

AGENDA

Which EV Is Right For Me? – “A” Process, Some Things To Do

Use Scenario

Range

Recommended Safety Features

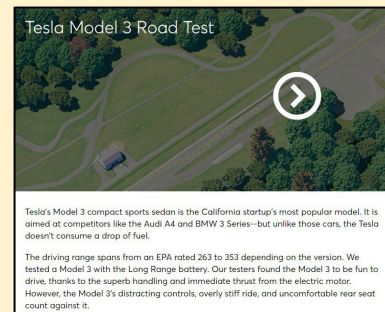
What Features/Functions I Need, would like? And Features I may not like or want

What tools can I use to find about specific vehicles?

How can I test drive an EV before buying

My most often FAQ: *What EV do I like the Best of those I have driven?* 🤖

Let's Chat



2022 Toyota Prius L Eco Specs & Features	
More about the 2022 Prius >	
Most Popular L Eco 4dr Hatchback 1.8L 4cyl gas/electric hybrid CVT	
Starting MSRP \$25,075	
Build & Price	
Overview	
Engine Type	Hybrid
Transmission	Continuously variable-speed automatic
Drive Type	Front wheel drive
Cylinders	Inline 4
Total Seating	5
Basic Warranty	3 yr/ 36,000 mi.

www.fueleconomy.gov			
the official U.S. government source for fuel economy information			
Find a Car Save Money & Fuel Benefits My MPG Advanced Vehicles & Fuels About EPA Ratings More			
You are here: Find a Car Home > Side-by-Side Select > Compare Side-by-Side			
Compare Side-by-Side			
Fuel Economy Energy and Environment Safety Specs			
Personalize Edit Vehicles			
2024 Kia EV9 Long Range AWD GT-Line			
Electric Vehicle			
Automatic (A1)			
MSRP: \$73,900			
EPA Fuel Economy			
1 gallon of gasoline=33.7 kWh			
Show electric charge stations efast.com			
Electricity			
80 MPGe			
combined city/highway			
42 kWh/100 mi			
270 miles Total Range			
Electricity			
130 MPGe			
combined city/highway			
28 kWh/100 mi			
342 miles Total Range			
Electricity			
64 MPGe			
combined city/highway			
3.8 gal/100mi			
38 miles Total Range			
Electricity			
26 MPGe			
combined city/highway			
37 kWh/100mi			
420 miles Total Range			
Electricity			
91 MPGe			
combined city/highway			
27 kWh/100 mi			
230 miles Total Range			
Electricity			

FAQs ABOUT BUYING AN EV

Which EV Type Is Right For Me? ☹️ – “A” Process, Some Things To Do

- **Create a Use Scenario;** particularly if considering a PHEV or BEV:

It is handy to have an idea of how you would drive them so you can make some simple cost calculations about them.

Have Use Scenario that consists of the following:

- The **total annual miles** you drive made up of:
 - ✓ An **estimate of the annual miles you drive “locally”** Monday – Friday, & Weekends; e.g., to/from work/school for 46-50 weeks a year? **For PHEVs**, is it mostly less than its maximum EV miles a day?
 - ✓ An **estimate of the annual miles you drive on long distance trips**; i.e., on vacations and holidays.
For BEVs, its when the trip distance requires charging before getting back home or to a destination.
For HEVs, PHEVs, & BEVs think about where you want to drive on long trips; on Interstates, US & State highways, county roads, and unpaved roads.
- **For PHEVs and BEVs.** Knowing the **kind of residence, you will be parking them at**; i.e., an owned single-family house with or without a garage, a condominium, or a rental apartment house. **The question is can you or can’t you take advantage of Level I or Level II charging where you will reside?**

