A Zero-Emission Vehicle Registration Fee is Not a Sustainable Funding Source for Maintaining California’s Roadways

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**Issue**

Transportation infrastructure funding is falling short at the federal and state level, in part because the fuel tax mechanism is outdated. The Road Repair and Accountability Act of 2017 (SB1)\(^1\) provides additional revenue for transportation infrastructure improvements by increasing California’s gasoline and diesel taxes, and introducing additional registration fees for vehicles. This includes a new $100 annual fee for zero-emission vehicles (ZEVs) because they do not use gasoline and therefore do not contribute towards the maintenance of California’s roadways. California is now one of 19 states that have assessed fees on Battery-Electric Vehicles (BEVs) or Plug-in Hybrid Electric Vehicles (PHEVs).

To gain a better understanding of the trade-offs and implications of instituting a new fee on ZEVs, the California Legislature requested the Institute of Transportation Studies at UC Davis to make “recommendations on potential methodologies to raise revenue from zero-emission and low-emission vehicle owners to achieve the state’s transportation electrification, clean air, and climate targets established under law while also ensuring those vehicle owners pay their fair share of any costs borne by motorists to fund improvements to the transportation system.” Key findings from this research are presented below with a full report available at: https://www.ucits.org/research-project/assessing-alternatives-to-californias-electric-vehicle-registration-fee/

**Key Research Findings**

**The $100 ZEV registration fee will not raise enough revenue to make up for the growing shortfall in infrastructure funding.** As internal combustion engine vehicles continue to become more fuel efficient, the revenue raised through fuel taxes will continue to fall short of meeting the funding requirements for maintaining California’s transportation infrastructure. The annual fee for ZEVs will help make up for some of this shortfall, but raises less funding per vehicle than the current fuel taxes. The average vehicle in California pays about $180 per year in gasoline taxes, whereas a BEV would pay $100 per year, and an average PHEV would pay $150 per year (i.e., $50 in gasoline taxes plus the $100 fee). If California meets its goal of having 5 million ZEVs on the road by 2030 (all of which pay the $100 annual registration fee) and current projections of fuel efficiency improvements are accurate, then funding for transportation infrastructure will decrease by approximately $500 million per year in 2030.

An annual ZEV registration fee does not abide by a “user pays” principle. A gasoline excise tax applies a fee proportionate to the amount of driving, which translates to a “user pays” for road use. However, an annual registration fee does not abide by this principle, so no matter how much a vehicle uses the road, the same amount is paid towards infrastructure repair and maintenance. Furthermore, a “user pays” model provides an incentive to travel less, which aligns with California’s Vehicle Miles Traveled (VMT) reduction goals.\(^2\)

A ZEV-exclusive Road User Charge is a promising alternative to the $100 annual ZEV registration fee. Table 1 summarizes the performance of several options for raising revenue for infrastructure, including the traditional gasoline tax, an annual ZEV registration fee, a ZEV fuel tax, and a road user charge. Each option is evaluated using the following criteria: revenue potential to meet funding needs/requirements, inflation responsiveness, revenue stability, administrative cost, adherence to the “user pays” principle, and equity considerations. A ZEV-exclusive road charge performs the best across all criteria.

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Table 1: Performance and comparison of alternative transportation infrastructure funding mechanisms.

*Conclusions about equity across income levels are based on the following: most ZEVs are owned by people with higher incomes; gasoline vehicles owned by people with lower incomes tend to have lower fuel efficiency and be driven longer distances.

Further Reading
This policy brief is a summary of the findings from “Assessing Alternatives to California’s Electric Vehicle Registration Fee” report authored by Alan Jenn with the Institute of Transportation Studies at the University of California, Davis. The report can be found here: https://www.ucits.org/research-project/assessing-alternatives-to-californias-electric-vehicle-registration-fee/. For more information about electric vehicle and transportation policies, visit the Policy Institute for Energy, Environment and the Economy (https://policyinstitute.ucdavis.edu/) and the Plug-in Hybrid and Electric Vehicle Center (https://phev.ucdavis.edu/).