

EVs Need to Pay Their Fair Share: A Proper Road Use Fee for Electric Vehicles

Jim Lazar and Raphael Breit

Introduction

Electric vehicles (EVs) need to pay their fair share of road construction and maintenance costs. But by targeting EV owners with inequitable and inefficient fees, state legislatures continue to miss the opportunity to solve the challenge of responsibly funding highways. In the United States, highway construction and maintenance are primarily funded through taxes on gasoline and diesel fuel, known commonly as the “gas tax.” But current taxation revenues do not meet needed funding levels in many states.

In response, more than 30 states have sought to make up for the shortfall by imposing large registration fees for electric vehicles. But there aren’t enough EVs to bridge the gap, and larger fees risk stifling electric vehicle adoption. In this paper, we look at a better solution that would ensure that electric vehicle owners pay their fair share towards highway maintenance without being singled out by unnecessarily expensive registration fees.

Gas tax revenues have declined in real terms over the years due to increased fuel efficiency and a failure to increase the tax alongside inflation — the gas tax has not been increased at the federal level in 30 years. This has created a significant gap between tax revenues and the funding needed for roadway construction and maintenance.¹ Many states have targeted EVs as a way to increase revenue, since EV owners don’t pay the gas tax on their fuel purchases. Some states argue that EV owners use the roads and should pay their fair share towards highway construction and maintenance.

¹ Plug In America. (2020, August). *Transportation funding and EV fees*. https://pluginamerica.org/wp-content/uploads/2022/05/PIA-EV-Fees-white-paper_August2020-1.pdf

In addition to the traditional vehicle registration fees that every driver pays, to date, 33 states have imposed an annual registration fee on EV owners, largely ranging from \$50 to \$200. Texas has just passed a law that imposes a \$400 fee on new EV owners, dropping to \$200 annually thereafter (see below). Two states, Oregon and Utah, allow EV drivers to opt into their road usage charge program in lieu of paying the registration fee.² Four states, California, Georgia, Indiana, and Michigan, have instituted mechanisms to adjust the fee over time, either based on the motor fuel tax or tied to another mechanism;³ the rest do not. And all but one of these fees is a flat annual fee, which does not consider the ways roadway costs are incurred. Vehicle size, weight, and mileage driven all affect wear and tear on roadways.

Table 1. EV-specific annual registration fees by state

Fee amount	States
\$200-400	AL, AR, GA, OH, TX, WA, WV, WY
\$100-199	CA, ID, IL, IN, IA, KS, KY, LA, MI, MS, NC, ND, OR, SC, TN, UT, WI
\$50-99	CO, HI, MN, MO, NE, SD, VA
\$110-2250; dependent on vehicle weight	OK

None of these fees will generate enough revenue to fully fund highway repair, because EVs account for a tiny share of the vehicle market. Imposing what amounts to an arbitrary annual registration fee would hinder the adoption of EVs, particularly for those who drive fewer miles per year, but not significantly cover the funding shortfall.⁴

A better solution would be to create a structured fee system so that EV owners pay a fee proportional to their vehicle's impact on the roads. Such a system would avoid unnecessary administrative processes and ensure that EV owners pay their fair share for highway maintenance, but not stifle the continued adoption of electric vehicles.

Who Causes the Costs?

Like all other roadway users, EVs cause roadway costs in proportion to the width of the vehicle (how wide the lanes must be), the weight of the vehicle (how much they stress the pavement) and how much they are driven (number of lanes needed, and roadway

² Igleheart, A. (2023, March 27). *Brief: Special fees on plug-in hybrids and electric vehicles*. National Conference of State Legislatures. <https://www.ncsl.org/energy/special-fees-on-plug-in-hybrid-and-electric-vehicles>

³ Igleheart, 2023.

⁴ Farnsworth, D., & Lazar, J. (2019, February). *Revisiting the gas tax*. Regulatory Assistance Project. <https://www.raonline.org/knowledge-center/revisiting-the-gas-tax/>

congestion). Fuel taxes address all three of these, because wider and heavier vehicles use more fuel, and the more we drive the more fuel we use.

Per-year charges for EVs violate the cost causation principle underlying fuel taxes, because they do not differentiate between light and heavy vehicles, or between those driven a lot versus those driven a little. These also tend to unfairly double tax EVs, because electricity is already subject to general government taxes in many states that gasoline and diesel fuel are not subject to.

The EV Double-Taxation Problem

In most states, electricity sales are subject to state and local taxes.⁵ For example, one of the authors lives in Olympia, Washington, where electricity is subject to a 4% state “public utility tax” and also to a 9% “utility gross revenue tax” imposed by the city. Gasoline and diesel fuel in Washington state are exempt from both of these taxes, and also exempt from state sales taxes, due to a state constitutional provision that requires all excise taxes on “motor vehicle fuels” to be used exclusively for highway purposes. When a per-mile or per-year fee is added to EVs to compensate for the absence of a motor vehicle fuel tax, no credit is given for the fact that EVs pay *other* state and local taxes on their “fuel.”

