COMPARING THE COST OF OWNING THE MOST POPULAR VEHICLES IN THE UNITED STATES

Comparison between five of the most popular gasoline powered models in the country and an EV equivalent for purchase

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Atlas Public Policy analyzed the most popular gasoline-powered vehicles sold in 2023 to assess the total cost of ownership (TCO, or how much it costs to purchase and drive a vehicle) compared to similar electric vehicles (EV) available for purchase.[1]

Transportation is generally the second largest expenditure for people after housing, and over 90 percent of American households have at least one car. The findings show that in every case, EVs today can deliver savings to owners compared to a similar gasoline vehicle over a seven-year period—the typical amount of time a driver keeps a newly purchased vehicle. The figures below include the purchase price, fuel, maintenance and repairs, insurance and taxes and fees for each vehicle. The purchase price is reduced by any government incentives and what an owner could get for selling that vehicle in seven years.

Over the past several years, the upfront costs of EVs have decreased significantly while performance and range have increased. In this fact sheet, we show that many EVs available now are more affordable to drive than the most popular conventional vehicles of today. Vehicle electrification is expected to improve affordability for households as technology costs continue to decline, more models become available, and the used market continues to grow.

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[1] Each conventional vehicle selected was the most popular new vehicle of its type registered in the United States in 2023, according to S&P Global. This was based on vehicle make, model, series, and trim as defined by S&P Global. Comparable electric vehicles were chosen based on similar features, size, and utility. Notably, two of the top four new vehicles registered in 2023 were from Tesla, an all-electric manufacturer.

Table 1: Vehicle Comparison Results

Vehicle Type	Internal Combustion Engine		Electric Vehicle		Net Savings with an EV
	Vehicle (Upfront Price)	7-Year TCO	Vehicle (Upfront Price)	7-Year TCO	
Compact Sedan	Toyota Corolla LE ($22,050)	$42,348	Chevrolet Bolt EUV* ($22,550)	$31,768	**$10,581**
Sedan	Toyota Camry SE Nightshade ($28,960)	$44,307	Tesla Model 3 ($38,990)	$44,180	**$127**
Compact SUV	Nissan Rogue SV ($29,700)	$44,209	Volkswagen ID.4 ($31,495)	$37,110	**$7,099**
Mid-Size SUV	Toyota Highlander L ($39,270)	$48,286	Tesla Model Y ($42,490)	$43,925	**$4,361**
Pickup Truck	Ford F-150 XL Supercrew ($43,515)	$50,622	Ford F-150 Lightning* ($42,495)	$47,797	**$2,825**

Vehicles are model year 2024, except those with an asterisk (*), which are model year 2023.

The subsequent pages of this fact sheet show, for each vehicle comparison, the breakdown of the total cost of ownership by category, including:

- **Taxes and Fees**: Estimated for recurring taxes and fees for owning a vehicle. We do not assume these are different between a conventional vehicle and an EV.
- **Insurance**: Estimated cost to insure a vehicle. We do not assume these are different between a conventional vehicle and an EV.
- **Fuel**: Cost to fuel a gasoline vehicle or to recharge an EV. EVs are assumed to charge at home much of the time and in public occasionally.
- **Maintenance & Repairs**: Average cost per mile for standard maintenance and repairs. Costs are expected to be lower for an EV compared to a conventional vehicle though they are expected to increase after the fifth year of ownership for both vehicles.
- **Vehicle Price minus Resale Value (less tax credits and incentives)**: Amount the owner would effectively pay to use the vehicle for a seven-year period if they sold it at the end of that period. This is calculated by subtracting the expected resale value of the vehicle and any purchase tax credits from the original sticker price.

See *Assumptions* for quantitative inputs and explanations of these categories.

Compact Sedan: The EV is much cheaper.

