

It is cheaper to drive a mile on electricity than it is to drive a mile on gasoline. Though your electricity costs will go up if you're charging your electric vehicle (EV) at home, your gas costs will decrease more. We've done some math to demonstrate cost savings and found that **the average Virginian saves 5.26 cents per mile** by choosing to buy an all-electric car instead of a gas-powered car. That translates to **\$814 per year** or \$68 per month. But the more you drive, the more you'll save.

EVs are particularly advantageous for the budget-conscious because the price of gasoline is volatile and electricity prices remain relatively stable. During the economic slowdown starting in March, gas prices fell by. **Our estimates show that even with record-low gas prices, EVs still deliver on cost savings.** With a generally fixed rate for electricity, EV drivers can plan on sticking to their budget for fuel for long-term, reliable savings.

Considered another way, a gas-powered car would have to get more than 62 miles per gallon in order to beat the cost savings of an electric vehicle... but the gas-powered car would still emit twice as much carbon dioxide and be vulnerable to fluctuating gas prices in the future.

Saving 6.48¢/mile

How much does it cost to drive a mile on electricity?

The average new all-electric car available through the Drive Green program requires about [0.29 kilowatt-hours \(kWh\) per mile driven](#). In Virginia, one kWh costs about \$0.12 (including generation, transmission, and distribution).

$$\frac{0.29 \text{ kWh}}{\text{mile}} \times \frac{\$0.1211}{\text{kWh}} = \$0.035/\text{mile} = \text{cost to drive one mile on electricity}$$

How much does it cost to drive a mile on gasoline?

The average fuel efficiency for new vehicles sold in the United States is [25.1 miles per gallon](#). The average retail gasoline price for all fuel grades in the lower Atlantic region in the last year as of 7/15/2020 was [\\$2.20 per gallon](#).

$$\frac{\text{gallon}}{25.1 \text{ miles}} \times \frac{\$2.20}{\text{gallon}} = \$0.0876/\text{mile} = \text{cost to drive one mile on gas}$$

How much do I save by switching from a gasoline-powered car to an all-electric car?

It costs 8.76¢/mile to drive a gas-powered car and 3.5¢/mile to drive an all-electric car, so switching to an all-electric car saves the average Virginia driver 5.26¢/mile, *not* including savings from maintenance (which can be as much as [3 ¢/mile](#))

You can learn more at electrifyyourrideva.org.

Saving \$814/year or \$68/month

The average licensed driver drives [15,484 miles per year](#) in Virginia. Since switching from a gas-powered car to an all-electric saves the average Virginia consumer 5.26¢/mile, those savings amount to **\$814.46/year** or **\$67.81/month**. But if you drive more, you'll save more.

How many miles per gallon would a new gas-powered car have to get to be cheaper per mile than the average new electric car?

Assuming a gas price of [\\$2.20/gallon](#), a car would need to get over 40 miles per gallon to be cheaper to fuel than an all-electric car.

a car would have to get over **62 miles per gallon** in order to compete with the cost savings of an electric car. That's three times as efficient as the average car.

$$\frac{\$2.20}{\text{gallon}} \times \frac{1 \text{ mile}}{\$0.035} = 62 \text{ MPG}$$

(Cost of a gallon of gas / cost of a mile on electricity = MPG required for a gas-powered car to be more cost-effective than an EV)