# **How do electric vehicle owners benefit by paying a road usage charge?**

**EVs spend more on vehicle repair caused by rough roads than they pay in road usage charges.**

Based on [average annual miles traveled](http://faculty.haas.berkeley.edu/ldavis/Davis%20AEL%202019.pdf) (6,300 miles), electric vehicles pay about $113 per year in road usage charges in Oregon ($0.018 per mile). The same vehicles are currently paying an estimated $380 a year for repairs and maintenance caused by bad roads. If all electric vehicle owners paid a road usage charge, funding for road maintenance would increase, and vehicle costs related to bad roads could be reduced.

In [Rough Roads Ahead 2: Economic Implications of Deteriorating Highway Conditions](https://www.oregon.gov/ODOT/Planning/Documents/Rough-Roads-Ahead-2.pdf), the authors note that, “[v]ehicle operating costs rise as the pavement surface becomes rougher: fuel efficiency declines, tire wear and repair costs rise.” [A previous report](https://www.oregon.gov/ODOT/Planning/Documents/Rough-Roads-Ahead-1.pdf) noted that when a vehicle is operated on rough pavement, the resulting repair and maintenance adds an estimated $380 a year to the cost of operating that vehicle.

Rough roads decrease fuel efficiency, wear out tires more quickly and require more repairs such as alignments. For electric vehicle owners, their contribution to highway maintenance through payment of a road usage charge is less than their cost of wear-and-tear caused by rough roads.

**Bad roads are bad for everyone, including EV drivers.**

Before 2015, households spent about 17% of their after tax income on transportation, according to the 2015 Consumer Expenditures Survey (see p. 36 of [Rough Roads Ahead 2](https://www.oregon.gov/ODOT/Planning/Documents/Rough-Roads-Ahead-2.pdf)). About one-third of those expenditures are for vehicle operating costs associated with fuel, oil, tires, maintenance, and repairs. As pavement conditions deteriorate, more miles are driven on rough pavement, causing those costs to rise and household budgets to be impacted.

The National Cooperative Highway Research Program ([NCHRP Report 720](http://www.trb.org/Publications/Blurbs/166904.aspx) p. 22) conducted extensive research to estimate the impacts of pavement condition on vehicle operating costs for five vehicle categories: medium car, van, SUV, light truck, and articulated truck. For light vehicles, the report estimates that vehicle operating costs rise 23% when driving on rough pavement compared with smooth pavement.

The Rough Roads Ahead 2 report projects further that “[t]otal annual statewide vehicle operating costs would rise by about 4% if 20% of vehicle miles traveled was driven on rough pavement.” That increase, they estimate, amounts to a statewide vehicle operating expenditure of $300 million a year.

In other words, bad roads are costly for everyone…including electric vehicle owners.

**Road usage charging is not necessarily a deterrent to buying an EV.**

A [National Governors Association report](https://www.nga.org/wp-content/uploads/2020/02/White-Paper-Planning-for-State-Transportation-Revenue-in-a-Coming-Era-of-Electric-Vehicles.pdf) noted that a “nationwide survey by the University of California Institute of Transportation Studies (UC ITS) found that even a $100 annual EV registration fee reduced consumers’ likelihood of purchasing a battery-powered EV by 11%; it reduced their likelihood of purchasing a plug-in hybrid by 18%.” However, in Oregon, an “analysis of new vehicle sales found that consumers were insensitive to registration and title fee changes.” That may be due, in part, to Oregon’s incentives for purchasing either a new or used electric vehicle that offset the higher fees. It’s likely that a road usage charge would be perceived the same way—not a deciding factor for drivers purchasing an electric vehicle in Oregon.

**Road usage charging is more equitable for low-income drivers than increased registration fees.**

Alternative transportation fees—such as some type of registration surcharge or flat fee paid in advance—disproportionately affect lower-income vehicle purchasers because they are paid in a lump sum, up front. Contrast that with fuel taxes, which are paid in small amounts, incrementally. A road usage charge is similar to a fuel tax in that it is also paid incrementally in small amounts.

**Road usage charging can help states combat climate change, while fuel taxes contribute to it.**

Oregon adopted a Statewide Transportation Strategy that focuses on addressing climate change. One of the strategies is “moving from a gas tax to a user fee (a blended vehicle miles traveled and emissions fee) that charges users for the true cost of travel.” Adopting what the plan calls a “’utility” like funding approach, using the state’s road usage charge system, Oregon can levy charges based on: (1) access to transportation infrastructure; (2) roadway usage and airshed and GHG emissions shares; and, (3) peak period use or in congested corridors/areas. Its road charging system allows ODOT to address the problem of climate change instead of contributing to it.

**For climate benefits and fairness, it’s better to implement road charging now than later.**

Every driver, including those with electric vehicles, must pay their fair share for their use of the road. As more vehicles use less fuel, and pay less fuels tax, state DOTs struggle to meet infrastructure needs. A road usage charge program lifts us out of the fossil fuel era and establishes a modern, technology-based foundation for maintaining roads, combatting climate change and assessing drivers fairly for their road use. Road usage charging is a meaningful, thoughtful and fair way to ensure current and future funding, assess congestion pricing fees and airshed access fees, plus other assessments that may be needed to address future demand.

It is far easier to implement such a forward-looking system when there are small numbers of vehicles impacted, and to do so prospectively, than to implement it after electric vehicles become ubiquitous.

\_\_\_\_

*For more information, contact Michelle Godfrey with the OReGO program at the Oregon Department of Transportation:* *michelle.d.godfrey@odot.state.or.us**, (503) 986-3903*