Chevrolet Bolt EUV
Upfront Price: $22,550
TCO: $31,768

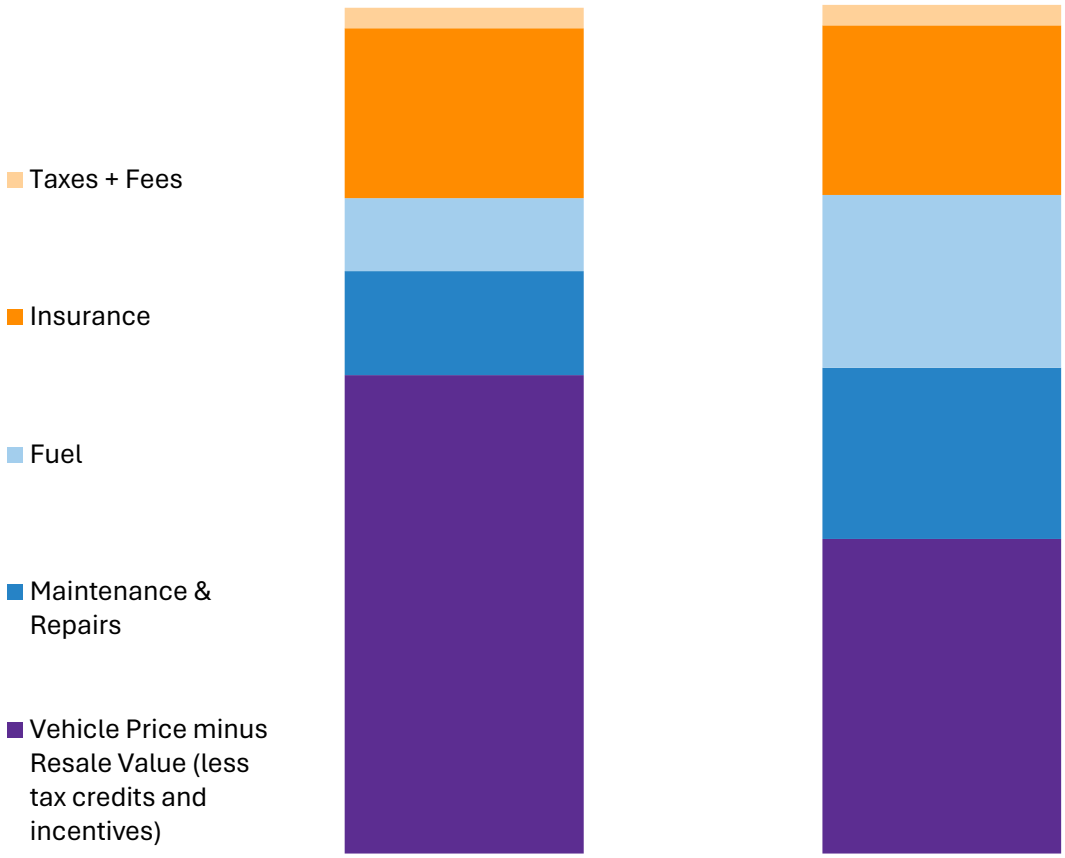
Toyota Corolla LE
Upfront Price: $22,050
TCO: $42,348

Owning the Bolt EUV costs 25 percent less than the very popular Toyota Corolla LE over seven years on a TCO basis. The Bolt has 40 percent or more savings on fuel and maintenance.

Sedan: The EV is slightly cheaper.

