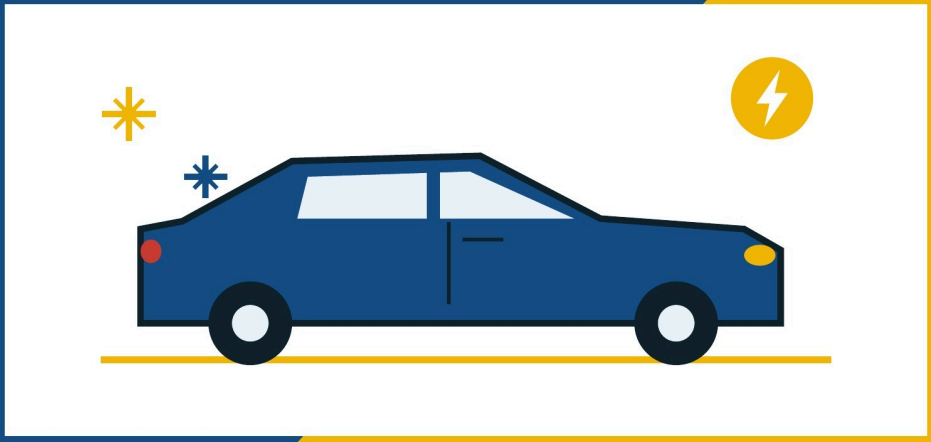
A PLAYFUL GUIDE TO GAS, HYBRIDS, PLUG-INS, AND EL

Car Proof

The New Car Edition — a playful guide to gas, hybrids, plug-ins, and electric cars for seniors



Large print • Step by step • No technical experience needed

John Marshall

PROUDLY CANADIAN



PROUDLY CANADIAN

FREE SAMPLE CHAPTER

By John Marshall

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MEET THE LINEUP

Four Ways a New Car Moves

Walk into any dealership today and the same car may come four different ways. The body looks familiar; what moves it is the real choice. Here is the whole family, in one calm page.

Gas engine › **Hybrid help** › **Plug-in bridge** › **Full electric**

1. **Gas** An engine burns gasoline, exactly as cars have for a century. You fuel up in five minutes at any station in Canada. Simple, familiar, and still the cheapest way in the door.
2. **Hybrid** A gas engine plus a small electric motor and battery. The car charges its own battery as you drive and brake. You never plug it in, and it uses much less fuel in town.
3. **Plug-in hybrid** A hybrid with a bigger battery and a plug. Charge it at home and most daily trips run on electricity; the gas engine waits quietly for long drives and winter weekends.
4. **Full electric** No engine at all: a big battery and electric motors. You charge instead of fuelling, and there is no oil, exhaust, or spark plugs to service. Smooth, quiet, and very cheap to run at home.

Good to know: Shoppers call full electric cars EVs or BEVs, and plug-in hybrids PHEVs. Now you can nod wisely at the dealership like you were born knowing it.

Take care: Do not let anyone rush you into a kind before you know your driving pattern. The next five pages match each kind to a real life, maybe yours.

> **A familiar moment:** Margaret, 74, told her grandson she wanted “one of those quiet cars.” He asked, “Quiet like a hybrid, or quiet like an electric?” She laughed: “That is exactly what I need the book for.”

MEET THE LINEUP

Gas Cars: The Familiar Choice

The gas car is not the dinosaur of the story. For many Canadians it remains the sensible, affordable answer, especially where winters are long and chargers are few. Respect the old friend before replacing it.

Fuel anywhere › Lower price › Any mechanic › Long range

1. **Fuel in five minutes** Every town has a station, and a tank takes you 500 kilometres or more. Road trips need no planning at all, which still matters a great deal outside the big cities.
2. **Cheaper to buy** Gas models usually carry the lowest sticker price in the lineup, sometimes by many thousands of dollars. That gap buys a lot of gasoline before an electric car catches up.
3. **Every garage knows them** Your mechanic of 20 years can service a gas car blindfolded. Parts are everywhere, wait times are short, and small towns are never a problem.
4. **The honest costs** You pay at the pump forever, plus oil changes, exhaust work, and more brake jobs than electrified cars need. City driving is where gas cars drink hardest.