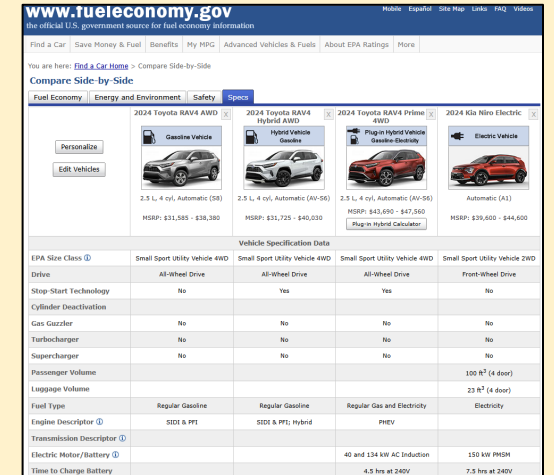
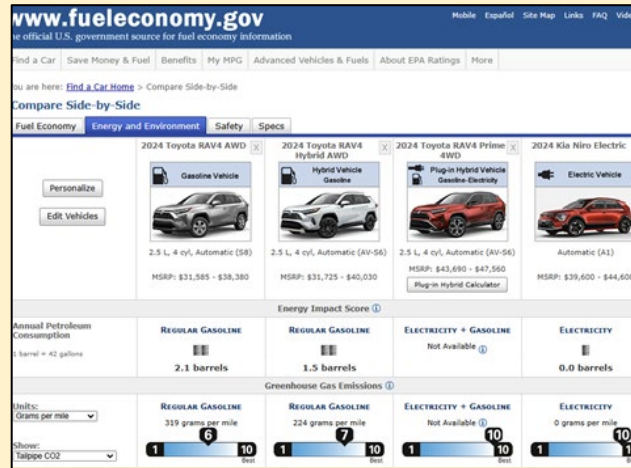
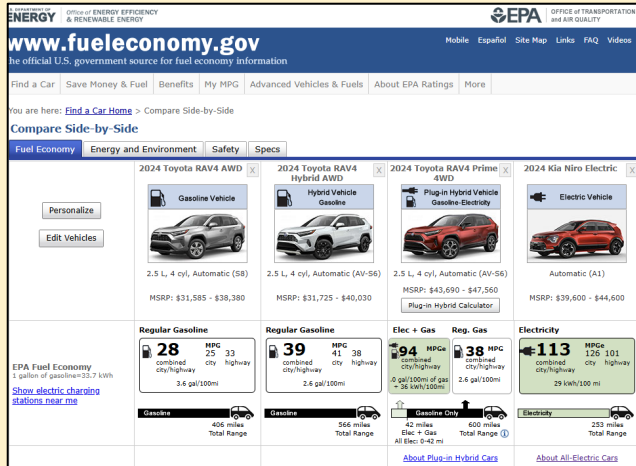
FAQs ABOUT BUYING AN EV

Which EV Type Is Right For Me? ☹️ - A Process, Some things to do

➤ Gather Some Data About The EVs You Would Consider In Light of Your Use Scenario

e.g., From the EPA @ www.fueleconomy.gov, Compare Side By Side Feature

Fuel Economy, Energy and Environment (Tailpipe Emissions), Some Specifications



Use something like a Spreadsheet to Collect and Compare Data, Add Things Like Maintenance & Insurance Costs , Reliability