Tesla Model 3
Upfront Price: $38,990
TCO: $44,180

Toyota Camry SE Nightshade
Upfront Price: $28,960
TCO: $44,307

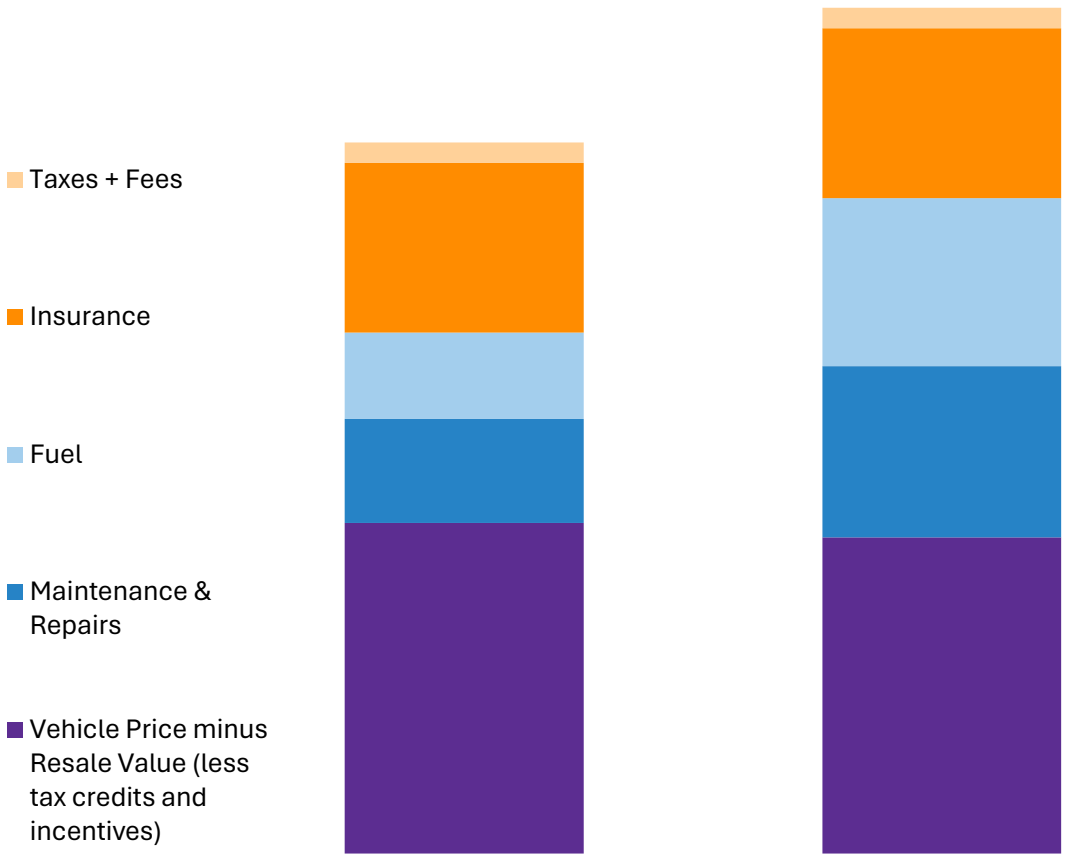


Owning the Model 3 costs less than one percent less than the Toyota Camry over seven years on a TCO basis. If the Model 3 becomes eligible for the federal EV tax credit, it would be cheaper by 17 percent. The Model 3 has 58 percent lower cost for fuel and 39 percent lower cost for maintenance.

Compact SUV: The EV is much cheaper.

