

# 2020 Kia Niro EV

Purchased early July 2020.

Currently has a bit over 12,500 miles.

## Costs

### Maintenance costs

Total costs: \$58 for two annual checks, with tire rotation.

### Energy costs

- Average energy consumption is 3.9 miles/kWh, which EPA equates to 131 MPGe (miles per gallon energy equivalent).
- Charged at home with 220V line: 49 times.
- Charged every 17 days on average.
- Est kW used, 2697.6, assuming 75% efficiency in charging.
- Range with 100% charge has varied between 236 and 329. (EPA list predicted range is 239 miles.)
- Approx total cost of electrical power: \$351.
- Away-from-home charges \$67.85 (three 1,200-mile round trips).
- Energy costs for 12,000+ miles approx \$419; approx 3-1/2¢/mile.
- With maintenance costs, operating cost/mile is approx 3.8¢.

### Intangible benefits

- Much nicer to drive (smooth, powerful, responsive, quiet).
- Don't know the price of gas.

# EV or DDB (dead dinosaur burner)<sup>1</sup>

Energy efficiency	<ul style="list-style-type: none"> <li>• Clear advantage: no engine to heat up (ICE engines need to reach and keep a hot temperature for efficient combustion)</li> <li>• Typically, about 85% of ICE engine's fuel energy never reaches the road, as opposed to EV, where about 75% <b>does</b> reach the road</li> </ul>
Pollution	Any energy source has the potential to pollute; however, electricity can be generated from the sun, from wind, and from other renewable resources. Many EV owners charge their cars from home-based solar panels.
Driving experience	<ul style="list-style-type: none"> <li>• Electric motors don't have to idle.</li> <li>• Electric motors produce torque instantly; an ICE engine and transmission have several things to do before they can provide power.</li> <li>• Acceleration in an EV can be surprising. There are many models that can go 0-60 in under 4 minutes; a few can do it in under 3 minutes.</li> </ul>
Design flexibility	In a DDB, mechanical links are required from engine to wheels. In an EV, designers have lots of options for placing batteries and motors.
Noise (outside)	EVs are so quiet that federal law requires them to make some sounds when going backwards, or when going forward under about 25 mph. Side note: reportedly, one US auto-maker is bringing out some cars that have speakers to produce an engine roar. <a href="https://www.motortrend.com/news/dodge-electric-muscle-car-noise-sound/">https://www.motortrend.com/news/dodge-electric-muscle-car-noise-sound/</a> <a href="https://www.youtube.com/watch?v=HvZ68P3xfg">https://www.youtube.com/watch?v=HvZ68P3xfg</a>
Noise (inside)	Without the sounds of an ICE drive train, it's very quiet inside the car. It's much more relaxing on a long trip without the constant engine noise we're all accustomed to.
Maintenance	Most of a DDB's maintenance costs are for engine and transmission issues. Those costs don't exist on an EV.
Battery life	This is something that anti-EV folks love to bring up. <b>If</b> batteries need replacing, it would be expensive, but most EV batteries are designed to have a life expectancy of 150,000 - 200,000 miles. That's far longer than most cars are kept.

<sup>1</sup> This list includes factual content, as well as information and opinions based on user experience.