

Greetings, .

Please see the below comparison for Electric cars vs Gasoline cars. I have also attached a news link for your to review:

<https://www.brookhaviga.gov/sustainablebrookhaven/page/brookhaven-moves-forward-cost-savings-conversion-electrichybrid-fleet>

<https://wgxa.tv/news/local/fort-valley-police-department-leads-the-charge-with-new-electric-vehicles-in-middle-georgia>

<https://www.politico.com/news/2024/07/29/california-pasadena-electric-police-car-00171486>

https://www.southpasadenaca.gov/files/assets/public/v/1/public-works/documents/fact-sheets_sopas_press-conference_july-29_first-electric-police-fleet_resized.pdf

This comparison does not include the cost to install charging stations. The estimated cost is per station 7k-9k. Each station can charge 2 vehicles. These charging stations can charge a depleted battery to 80% in 20 minutes.

Comparing the cost savings between electric police cars and gasoline police cars involves evaluating various factors such as fuel costs, maintenance expenses, and potential incentives. Here's a general breakdown:

Initial Purchase Price

- Electric Police Cars: (Ford Mach E \$49k-60K), Currently offering up to \$7,500 tax credit per unit.
- Gasoline Police Cars: (Ford Interceptor \$46k-49K)

Fuel Costs

- Electric Police Cars:

Charging Costs: Electric vehicles (EVs) are cheaper to fuel. According to the U.S. Department of Energy, the cost of electricity is typically less than gasoline on a per-mile basis. For example, if electricity costs 13 cents per kWh and an EV uses 30 kWh per 100 miles, the cost per mile is around 3.9 cents.

- Gasoline Police Cars:**

Fuel Costs: Gasoline is more expensive. Assuming a gasoline price of \$3.50 per gallon and a fuel economy of 20 miles per gallon, the cost per mile is 17.5 cents.

Maintenance Costs

- Electric Police Cars:

Maintenance: Generally lower. EVs have fewer moving parts and don't require oil changes. Maintenance mainly involves tires, brakes, and occasional checks of the battery and electric motor. The absence of an internal combustion engine reduces the likelihood of certain types of repairs. Brake repairs are drastically cut down due to the electric motors stopping the vehicle.

- Gasoline Police Cars:**

Maintenance: Higher. Gasoline vehicles require regular oil changes, exhaust system repairs, and other maintenance tasks associated with internal combustion engines. An oil change ranges to approximately \$30-50 every 2/3 months.

Longevity and Resale Value

- Electric Police Cars:

Longevity: EVs can have high longevity, but battery degradation over time might affect their performance. However, battery technology is improving, and many manufacturers offer warranties on batteries. The warranty on the Ford Mach E is 8 year/100K miles.

- Gasoline Police Cars:

Longevity: Traditional engines might be more familiar to mechanics and generally have a longer history of reliability. However, higher wear and tear might result in increased maintenance costs over time.

- Total Cost of Ownership Over Time
- When you combine all these factors, electric police cars can often prove to be more economical in the long run despite the higher initial purchase price. The key savings areas are lower fuel costs and reduced maintenance expenses.

Example Calculation

Let's assume a police car drives 20,000 miles per year:

****Electric Vehicle:****

- Fuel Cost: $20,000 \text{ miles} \times \$0.039/\text{mile} = \$780$ per year
- Maintenance: Approx. \$200 per year

****Gasoline Vehicle:****

- Fuel Cost: $20,000 \text{ miles} \times \$0.175/\text{mile} = \$3,500$ per year
- Maintenance: Approx. \$800 per year

****Annual Savings with EV:****

- Fuel Savings: $\$3,500 - \$780 = \$2,720$
- Maintenance Savings: $\$800 - \$200 = \$600$

****Total Annual Savings:****

- $\$2,720 \text{ (fuel)} + \$600 \text{ (maintenance)} = \$3,320$

Thus, over a year, the total savings with an electric police car could be around \$3,220 compared to a gasoline police car. Over several years, these savings can accumulate significantly, making the electric vehicle more cost-effective in the long term.

Keep in mind that specific numbers can vary based on vehicle models, local fuel prices, maintenance practices, and available incentives.