Volkswagen ID.4 Pro
Upfront Price: $31,495
TCO: $37,110

Nissan Rogue SV
Upfront Price: $29,700
TCO: $44,209

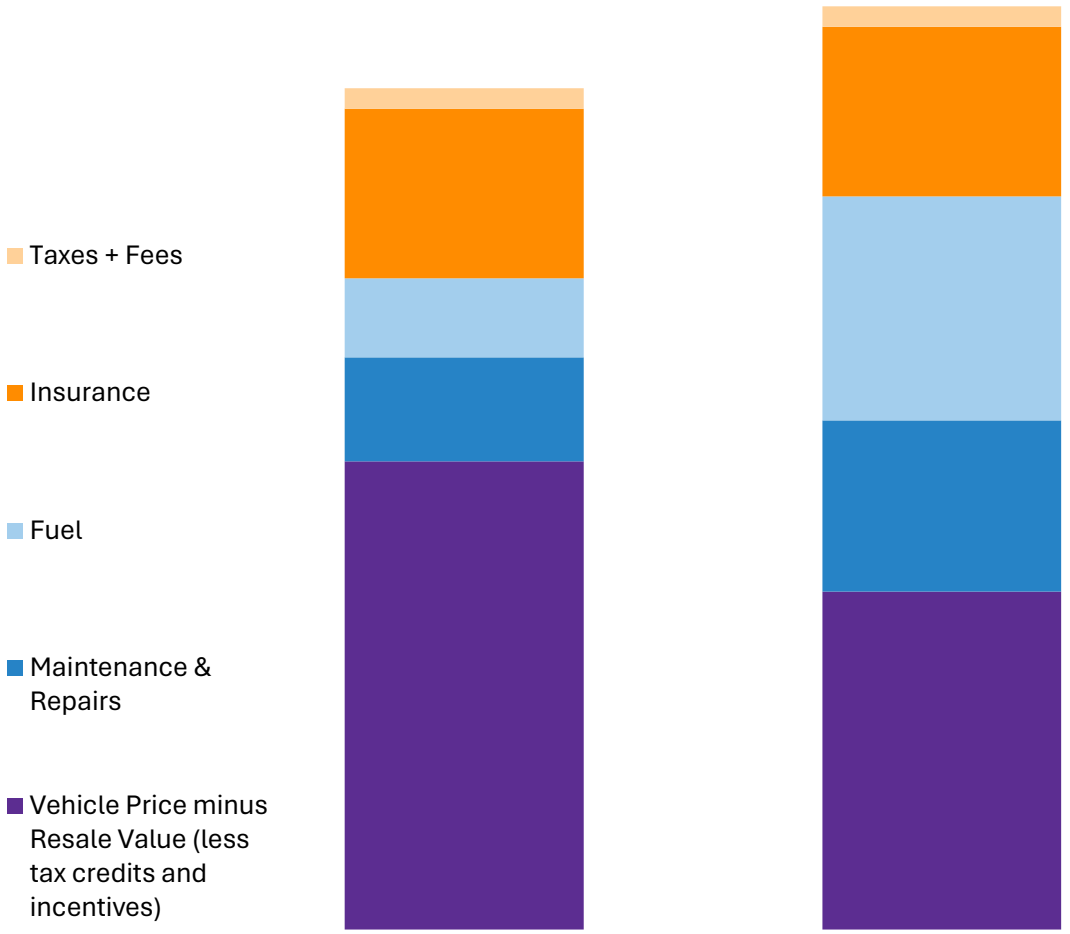


Owning the ID.4 Pro EV costs 16 percent less than the Nissan Rogue SV over seven years on a TCO basis. The ID.4 has nearly 50 percent savings on fuel and 40 percent savings on maintenance.

Mid-Size SUV: The EV is much cheaper.

Tesla Model Y
Upfront Price: $42,490
TCO: $43,925

Toyota Highlander L
Upfront Price: $39,270
TCO: $48,286



Owning the Model Y costs nine percent less than the Toyota Highlander L over seven years on a TCO basis. Fuel for the Model Y costs 65 percent less, and maintenance costs 39 percent less.

Pickup: The EV is cheaper.

Owning the F-150 Lightning costs six percent less than its conventional counterpart over seven years on a TCO basis. The Lightning has a much lower cost on key metrics including a 46 percent savings on fuel and 39 percent savings on maintenance.