					
VEHICLE/VEHICLE TYPE	2024 Toyota RAV4 AWD ICE Vehicle (ICEV)	2024 Audi A3 MILD HYBRID EV (MHEV)	2024 Toyota RAV4 Hybrid AWD Hybrid EV (HEV)	2024 Toyota RAV4 Prime AWD Plug-in Hybrid EV (PHEV)	2024 Kia Niro WAVE FWD Battery EV (BEV)
MSRP	\$31,585-\$38,380	\$35,800-\$39,400	\$31,725-\$40,030	\$43,690-\$47,560	\$39,600-\$44,600
Drive Powered By or Assisted By	Internal Combustion Engine (ICE) - 2.5L, 4 cyl, Auto	2.0L, 4 cyl, Turbo, Auto 48V Belt-Integrated-Starter Generator (BISG) Assist	Electric Motor	Electric Motor	Electric Motor Only
External Replenshible Energy Sources	Gasoline Only	Gasoline - 13.2 gallons Electrical Energy - BISG Battery	Gasoline	Gasoline Electrical Energy - Battery	Electrical Energy - Battery Only
Energy Storage	Gas Tank - 14.5 gallons	Gas Tank BISG 48VDC Lithium Ion Battery	Gas Tank - 14.5 gallons Lithium Ion Battery	Gas Tank - 14.5 gallons Lithium Ion Battery	Lithium Ion Battery Only
Efficiency	28 mpg, Regular	32 mpg Regular	39 mpg Regular	38 mpg - Regular gas only 2.8 miles/kWh - Electric Only 42 mile Range on EV Only	3.4 miles/kWh ≈253 EPA 100%-0% SOC **
Reliability	Good	Good	Good	Good [Toyota] Others [Fair due to Complexity]	Good
Maintenance	ICE Vehicle (ICEV) Maintenance ≈ 10¢/mile	ICEV + MHEV Item Maintenance at least ≈ 10¢/mile + ?	ICEV + HEV Item Maintenance at least ≈ 10¢/mile + ?	ICEV + PHEV Item Maintenance at least ≈ 10¢/mile + ?	BEV Item + Vehicle Maintenance ≈ 6¢/mile
"Greenness"	5.3 tons of CO2 annually*** 319 grams per mile	4.6 tons of CO2 annually 279 grams per mile	3.7 tons of CO2 annually 224 grams per mile	1.2 tons of CO2 annually 72 grams per mile	Zero tons of CO2 Annually 0 grams per mile

Which EV Type Is Right For Me? 😐 – A Process, Some Things To Do

➤ Look At Costs of Each Candidate Vehicle over 5 years

- 1-Time Purchase Cost: MSRP + EVSE & Installation
- Variable Costs: Maintenance, Fuel/Energy, and Insurance

➤ Consider doing some simple calculations associated with 5-years of Variable Costs for your candidate cars.

Fuel Costs for ICE, & HEV Simply take Total 5 years miles driven X mpg X cost per gallon

Energy costs for PHEVs and BEVs are driven by Use Scenarios.

PHEVs use gas & electricity and BEVs use electricity at different rates. See my next slide for examples of how to do.

Maintenance Costs. ICE, HEV & PHEV are 10¢/mile; BEV is 6¢/mile. Multiply by total miles driven in 5 years.

With Regard to Total Cost of Owning an EV [BEV]

- According to JD Power: “In 2024, out of 48 EV’s analyzed, 21 were **more affordable to purchase [at 5 years]** and 29 were **more affordable to lease [at three years].**”

And

- According to a Policygenius study relative to EV [BEV] cost of insurance was “...**estimated that electric vehicles cost \$44 more per month** to insure because they are costlier to repair.” [+ are currently more expensive to purchase]

[Source: AAA Via Magazine, Smart Life, *How to make an EV fit your budget*, November-December 2024]

And

- From the Recurrent.Com YouTube video in Class Session #1, EVs; Maint Costs are
 - **ICE vehicles cost 10¢/mile**
 - **BEV cost 6¢/mile**

The Question of Range – What Real World Range Can I Expect From a BEV? cont'd

➤ Check Which BEV candidates have the closest “Real World” Range to Your Current Range cont'd

- HOW? Googling “EV Range Estimates” or “EV Range Estimates for *a specific EV*”
 - You will get a lot of results; however, **the latest “real world” testing is done mostly at 70 mph and 100% SOC to 0% SOC**. See the links below for some of them. Out Of Specs Studios have the largest list of tested EVs. Motor Trend and Car & Driver also have individual EV ranges
 - **To Get an 80%-10% SOC Real World estimated Range, take the 100%-0% multiply it by .7** (80% minus 10%=70%) to get something closer to real world
 - If you wish to adjust it even more, from my experience **when it's HOT here in Arizona and when driven at high speed, multiply by .6**