Good to know: Modern gas engines are far thriftier than the cars of 2005. A small modern sedan can sip half the fuel of the family wagon you may remember.

Take care: If your driving is mostly short trips in deep winter, a gas engine that never fully warms up wears faster and uses surprising fuel. A hybrid may suit that life better.

> **A familiar moment:** Doug in Red Deer priced an electric SUV, then did the math on his 6,000 kilometres a year. “I would be 94 before it paid back,” he said, and happily bought the gas model.

MEET THE LINEUP

Hybrids: Two Engines, One Job

A hybrid pairs a gas engine with an electric motor, and the two take turns doing what each does best. You drive it exactly like any automatic car. The only difference shows up at the pump.

Start electric › **Cruise together** › **Brake to charge** › **Never plug in**

1. **Electric at low speed** In parking lots and slow traffic, the motor does the work silently. The engine joins in as speed rises, or when you ask for real power on a hill.
2. **Braking refills the battery** When you slow down, the motor becomes a generator and captures energy a normal car throws away as heat. That is why hybrids shine in stop-and-go city driving.
3. **No plug, ever** There is nothing to charge and nothing new to learn. Fill it with gas and drive. For condo dwellers without parking power, this is the electrified car that asks nothing.
4. **Real savings, honestly** Expect roughly a third less fuel in town, sometimes better. On steady highway drives the advantage shrinks, because the gas engine does most of the work there anyway.

Good to know: Hybrid brakes often last far longer than regular brakes, because the motor does much of the slowing. Many owners report pads going past 150,000 kilometres.

Take care: A hybrid still has oil, coolant, and an exhaust to maintain. The savings are real but it is not a maintenance-free car; budget for normal servicing.

> **A familiar moment:** Priya, 69, drives a hybrid taxi-worthy 40,000 kilometres a year in Mississauga. Her fuel receipts dropped so much she accused the gas station of short-changing her. It had not; the car had changed.

MEET THE LINEUP

Plug-In Hybrids: The Bridge Car

A plug-in hybrid is two cars sharing one driveway spot: an electric car for your daily rounds, and a gas car for the cottage, the grandkids, and the long winter highway. It asks one thing in return: a plug.

Charge nightly › Electric errands › Gas for distance › Best of both

1. **Electric for the everyday** Most plug-in hybrids travel roughly 40 to 80 kilometres on a charge. Groceries, bridge club, and the clinic all fit inside that, so weekday gasoline use can drop to nearly zero.
2. **Gas for the long haul** When the battery empties, the car simply becomes a hybrid and keeps going. No charger hunting, no range math, no anxiety on the Trans-Canada in February.
3. **The plug is the price** Unplugged, a plug-in hybrid is a heavy hybrid carrying an empty battery. The magic only happens if charging at home is easy enough that you actually do it most nights.
4. **Two systems to service** You keep an engine to maintain and a battery to charge. Owners who plug in faithfully save a fortune; owners who never plug in bought the wrong car, politely speaking.

Good to know: A plug-in hybrid on a plain household outlet can refill overnight for most drivers, because the battery is much smaller than a full electric car's.

Take care: Check the electric range on the exact trim you are buying; it varies widely between models, and the brochure's biggest number may belong to a different version.

> **A familiar moment:** Henri in Trois-Rivières plugs in every night from habit, like his phone. Last year his gas station visits: four, two of them for the snowblower. “I had to ask where the premium button was,” he says.

Full Electric: Driving on Electrons

A full electric car deletes the engine entirely. What remains is a battery, electric motors, and a driving experience so smooth that many owners describe their old car as “busy.” Here is what changes, and what does not.