Assumptions

This analysis was carried out with the Fleet Procurement Analysis Tool using the default inputs to version 1.32 with the following exceptions:

- Each conventional vehicle selected was the most popular new vehicle of its type registered in the United States in 2023, according to S&P Global. Comparable electric vehicles were chosen based on similar features, size, and utility.
- Current vehicle prices were selected using the base manufacturer's suggested retail price (MSRP), as well as fuel economy in miles per gallon and miles per gallon-equivalent (MPGe) from fueleconomy.gov, except for the Ford F-150 Lightning's MSRP which was sourced from Ford.com.
- Financial incentives were determined via the Federal Tax Credit tracker on the fueleconomy.gov website. The existing $7,500 federal tax credit for qualified electric vehicles was used for all EVs except the Tesla Model 3, which does not qualify for purchases made from January 1, 2024 through December 31, 2024.
- Home charging was assumed to be 88 percent, which was derived from the average daily charging demand from a National Renewable Energy Laboratory report.
- Public charging costs were assumed to be the average nationwide Electrify America charging prices.
- Residential electricity prices and gasoline prices and were based on the average retail price for 2023 from U.S. Energy Information Administration.
- Expected years of use for each vehicle were assumed to be seven years.
- Vehicles were estimated to travel an average of 10,917 miles driven per year according to the Federal Highway Administration.
- No charging equipment costs were factored into the calculation.
- No climate costs or benefits were factored into the analysis.

Cost Per Mile Results

The figures in this fact sheet show the cost per mile of each vehicle by several categories considering energy and other inflation. The table below provides the underlying data for each figure.

Vehicle Name	Category	Cost ($/mile)
2024 Toyota Corolla LE	Vehicle Price minus Resale Value (less tax credits and incentives)	$0.200
	Fuel	$0.107
	Maintenance & Repairs	$0.117
	Insurance	$0.116
	Taxes & Fees	$0.014
2023 Chevrolet Bolt EUV	Vehicle Price minus Resale Value (less tax credits and incentives)	$0.157
	Fuel	$0.058
	Maintenance & Repairs	$0.071
	Insurance	$0.116
	Taxes & Fees	$0.014
2024 Nissan Rogue SV	Vehicle Price minus Resale Value (less tax credits and incentives)	$0.216
	Fuel	$0.115
	Maintenance & Repairs	$0.117
	Insurance	$0.116
	Taxes & Fees	$0.014
2024 Volkswagen ID.4 Pro	Vehicle Price minus Resale Value (less tax credits and incentives)	$0.226
	Fuel	$0.059
	Maintenance & Repairs	$0.071
	Insurance	$0.116
	Taxes & Fees	$0.014

Vehicle Name	Category	Cost ($/mile)
2024 Toyota Highlander L	Vehicle Price minus Resale Value (less tax credits and incentives)	$0.231
	Fuel	$0.153
	Maintenance & Repairs	$0.117
	Insurance	$0.116
	Taxes & Fees	$0.014
2024 Tesla Model Y	Vehicle Price minus Resale Value (less tax credits and incentives)	$0.320
	Fuel	$0.054
	Maintenance & Repairs	$0.071
	Insurance	$0.116
	Taxes & Fees	$0.014
2024 Ford F-150 XL Supercrew	Vehicle Price minus Resale Value (less tax credits and incentives)	$0.238
	Fuel	$0.178
	Maintenance & Repairs	$0.117
	Insurance	$0.116
	Taxes & Fees	$0.014
2023 Ford F-150 Lightning	Vehicle Price minus Resale Value (less tax credits and incentives)	$0.328
	Fuel	$0.097
	Maintenance & Repairs	$0.071
	Insurance	$0.116
	Taxes & Fees	$0.014
2024 Toyota Camry SE Nightshade	Vehicle Price minus Resale Value (less tax credits and incentives)	$0.215
	Fuel	$0.118
	Maintenance & Repairs	$0.117

Vehicle Name	Category	Cost ($/mile)
	Insurance	$0.116
	Taxes & Fees	$0.014
2024 Tesla Model 3	Vehicle Price minus Resale Value (less tax credits and incentives)	$0.327
	Fuel	$0.050
	Maintenance & Repairs	$0.071
	Insurance	$0.116
	Taxes & Fees	$0.014