A Simple Solution: A Gas-Equivalent Road Usage Fee

A solution to this challenge has three parts:

- a) An annual registration fee based on the weight class of the vehicle and the average annual miles historically driven by **that make and model of vehicle**.
- b) An opportunity for vehicle owners to “true up” their payments to their actual mileage at annual intervals, by having their odometer reading entered into the licensing database and receive a rebate if the miles driven is less than the miles paid for.
- c) A final true-up at the time the vehicle is sold or scrapped, at which time mileage readings are already taken.

Form of the Road Usage Fee

The road usage fee would be based on the amount per mile that a similar-weight vehicle would pay through the combined state and federal gasoline tax, averaging about 60 cents per gallon. For example, vehicles under 4,000 pounds might pay 2 cents per mile, comparable to what a 30-mpg gasoline vehicle would pay, those weighing 4,000–6,000 pounds would pay 3 cents per mile, comparable to what a 20-mpg vehicle would pay, and

⁵ Farnsworth & Lazar, 2019.

those over 6,000–8,000 pounds would pay 4 cents per mile, comparable to what a 15-mpg vehicle would pay.

The road usage fee would also take into account the estimated number of electric miles the vehicle will be driven. A small-battery 2012 Nissan Leaf might be charged for 6,000 miles, a PHEV Prius Prime might be charged for 4,000 miles, while a long-run Tesla, Mach-E, or Lightning might be charged for 15,000 miles, all based on historical or estimated data for each make and model. The fee for each would be based on the weight class of the vehicle. States collect actual mileage data by vehicle, as does the vehicle repair industry. This data is available, and it can easily be used.

The Periodic True-Up

Customers would pay the estimated mileage each year in their vehicle registration fee. If they drive less than the estimate, they would be able to have their odometer read, and a true-up credit issued at any time during any year, and the credit would then apply towards subsequent year registration fees. With this approach, no separate checks would be issued, which reduces transaction costs.

In annual inspection areas, the true-up could be automatically applied based on the actual mileage recorded, and a charge or credit would be included in the subsequent year's vehicle registration. In non-inspection areas, vehicle owners would have to take the initiative to have their odometers read and a true-up credit applied. It might be assumed that those who owe surcharges would not take that initiative, but their true-up would take place, as explained below, at the time of sale or salvage of the vehicle.

Final True-Up at Time of Sale

Every vehicle has its mileage recorded at the time of sale or salvage. If a charge or credit is due, the amount should be easily ascertained by entry into a web-based tool and become a part of the selling price. It could be applied as a credit or surcharge on the new vehicle registration.

For example, if I sold my low-mileage Tesla, on which I had paid \$600 in road fees through registration, but the true-up showed it should have paid only \$400, the sale price would be increased, and the new vehicle registration and taxes decreased, by \$200. The “buyer” would pay the seller an extra \$200, and then receive an offsetting \$200 discount on the initial registration and taxes. No additional checks need be issued.

Solving the Double Taxation Issue

The road usage fee ensures that road usage costs are paid by vehicle owners, in proportion to how much “road” they use. They do **not** address the double-taxation problem of electricity being subjected to general government taxes from which gasoline and diesel fuel users are exempt.

The simple solution to the double-taxation issue is to calculate (based on the miles driven by EVs of different classes) how much electricity tax is generated by EVs, and administratively transfer that (via the tax collecting agency) from the current recipients to the appropriate highway fund. That amount should be taken into account when establishing the per-mile fee to be collected at the time of vehicle registration. The sum of the electricity taxes and the per-mile fee should equal the amount paid in road taxes by an equivalent size and weight gasoline or diesel vehicle.

For example, in Washington this tax amounts to about a penny per kilowatt-hour. For the smallest class of EVs, which get about 4 miles per kWh, the per-mile fee should be reduced by one-fourth of a cent; in the illustration above, if 2 cents per kWh was a “gasoline-equivalent” fee for the weight class, then the annual fee should be based on 1.75 cents per mile, with the balance being collected in electricity taxes and remitted to the highway fund.

With gas tax revenues short of needed funding for highway maintenance, states are looking for ways to make up the shortfall. Since EV owners do not pay any gas tax, it is reasonable for them to pay in some other fashion. But a poorly designed EV fee structure risks overburdening owners and stifling EV adoption through excessive registration fees and double taxation.

An annual gas equivalent road usage fee is a better approach than a fixed annual fee that is equal for all EVs. EV owners would pay towards highway maintenance in proportion to their impact on the roads, and the fee could be easily assessed at an annual inspection or at the time of sale or salvage. Adopting this fee would ensure that EV owners pay their fair share towards highway maintenance without producing a roadblock to cleaner and more efficient transportation.



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Belgium · China · Germany · India · United States

50 State Street, Suite 3
Montpelier, Vermont 05602
USA

+1 802-223-8199
info@raponline.org
raponline.org

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