Charge at home › Silent starts › Few moving parts › Plan the trips

1. **Fuel comes to you** Charge where the car sleeps and every morning starts full. At home electricity rates, driving costs a fraction of gasoline, often a few dollars per hundred kilometres.
2. **Quiet and quick** Electric motors pull instantly and silently. Merging onto the highway takes no drama, and conversation inside stays at living-room volume, which passengers with hearing aids appreciate.
3. **Far less servicing** No oil, plugs, belts, muffler, or transmission fluid. The service list shrinks to tires, brakes (which last), cabin filters, and the occasional software update.
4. **Range is the trade** Most new EVs travel 350 to 500 kilometres per charge in mild weather, less in deep cold. For daily life that is plenty; for road trips you plan charging stops, which later pages make easy.

Good to know: Electric cars are not golf carts. Many are the quickest cars their makers sell, and all of them heat the cabin without idling an engine in your garage.

Take care: Never charge an electric car inside a closed garage with a damaged cord or outlet, and never use a household extension cord for regular charging. Use proper equipment, covered in the charging section.

> **A familiar moment:** Walter, 81, resisted his daughter's electric car for a year. One silent ride to Canmore changed his review to: “It is like the future tucked its shirt in.” He now asks to take it for milk runs.

MEET THE LINEUP

Which Powertrain Fits Your Life?

Forget the best car. There is only the best match for your kilometres, your parking spot, and your patience. Answer three honest questions and the answer usually walks up and introduces itself.

Count kilometres › Check the plug › Mind the winters › Choose calmly

1. **How far, how often?** Under 40 kilometres most days favours electric or plug-in hybrid. Long daily highway drives favour hybrid or gas. Write down one honest week of driving before you shop.
2. **Where does it sleep?** A driveway or garage with power nearby makes electric easy. Street parking or a condo with no plug makes a regular hybrid the relaxed choice today.
3. **How cold, how far north?** Deep-winter range loss is real but manageable with home charging. Remote routes with sparse chargers still belong to gas and hybrid, and there is no shame in that math.
4. **How long will you keep it?** Keeping a car a decade spreads an electric's higher price over years of cheap running. Trading every three years tilts the math back toward gas and hybrid.

Good to know: There is no wrong answer on this page, only mismatches. A hybrid in the right life beats an electric in the wrong one, every single time.

Take care: Beware advice from anyone who sells only one kind, or who bought one kind and now defends it like a hockey team. Your driveway, your rules.

> **A familiar moment:** Two neighbours on the same Regina street ran the numbers together. One chose electric for her city rounds; the other, a travelling salesman at 73, chose hybrid. Both still wave, smug and correct.

HONEST NUMBERS

Sticker Price Is Only the Start

The price on the windshield is the first chapter, not the book. Smart buyers compare the whole story: five to eight years of fuel, servicing, insurance, and what the car is worth at the end.



1. **The entry ticket** Gas models usually start cheapest, hybrids add a modest premium, plug-ins more, and full electrics often the most, though the gaps shrink every year and incentives can narrow them further.
2. **The weekly drip** Fuel is the cost you feel most. A gas car might burn $60 a week while an electric charges for $10 at home. Multiply by 52, then by your years of ownership.
3. **The quiet costs** Oil changes, brakes, and exhaust work add up on gas cars. Electrics skip most of that but can wear tires faster and cost more to insure in some provinces.
4. **The exit price** What the car is worth when you sell matters as much as what you paid. Popular hybrids and electrics have held value well; obscure models of any kind are harder to sell.

Good to know: Accountants call this total cost of ownership. You can call it the truth. The next pages work it out slowly, with real-style numbers.

Take care: Never compare a bare-bones price of one kind against a loaded price of another. Compare similar sizes and trim levels, or the math lies politely.

> **A familiar moment:** Frank kept a notebook in his glove box for 11 years: every fill, every repair. His “cheap” sedan cost more per year than his wife's pricier hybrid. The notebook settled many supper debates.

HONEST NUMBERS

Fuel and Electricity: Doing the Math

You do not need to love arithmetic; you need two numbers per car: what it burns or uses per 100 kilometres, and what a litre or a kilowatt-hour costs you. The rest is one multiplication.