NOTE: My 16 High Speed, High Temperature Test Drives resulted in an average of .58 of the EPA Estimated Ranges for the 7 EVs driven ≈6,300miles

- Compare **The 80%-10% SOC ranges with your current range. EVs ranges are significantly less.**

HOWEVER, you can see how it actually affects your trip by using either ABRP or PlugShare trip planners to plan out your current range trip and see where there are Level III chargers along that trip route at points you also would have stopped for restroom breaks or food.

You may find that even in today's charging infrastructure there are sufficient chargers along the trip route to support non-anxiety travel.

BTW. Concerned about the charging times adding to trip time, the **latest statistics show that the average stop time when travelling highways is ≈22 minutes**.

Charging times for 10%-80% SOC chargings are now approaching 25 minutes.

Additionally, a recent Survey of EV buyers before and after purchase showed that **before purchasing an EV one of owner's greatest concerns was range, while only a short time after purchasing there was a significant reduction in concern over range. Guess distance between chargers wasn't as big a problem.**

Consumer Reports

<https://www.consumerreports.org/cars/hybrids-evs/real-world-ev-range-tests-models-that-beat-epa-estimates-a1103288135/>

Car And Driver

<https://www.caranddriver.com/features/g32634624/ev-longest-driving-range/>

Edmunds

<https://www.edmunds.com/car-news/electric-car-range-and-consumption-epa-vs-edmunds.html>

CR's Real-World EV Range Tests Show Which Models Beat EPA Estimates

Some cars from Ford, Lucid, and Tesla fell short, while others from BMW and Mercedes exceeded expectations



Out Of Specs Studios

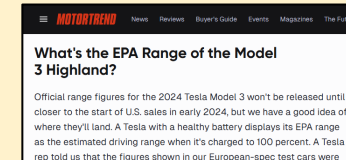
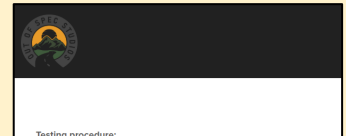
<https://outofspecstudios.com/70-mph-range>

Kelley Blue Book

<https://www.kbb.com/electric-car/longest-range-electric-cars/>

Motor Trend – Model 3 Highland

<https://www.motortrend.com/reviews/2024-tesla-model-3-highland-range-test/>



FAQs ABOUT BUYING AN EV_{contd}

Which EV Type Is Right For Me? 😐 – A Process, Some Things To Do

➤ Check Out Safety Features of the Candidate EVs

Some Highly Recommended Safety Features/Functions.

Selected EV should have the following Active Safety Features in addition to passive airbags.

It's a good idea to **check to see which ones are not included in specific trim lines** [Source: Consumer Reports]

- **FCW ([forward collision warning](#))***: Detects impending collision while traveling forward and alerts driver. Some systems include pedestrian or other object detection.
- **AEB ([automatic emergency braking](#))***: Detects potential collisions while traveling forward, provides forward collision warning and automatically applies the brakes to avoid or lessen the severity of impact. Some systems include pedestrian or other object detection.
- **CAEB (city automatic emergency braking)**: Brakes are automatically applied to prevent a collision or reduce collision severity when traveling at city speed.
- **HAEB (high-speed automatic emergency braking)**: Brakes are automatically applied to reduce collision severity when traveling at highway speeds.
- **PD (pedestrian detection)**: The system can detect pedestrians, then issue a warning and trigger automatic emergency braking, if necessary. Some can detect cyclists.
- **LDW ([lane departure warning](#))***: Monitors vehicle's position within driving lane and alerts driver as the vehicle approaches or crosses lane markers.
- **LKA ([lane keeping assistance](#))***: Assists with steering to maintain vehicle within driving lane.
- **BSW (blind spot warning)**: Detects vehicles to rear in adjacent lanes while driving and alerts the driver to their presence.
- **RCTW ([rear cross traffic warning](#))***: Detects vehicles approaching from the side and rear of vehicle while traveling in Reverse and alerts driver.
- **Rear AEB (rear automatic emergency braking)**: Detects potential collision while traveling in reverse and automatically applies the brakes to avoid or lessen the severity of impact. Some systems include pedestrian or other object detection.
- **LCA (lane-centering assist)**: Continuous active steering to stay in between lanes (active steer, autosteer, etc.)
- **ACC ([adaptive cruise control](#))***: Assists with acceleration and/or braking to maintain a prescribed distance between it and a vehicle in front. Some systems can come to a stop and continue.

