



STATE OF HAWAII | KA MOKU'ĀINA O HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES | KA 'OIHANA LOIHELU A LAWELAWE LAULĀ
AUTOMOTIVE MANAGEMENT DIVISION

FUEL COST SAVINGS BEV vs ICE

Home Charging vs Gasoline

Energy Use

- i) EV consumes 12.5 – 15 kWh for 50 miles

HECO Residential Rate

- i) Average: \$0.40 – \$0.43 per kWh

Cost Calculation

- i) Low estimate:

$$12.5 \text{ kWh} \times \$0.40 = \$5.00$$

$$12.5 \text{ kWh} \times \$0.43 = \$5.38$$

- ii) High estimate:

$$15 \text{ kWh} \times \$0.40 = \$6.00$$

$$15 \text{ kWh} \times \$0.43 = \$6.45$$

Cost to Drive 50 Miles (O'ahu, Residential Rate)

- i) \$5.00 – \$6.45 per 50 miles

Gasoline Comparison

- i) Gas car: 25 MPG, gas \$4.50/gallon

$$50 \text{ miles} \div 25 \text{ MPG} = 2 \text{ gallons} \times \$4.50 = \$9.00$$

Savings: 28% lower fuel cost per 50 miles

MAINTENANCE COST & RELIABILITY

Annual Miles	Annual Savings	5-Year Savings	10-Year Savings
12,000	\$480	\$2,400	\$4,800
20,000	\$800	\$4,000	\$8,000

Savings based on scheduled (preventative) maintenance & Unscheduled maintenance (repairs & wear failures)

Scheduled Maintenance (Preventative Service)-ICE Vehicles

- i) Fluids and filters
- ii) Engine Tune-Up Components
- iii) Brakes
- iii) Tire rotations, Wheel alignments, and wiper blades

Scheduled Maintenance (Preventative Service)-BEV's

- i) Fluids and filters
- ii) Tire rotations, wheel alignments, and wiper blades
- iii) Brakes

Key difference, BEV's eliminate

- i) Engine oil systems
- ii) Fuel systems
- iii) Multi-speed transmissions
- iii) Exhaust/ emissions systems

Reliability

J.D. Power and Consumer Reports show

- i) EVs tend to rank higher in reliability for drivetrain and overall components.
- ii) ICE vehicles may have lower initial reliability for new models due to engine/transmission issues.