

well-known Model S or X. Tesla's Model 3 is positioned as the affordable Tesla model "for the masses", starting at US\$35,000 or C\$47,000. Tesla cars sell at a premium which funds its extensive network of L3 SuperChargers (they're the only company so far to build its own network of high-speed chargers around the world).

But the EV world is much broader than Tesla; there are many other EVs. PlugNDrive.ca has a database of all the EV models for sale in Canada, and a Discovery Center where you can try many of them out. AutoTrader.ca has prices on used Teslas, Nissan Leafs, and more.

What about Hybrids?

A hybrid car or PHEV is one that has two different power systems, usually electric and gasoline. The theory behind these is that if, say, you run out of electricity, you can still drive on gasoline. The Toyota Prius and the Chevrolet Volt are leading example of this. My problem with this is that you still have all the perils and expenses of the gasoline engine. As the manufacturers' range of BEVs goes up, demand for PHEVs is starting to taper off.

A different kind of dual-propulsion system is the all-wheel-drive BEV. Tesla and some other EV cars can be had in an All Wheel Drive (AWD) option; they build the car with a second electric motor to drive the second set of wheels, so (a) you get more pickup, (b) you get slightly better traction control on slippery road surfaces, and (c) you may be able to still drive if one motor fails.

So many choices! That's why PlugNDrive says "there's an EV for everyone." For my money, the single power system of the BEV is the way to go but, as the ICE car makers say, "your mileage may vary."

Give the Brake a Break

EVs feature "regenerative braking", using the electric motor rather than mechanical braking to

slow the car; this returns energy to the battery, increasing range. And reduces brake maintenance!

Not Just Cars

Subways, and many trains in Europe, have been electric for ages. Companies are now building all kinds of electric vehicles: everything from motorcycles to delivery trucks and tractor-trailers to buses and school buses to ferry boats and even airplanes. And naturally most systems on spacecraft run on electricity, including that longest-running EV, the Mars Rover! So you'll be in good company when moving to an EV.

Safety Last?

Would you walk around with a bomb in your back pocket? Hopefully not! So why drive with one in the back of your car? There are around *100 gasoline car fires every day* in the US, some with fatalities, yet you rarely hear about them. The odd time an EV is smashed up badly enough to catch fire, it's big news – because it's so rare.

Learn More; You'll Want an EV!

<https://darwinsys.com/evs> – Ian's EV overview

<https://plugndrive.ca/> EVs for Canada

<https://evsociety.net/> Ontario group; local chapters

<https://electrek.co/> Daily EV News Coverage

<https://www.plugshare.com/> Find Chargers

<https://tesla.com/> Tesla cars, charger map, etc.

<https://ts.la/ian40191> Buy your new Tesla with my referral link for 1500 km of free Supercharging

<http://teslaownersclub.ca/> Tesla Owners Club

<https://model3ownersclub.com/> Tesla Model 3

<http://TorontoEV.club/> Toronto (Thornhill) Club

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**Electrify
your
ride!**



The Time to Drive Electric is NOW

When people see or hear that I'm driving an electric car, they often have questions. This is my FAQ, or answers to Frequently Asked Questions.

What's The Difference?

There are many small differences that add up to a lot, but the process of driving a BEV (battery electric car) isn't so different from driving a gasoline or diesel car (called ICE cars, for Internal Combustion Engine cars): steering wheel, accelerator, brakes. A few of the biggest differences:

- Less noise, smoother ride
- EVs are cheaper when you factor in fuel, maintenance, repairs, etc.

But first...

How far would you go?

"Range anxiety" is a common concern. Since most people's daily commute is around 20-40km each way, an EV with a range of around 100km will get you to and from work without needing to stop and recharge; if you drive the 100km from Barrie to downtown Toronto you'd need a range of 250km. Early EVs had limited range, but it's no longer really an issue. My Tesla Model 3 with long-range battery option is good for around 500km of normal driving on one charge. Some mileage fanatics managed to get almost 1,000 km on one by driving slowly and not using the air conditioning, a technique known as "hypermiling." For comparison, a car like a Chevy Cruze has a range of about 800km of normal driving on a full tank of gasoline.

Who would make such a thing?

