

Electric Vehicle Incentives: A Powerful Investment

EVs currently have a higher up-front price tag than traditional gasoline-powered vehicles, but over the life of the vehicle, EVs cost less to operate and maintain than gasoline-powered vehicles. In addition, they provide thousands of dollars of benefits to people who don't own or drive an EV.

Economic Development Benefits¹ \$3,172

- Every day, nearly \$833 million is spent on motor vehicle fuels in the U.S. That's over **\$304 billion** a year!² About 80% of the cost of every gallon of gas immediately leaves the local economy.³
- Electric Vehicles (EVs) cost much less to operate than conventional vehicles. Powering a vehicle with electricity will save a driver thousands of dollars in fuel costs each year. This money stays in households and can be used for consumer spending like eating out, groceries, home improvements, and entertainment. This generates local tax revenue, creates local jobs and support local economies.

Environmental Benefits⁴ \$927

- Transportation is the leading cause of greenhouse gas emissions in the United States.⁵
- Climate change damages from carbon emissions include reduced agricultural yields, health impacts in cities due to heat, and flooding and erosion in coastal areas.⁶
- As electricity generation continues to become cleaner (CO2 emissions have declined 28% since 2005) this value will continue to increase.⁷

Health Benefits⁸ \$1,118

- According to the Environmental Protection Agency (EPA): cars, buses, planes, trucks and trains account for more than half of all the air pollution in the United States. The primary mobile source of air pollution is the automobile.⁹
- Exposure to on-road pollution leads to health impacts including heart attacks, strokes, and asthma attacks resulting in ER visits, hospitalization, and premature death.¹⁰

Energy Security Benefits¹¹ \$2,244

- Dependence on imported fossil fuels for transportation results in significant risk and costs associated with fuel security and national security.¹²
- Combining market volatility costs and national security costs for imported oil use, we calculated that every EV on the road will save \$2,244 in energy security and national security costs.

Electric System Benefits¹³ \$1,867

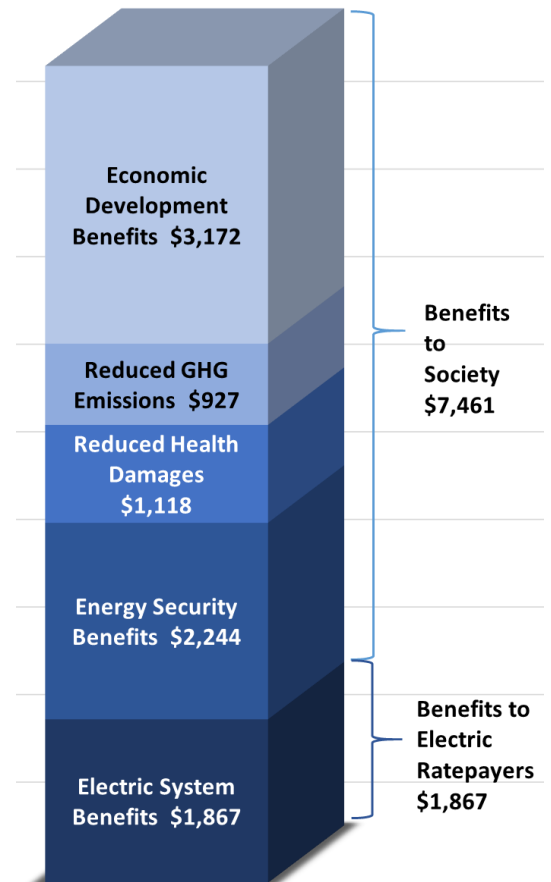
- When thoughtfully integrated with the electric grid, EVs can store electricity which can create a more resilient and efficient electric system.
- Increasing grid efficiency can put downward pressure on electric rates, which can save all customers money, even those on electric bills.

These Benefits Add Up \$9,328

Each EV in the U.S. will contribute over \$9,000 in societal benefits. The EV owner creates these benefits by driving an EV **but does not receive monetary compensation for these benefits.** Turning these benefits into EV incentives can save states money in the long run while helping it meet important policy goals.

Funding point-of-sale rebates for EVs will help improve public health, meet climate change goals, grow the economy, and promote energy security.

Full Study can be found here: <https://evadc.org/EVInfo>



Cumulative Benefits from each EV
\$9,328
(over 8-year life of vehicle)



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- ¹ Based on driving 12,000 miles a year with 30 mpg fuel efficiency and paying \$2.95 per gallon of gas (10-year U.S. average) compared with a comparable EV driving the same mileage with 27kWh/100mile efficiency and electricity costs of 12 cents/kWh (10 year U.S. average). Over 8 years of driving vehicle.
- ² Based on motor fuel gallons sold FY 2019: <https://www.eia.gov/tools/faqs/faq.php?id=23&t=10>
Multiplied by the average U.S. gas price for 11/29/20. <https://gasprices.aaa.com/>
- ³ <https://www.eia.gov/petroleum/gasdiesel/>
- ⁴ Calculated using the inflation-adjusted Social Cost of Carbon (\$53.34 per metric ton) multiplied by the tons of carbon equivalent emitted from driving a conventional gasoline vehicle vs. the carbon emitted from electricity generation for driving an EV.
- ⁵ <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions>
- ⁶ <https://climate.nasa.gov/effects/#:~:text=Increased%20heat%2C%20drought%20and%20insect,coastal%20areas%20are%20additional%20concerns.>
- ⁷ <https://www.eia.gov/todayinenergy/detail.php?id=37392#>
- ⁸ Based on values in *National Academies Hidden Costs of Energy* cost per ton damages and multiplied by emissions from average vehicle emissions rates and eGRID emissions factors for U.S. electricity generation.
- ⁹ <https://www.nps.gov/subjects/air/sources.htm#:~:text=Mobile%2C%20stationary%2C%20area%2C%20and,to%20the%20Environmental%20Protection%20Agency.>
- ¹⁰ <https://gispub.epa.gov/air/trendsreport/2018/#effects>
- ¹¹ Based on cost per barrel of oil energy security from <https://19january2017snapshot.epa.gov/sites/production/files/2015-08/documents/ornl-tm-2007-028.pdf> multiplied by imported barrels of oil added to mileage values for military costs of defending global oils supply: . <http://secureenergy.org/wp-content/uploads/2020/03/Military-Cost-of-Defending-the-Global-Oil-Supply.-Sep.-18.-2018.pdf>.
- ¹² Securing America’s Energy Future. 2018. The Military Cost of Defending the Global Oil Supply. <http://secureenergy.org/wp-content/uploads/2020/03/Military-Cost-of-Defending-the-Global-Oil-Supply.-Sep.-18.-2018.pdf>
- ¹³ Based on an average value of ratepayer benefits in the current regulatory and technological environment from the following studies:
<https://rmi.org/wp-content/uploads/2017/10/RMI-From-Gas-To-Grid.pdf>
http://www.b-e-f.org/wp-content/uploads/2020/06/BEF_EV-cost-benefit-study_2020.pdf
- Benefit-Cost Analysis of Electric Vehicle Deployment in New York State Final Report | Report Number 19-07 | February 2019