*[Hyperlinks](#) are to Consumer Reports articles on the feature.

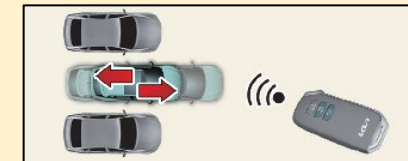
FAQs ABOUT BUYING AN EVcontd

Which EV Type Is Right For Me? 😐 – A Process, Some Things To Do

Some features/functions that I would need, want, like to have in my EV?

Features/Functions Unique to EVs, ones that you can't get in an ICE vehicle 😲

- **Pet & Camp Mode** (Tesla Model 3, Y, S & X). Let's you lock the doors to the car but keep the air conditioning running at a temperature and fan setting you would like for your pet to have while you are not in the car, or that you would like to have while "camping" out in the Tesla with the doors locked.
- **Vehicle to Load (V2L) Power** (Kia EV6s, Hyundai IONIQ 5s, Ford F150 Lightning). For Kia and Hyundai, a V2L adapter plugs into the vehicle's charge port, and supplies 120VAC power from the vehicle to up to 16amps for electric appliances. Several hours of power can be provided from the drive battery.
- **Remote Smart Parking Assist** (Kia EV6 GT-Line, Kia Niro EV). This allows one to use the fob to park or unpark the vehicle into or out of a very tight parking space. The buttons on the fob allow one to straighten out the front wheels, then either have the vehicle slowly move forward or backward.



There are all the other things: size, # of doors, color, "coolness", cost, etc that have their priorities when determining which exact car is the one for you. The above Which is Right for Me? response mainly focuses on the type of EV would meet your needs should you decide on buying an EV.

FAQs ABOUT BUYING AN EV_{contd}

Which EV Is Right For Me? _{contd}

Some Other FAQs

What are some features I really don't need, want, or like? [Source: Consumer Reports, April 2023 Edition]



I have also found what some might consider unneeded add-ons to the MSRP at local Tucson dealerships:

- 6-month after purchase of Lost/Damaged Key protection - \$199
- “Advanced Total Surface Protection” sealant for paint & upholstery - \$1,090
- 7-year Tire & Wheel Protection - \$766
- Dent & Ding Protection - \$399

FAQs ABOUT BUYING AN EVcontd

How Can I Test Drive An EV Before Buying?

For most EVs it is now possible to test drive an EV through the dealership for about an hour. However, I recommend that you test drive an EV for 4-7 days, and charge it up at least once at a Level II and Level III Charger. In order to do so the only way to rent current EVs is via TURO. I have rented all but one EV through TURO.