1. **Gas: litres per 100 km** The window sticker and Natural Resources Canada ratings list it. Say 8.5 litres per 100 km at $1.55 a litre: that is about $13.20 of fuel for every 100 kilometres you drive.
2. **Electric: kilowatt-hours per 100 km** Most EVs use 17 to 22 kWh per 100 km. At a home rate of 12 cents per kWh, that is roughly $2.40 per 100 kilometres, less off-peak where time-of-use rates apply.
3. **Your yearly number** Multiply by your driving. At 15,000 km a year, the examples above give about $2,000 of gasoline versus $360 of home electricity. Your prices will differ; your arithmetic will not.
4. **Charging away costs more** Public fast charging can cost three or four times home rates. It is for road trips, not for weekly life, and the budget works when most charging happens in your own driveway.

Good to know: Natural Resources Canada publishes a free fuel consumption ratings tool online. It compares nearly every new car sold in Canada, in plain tables.

Take care: Brochure range and consumption are measured in gentle laboratory conditions. Add a cushion in winter and at highway speed, whatever the powertrain.

> **A familiar moment:** Elaine, 72, did this math on a napkin at Tim Hortons, twice, because she did not believe it the first time. The napkin is framed now. The electric car arrives in June.

HONEST NUMBERS

Maintenance: Less to Wear Out

An electric motor has a handful of moving parts; a gas engine has hundreds, all hot and rubbing. That difference shows up in your service bills for as long as you own the car.

Count the parts › Skip the oil › Save the brakes › Budget the rest

1. **What electrics delete** No oil changes, spark plugs, timing belts, mufflers, or multi-gear transmissions to service. The scheduled-maintenance booklet for an EV is refreshingly thin compared with a gas car's.
2. **What hybrids keep** A hybrid still has an engine to feed and service, though it works less hard and its brakes last longer. Budget like a frugal gas car, not like an electric.
3. **Brakes that loaf** Regenerative braking does most slowing in hybrids, plug-ins, and electrics, so pads and rotors can last two or three times longer than on a comparable gas car.
4. **What still wears** Tires, wipers, cabin filters, and 12-volt batteries wear on every car. Heavy, quick electrics can be fond of tires; rotate them on schedule and they behave.

Good to know: Many electric cars tell you their own service needs on the dashboard and update themselves overnight by software, like a phone. Recalls for software are often done in your driveway.

Take care: Skipping the dealer does not mean skipping care. Brake fluid, coolant for the battery system, and tire rotations still matter; follow the book that comes with your car.

> **A familiar moment:** George, a retired mechanic in Saskatoon, opened his son's EV hood and stood silent. “Forty years I fixed these,” he said, “and the boy buys a car with nothing to fix.” He checks the tires weekly anyway.

HONEST NUMBERS

Insurance, Tires, and Little Things

The big numbers get the attention, but the little ones sign the cheques too. Insurance, tires, and a dozen small items can tilt a close decision, so let us line them up honestly.



1. **Insurance: ask first** Some electrics cost more to insure because repairs need specialized shops; some hybrids cost less than average. Get quotes on your exact shortlist before you buy, not after.
2. **Tires: the EV tax that is not** Electric cars are heavier and quicker off the line, which can wear tires faster. A set of good tires costs what it costs; driving gently easily doubles their life.
3. **Winter tires for all** Every kind needs winter tires in most of Canada, and some provinces require them by law. Budget one set and rims for any car on your list; the cost is the same for all.
4. **Small stuff adds up** Washer fluid, wipers, key fob batteries, and cabin filters are minor, but a home charger, a panel upgrade, or a second set of charging cables can be real money in year one.

Good to know: Some insurers offer discounts for safety technology like automatic emergency braking, which many new cars of every kind now include.

Take care: A cheap insurance quote on the wrong coverage is no bargain. Compare the same deductibles and options, and tell the insurer your real yearly kilometres.

> **A familiar moment:** Nora priced insurance on three finalists and found a $700 yearly spread between two nearly identical crossovers. “The cars were twins,” she says. “The quotes were strangers.”

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