Electric cars are moving from novelty item to mainstream. While Tesla and Nissan are the two best-known and best-selling electric car makers, there are many other electric cars on sale in North America now, including the Chevy Bolt, the Mercedes Smart forTwo electric, and more. In fact, almost every major car maker is on board. The list keeps changing, so check out plugndrive.ca for updates.

Note that Tesla is an all-American company with the greatest percentage of American-made parts of any car, and doesn't make any ICE cars at all.

No Speed Bump

Electric motors are not only quieter, they also provide near-constant torque (acceleration) at any speed. So whether it's getting up to speed quickly or zooming a bit to get out of an unexpected situation at highway speed, you'll always have the oomph you need. As well, there's no need for an expensive and inefficient "transmission" to keep changing the ratio of engine speed to wheel speed, so you get smooth riding at any speed.

Hate waiting in line at the pump?

Imagine if you had to take your smartphone to a special charging station, wait in line, and pay five bucks for each day's energy. That's how EV drivers view the fueling of gasoline cars!

EVs usually charge overnight at home, like your cell phone. Home chargers are "Level 2" or "L2", running off a 240V circuit like an electric oven or dryer would. Your car can either plug directly into an outlet or, for more control and convenience, a "charging station" or EVSE can be installed.

There are also "fast chargers" (Level 3 or L3) for road trips. These use DC at a higher voltage to charge in 20-40 minutes, giving time to recharge

your coffee cup and get snacks. Tesla cars use the company's own L3 SuperCharger network, while EVs from other makers use fast chargers run by Flo, ChargePoint and several other networks. Web site <https://PlugShare.com> can show you various types of chargers on a map. Most EVs have navigation apps built-in, to help you plan your driving and charging.

Want to Cut Your Waste Size?

How much gasoline do you waste idling in stop-and-go traffic? Or when waiting for a passenger? EVs only use energy when moving. How much do you waste while idling to pre-heat your car in winter or to pre-cool it in summer? An EV can do this while plugged in, without affecting range.

No Fuming

Hate the smell of gasoline and exhaust fumes, and the damage it does to your lungs and body (and the environment)? EVs run on clean, efficient electricity. No fumes, no air pollution, no noise, very low vibration. What's not to like?

Some people install home rooftop solar with battery backup to both provide grid-down power backup and also to generate power in the daytime and charge up the EV at night when it's not being driven to and from work.

Even in places where electricity is generated by less-clean sources than in Ontario, an EV still results in less overall pollution.

The ICE is Melting

If you've ever gotten close to a gasoline engine that's been running for a while, you'll appreciate how ironic the acronym ICE actually is. ICE car engines run at a temperature of several hundred degrees, and all that heat has to go somewhere. There's a liquid-filled radiator that dumps some of the heat into the atmosphere. In winter some of it is used to warm the interior. Most of the heat

goes out the tailpipe (along with tons of polluting chemicals which make living things sick, and greenhouse gases which harm the climate). Some of the heat doesn't escape, and causes all the gizmos under the car's hood to age prematurely, costing you extra maintenance dollars to replace things that shouldn't really fail.

The Dealer has an Ace up their sleeve

If EVs are so good, why don't car dealers promote them more? This is an age-old question, and the answer is very simple: "Follow the money." Most dealers are in a conflict of interest with EVs: they not only want to sell you a new car every few years, but they also want you to have to repair it often, especially right after the warranty is up (just by coincidence, of course). Thus, your repair bills are part of the equation, and part of the reason that the mainstream car makers sell their cars through dealerships at a relatively modest markup; they know the dealers will buy repair parts, and the dealers know they'll make money off you when your car breaks down or just needs servicing.

Since EVs have hundreds fewer parts (in the engine alone, not to mention no radiator, no oil changes, no exhaust/muffler, etc.), dealers will make far less on EV service and repairs, so it's small wonder many dealers will try to divert EV buyers to ICE cars.

Tesla doesn't use dealerships; they have company stores, as much about customer education as about sales. Tesla runs their own service centres but also train and authorize independent repair services.

Which EV Should I Buy?

"Marry in haste, repent at leisure" is the old saying about commitment. Buying a car is a big outlay for most of us, often second only to buying a house or condo, maybe the biggest for some people. So: take your time; investigate thoroughly.

I did so, and was fortunate enough to have the financial resources to buy a Tesla. But not the