks. You'll save big compared to fuel, drive right past your old gas station. Charging is cheap, or free at the office. The battery will outlast you and the next owner.

Until recently your choice in vehicles, if you wanted pure electric, was limited to the Tesla line and the Nissan Leaf. They turned up at auto shows but not in showrooms. (The world's first foray into electric cars, including GM's EV-1, ended in ignominiously 1999.) The

choice in hybrids keeps growing—manufacturers now routinely make them as "clean," fuel-saving alternatives to fossil-fuel cars and trucks—but you pay for the redundancy of two forms of propulsion under one hood, and both tend to be puny. The mass market will probably

2020 Chevrolet Bolt, range 259 miles, MSRP $36,620

remain hybrid for some time, dominated by the Asian brands Honda, Hyundai, Kia, and Toyota and two American brands, Chevrolet and Ford.

Model year 2020 is different. Nearly all the major marques are wading in with serious EV sheetmetal, range problems either resolved or targeted at user segments, with many more soon on the way. The little EVs have been augmented by a whole fleet of mid-size EV SUVS, crossovers, and even sedans.

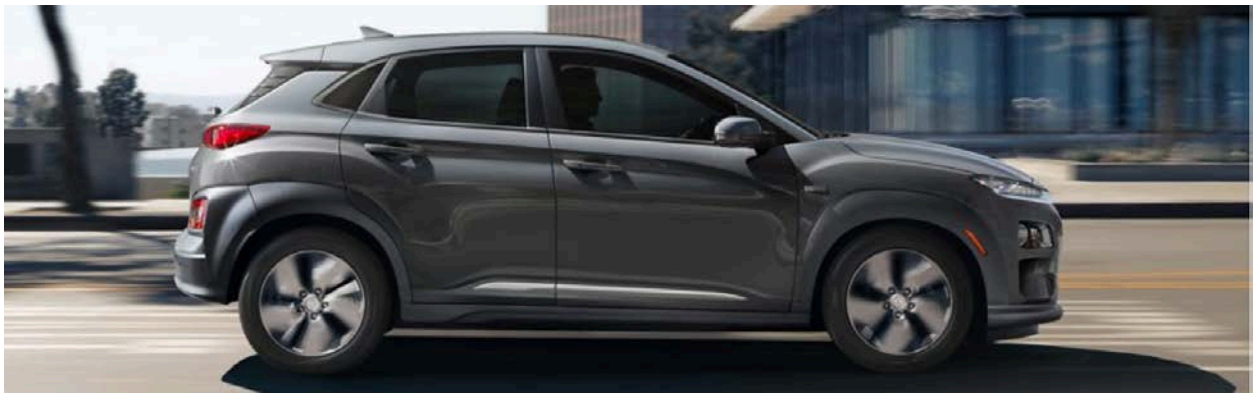
The switch to electrons will be as rapid as any societal transformation modern humans have adopted—way faster than we stopped smoking or cottoned to mobile phone or stopped being irked when an automated help line asked if we wanted to continue in English or Spanish. The three biggest reasons: First, EVs will be affordable. They almost are. Second, peer pressure. it's the right thing to do, all the innovations will happen in EVs, and the people who stick with petroleum will soon lack customary services. Three, EVs make sense—that is, as long as we soon fix our antiquated, balkanized national electric grid and keep reducing fossil fuels for electric generation. Otherwise, we're just changing millions of little greenhouse-gas emitters for a few giant ones only marginally less destructive.

2020 Tesla Model 3, range 322 miles, MSRP $39,990

Finally, they are fun. Everybody likes a frisson of neck-snapping acceleration now and then. A motor will always beat an internal-combustion engine off the line: all its power is available at zero. (Go granny go.)

What's held the market back initially was high cost, which has fallen as the cost of lithium-ion batteries dropped from $400 per kW to about $100 now. Tesla's success converted many skeptics, and now it has a car for under $40 grand, the Model 3. Another involves a bit of human psychology so common it warrants a term: range anxiety. It's all too easy to imagine yourself stranded in an uncomfortable situation with a dead car, any rescue many miles and minutes away. But EV range is increasing dramatically, our expectations are adjusting, and the collective experience of electric vehicle owners is starting to make a dent in the American proclivity to prefer fear over fact.

Charging, too, is changing, as thousands more crop up across the country. EVs can be readily charged at home on 120v household current, if you can wait overnight and don't have to go far (ten hours of house current will get you 40 to 50 miles). Meanwhile, at companies with a commuting workforce and municipal lots, Level 2 (240-volt) charger will soon be de rigueur. (See accompanying article.)



2020 Hyundai Kona Electric, range 258 miles, MSRP $37,197

Already, there many EVs to choose from. Audi, BMW, Chevy, Hyundai, Jag, Kia, Mercedes, VW, Volvo have EV models for sale or announced. Soon, the choice may well be overwhelming. Several car companies will offer electric cars in every market segment by 2022, Andrew Wheeler and the petroleum lobby be damned.

The initial choice is at the high end—mostly the ultra-high end. Car designers and builders have indulged themselves as if it were the 1920s and the market for huge, powerful, and flashy was endless. Well, it just ended. Some 27-year-old tech multimillionaires might want them, but most people will be thinking modestly, won't need to do zero to sixty in 3.5 seconds—that's Top Gun g-forces, by the way—to pick up the nanny. Particularly now that the economy is on Woozy Street for who knows how long.

But the first wave of EV compacts, urban cars, micro SUVS, and baby crossovers is here, too, from the Mitsubishi i-MiEV and Smart Fortwo Electric to the Ford Focus Electric and the Fiat 500e. Priced . It was the first to try to automate assembly, before robots had learned to behave. Its first modern electric car was a beauty, and backed it with a wonderful ad campaign, but the expected charging infrastructure failed to magically appear and GM ended up buying back every EV-1 it made and petulantly destroying them.

Subaru, a popular choice in the rural Northeast, is staying its course, with only a small-beans hybrid effort yet to launch and an announced intention to have electric or hybrid versions of all of its models—but *not until 2035*. (There might be no gas stations in CA or NY by then.) This risks losing its grip on the college market.

Leader Too Far? The Toyota Prius has been around for years and is the world's favorite hybrid. Toyota doesn't have a battery-operated car yet—in fact, prefers lots of hybrid sales to a few electric ones—and also because it has leap-frogged the market with a fuel-cell electric, the Mirai. The propulsion system's only byproduct is pure water. The Mirai has been on the car-show circuit for years; now you can have one in your driveway. Which is where it might have to stay. It's range: 312 miles. Refilling takes a mere 5 minutes, like a fossil-fuel car. But the few filling stations with what a fuel cell needs, very cold hydrogen, are rare and mostly in California. Wallingford is the nearest H_2 station around here; beyond that it's Quebec, Canada. This will change, but probably not quickly in this economy. (Two other fuel-cell cars are also in the offing: the Honda Clarity and Hyundai Nexo.) Which is too bad. One can't help rooting for an elegantly simple solution. Give me the power source that brought Apollo 13 back home.
—**Nat Oftling**