TURO a peer to peer rental company* <https://turo.com/>

Tucson: (19) Ford Mustang Mach-e; Ford F-150 Lightning, Kia EV 6; Nissan Leaf; Nissan Ariya; Rivian R1S, Tesla Model 3, S, X & Y;



Phoenix (200+) :Tesla Model 3, S, Y,& X; BMW i4, iX, Chevy Bolt; Fiat 500e; Hyundai IONIQ 5; KIA Niro EV, EV 6; **EV9**; Sonata & IONIQ Hybrids & PHEVs; Fiat 500e, Ford Mustang Mach-E, F-150 Lightning; Lucid Air; Mercedes-Benz EQB, EQS; Polestar2; Porsche Taycan; Rivian R1S. R1T truck; Toyota Prius & RAV4 Hybrids; Volvo XC60 & XC90

- * *Peer to peer means that TURO is the agent that arranges for you to rent from an individual or small company.*
- Someone that is willing to rent out it's "personal" vehicle.*
 - TURO has some strict terms & conditions for the one renting out the vehicle AND also for persons renting the vehicle.*
 - The availability of specific year, make, & model, is dependent on when it isn't already being rented out or is being used by the owner.*
 - The location where the car is to be picked up and returned is determined by the owner of the vehicle, and can be negotiated.*
 - The daily rental price is determined by the owner, as is the amount of free mileage provided.*

FAQs ABOUT BUYING AN EV_{contd}

What tools can I use to check out EVs?

On-line Buying Guides, and Reviews

Consumer Reports: Buying Guides, Reviews & Car Buying Service



Hybrid & EV Buying Guide

<https://www.consumerreports.org/cars/hybrids-evs/buying-guide/>

Car Finder/Selector [Requires at least Digital Magazine Subscription/membership]

<https://www.consumerreports.org/car-finder/>

Digital Magazine Subscription – EV Features, Specifications, Road Test Reports, also reports on almost anything you buy - products & services (\$10/mo,\$39/yr)

<https://www.consumerreports.org/cars/>

Very Complete Road Test Reports

Car Buying Service

<https://www.consumerreports.org/cars/car-prices-build-buy-service/>

Edmunds: Buying Guides and Reviews



<https://www.edmunds.com/electric-car/articles/ev-buying-guide>

**One of My Favorite sites,
very complete set of guides
& range data**

Car And Driver: Buying Guides and Reviews



<https://www.caranddriver.com/ev/>

MY MOST OFTEN FAQ 😊: What EV Do I Like Best Of those I have driven?

THE KIA EV6 GT- LINE RWD



YACHT BLUE



CHARCOAL / MISTY GRAY VEGAN SYNTAX SEAT TRIM

2024 EV6

Light RWD

Light Long Range RWD

Light Long Range AWD

Wind RWD

Wind AWD

GT-Line RWD

GT-Line AWD

GT AWD

[Compare Trims](#)

Highlights

Capabilities and Comfort

77.4 kWh Battery w/ up to 310 Miles of EPA-Estimated Range

225 Horsepower & 258 lb.-ft. of Torque

800V System Ultra-Fast DC Charging Capability

GT-Line Body & Interior Styling

Sunroof

19-in Alloy Wheels, Black Finish

Vegan SynTex & Suede Seat Trim

Heated & Ventilated Front Seats

Vehicle-to-Load: Onboard Generator

Towing ready, capable up to 2,300 lbs.

Convenience and Innovation

12.3-inch Dual Panoramic Displays w/ Navigation, Kia Connect & SiriusXM® Satellite Radio

Augmented Reality Head-Up Display

0-60 mph in 3.4 seconds

Wireless Phone Charger

Smart Key w/ Push Button Start & Remote Start

Surround View Monitor

Blind-Spot View Monitor

Remote Smart Parking Assist

Auto-Dimming Rearview Mirror w/ HomeLink® Garage Opener

Kia Drive Wise Driver Assist Technology

Auto Emergency Braking Technology w/ Evasive Steering Assist & Junction Crossing Detection

Blind Spot Detection Technology

Rear Cross-Traffic Collision Avoidance Assist

Lane Keeping & Following Assist Technology

Smart Cruise Control w/ Stop & Go & Machine Learning

Highway Driving Assist 2

Safe Exit Assist

Front & Rear Parking Sensors

Rear Parking Collision Avoidance Assist

MSRP
\$54,575

LET'S CHAT