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Summary

States are increasingly adopting alternatives to fuel taxes to pay for maintenance and upgrades on roads and bridges. Included in the mix are mileage-based road use fees, taxes on electricity used for electric vehicle (EV) charging, annual charges for EVs and exploration of tolling mechanisms such as congestion pricing, all with an eye toward addressing funding shortfalls caused by rising fuel efficiency and electric vehicle adoption. Mileage-based user fees, or road usage charges, are emerging as a promising approach, charging drivers per mile rather than per gallon of fuel. While implementation challenges exist, such as administration, privacy, and public acceptance, states that combine thoughtful program design with pilot programs and outreach can establish sustainable and equitable alternatives. Collectively, these strategies provide a diversified toolkit for maintaining investment in transportation infrastructure as vehicle fleets evolve.

This hearing provides an overview of alternative funding mechanisms to the gas tax and highlights measures other states have implemented to address declining gas tax revenues.

Alternatives to the Gas Tax to Generate Revenue for Transportation Infrastructure

Electric Vehicle Charging Fees

The kilowatt-hour (kWh) tax is emerging as an alternative to traditional fuel taxes, functioning as an indirect usage fee on electricity used to charge EVs, similar to how gas taxes operate. Seven states have recently enacted kWh taxes on public EV charging stations, including Iowa, Oklahoma, Kentucky, Pennsylvania, Utah, Georgia, and Montana.

These taxes are typically collected at public charging stations, though collection points vary by state: Montana levies the tax on the utility supplying the power, Utah on the station operator, and Iowa, Oklahoma, and Kentucky directly on the consumer. Public charging provides a straightforward collection point, but it only accounts for a small fraction of total EV charging, as most charging occurs at residential locations. Implementing a kWh tax on home charging would require costly sub-metering, which could make enforcement and collection challenging.

The rate structure and administration of the kWh tax varies across states. Iowa imposed a $0.026/kWh tax on non-residential charging starting in 2023, while Oklahoma sets its rate at $0.030/kWh. Kentucky adds a state-land surcharge with adjustments tied to the National Highway Construction Cost Index. Georgia ties its tax to the gas tax, calculating $0.024 per kWh as the equivalent of one gallon of gasoline. Pennsylvania has applied an alternative fuel tax since 1997, requiring monthly reporting and payment for EV charging, though enforcement has been limited. Utah applies a 12.5% tax on retail EV charging, collected per kWh, per hour, or via subscription, with revenues directed to the state transportation fund.

While the kWh tax is conceptually simple and familiar to drivers, states face several challenges. Limiting collection to public charging stations reduces revenue potential, as over 85% of charging occurs at home. Additionally, EV owners may view the tax as double taxation where EV registration fees exist, and equity concerns arise for apartment-dwelling EV owners versus single-family homes. Implementation requires updating metering, point-of-sale systems, and administrative accounting, with collection costs in some states approaching 10–12% of total revenue. Despite these hurdles, the kWh tax remains an appealing model for states seeking to capture road usage fees from electric vehicles in a way that parallels traditional fuel taxation.

Registration Fees

Vehicle registration fees can provide a stable and reliable source of funding for state transportation systems. Currently, states require vehicle owners to pay these fees in order to legally operate the vehicles. States or regional authorities set the fee amounts and they can be adjusted through legislation. Factors that determine registration fees vary, commonly including vehicle type, value, weight, location, special plates, unpaid fees, and emissions.

With the rise of more fuel-efficient vehicles, registration fees have become an increasingly important tool to ensure that all drivers contribute fairly to the maintenance of roadways. In addition to standard registration fees, many state legislatures have implemented supplemental fees for electric and hybrid vehicles. According to the National Conference of State Legislatures (NCSL), forty-one states now charge special registration fees on EVs, plug-in hybrid vehicles

(PHEVs), non-plug-in hybrids, and other alternative fuel vehicles. These fees vary by state, ranging from $50 to $290 for EVs, and $50 to $150 for hybrid vehicles.

Eleven states, including California, Georgia, Indiana, Maryland, Michigan, Mississippi, Missouri, North Carolina, Pennsylvania, Rhode Island, and Utah, designed their fees to increase over time in line with the consumer price index or another inflation-based metric, addressing lessons learned from the fixed-rate structures historically used for gas taxes. Delaware, Michigan, Montana, and Oklahoma factor vehicle weight into the calculation of EV or hybrid registration fees.

For a detailed breakdown of state-specific EV and hybrid registration fees, refer to the NCSL brief on Special Registration Fees for Electric and Hybrid Vehicles.

Toll Fees and Time-Based Charges (Congestion Pricing)

Toll authorities charge drivers for using roadways, highways, bridges, or specific lanes, with rates that can vary by time of day. States and local governments use toll revenues to maintain and improve existing infrastructure, ensuring roads remain in good condition. Toll revenues also finance new roadways and other transportation projects.

Variable toll pricing is already in practice in several states, including Florida, Texas, and California, where rates adjust depending on traffic conditions, lane type, or distance traveled. Time-based tolls, also known as congestion pricing, adjust rates dynamically based on the time of day, charging higher prices during peak periods. While congestion pricing cannot be applied universally, it encourages drivers to adopt alternative travel times, routes, or modes of transportation. New York City has implemented a congestion pricing program to reduce traffic and emissions. According to the Natural Resources Defense Council, congestion pricing provides a straightforward and effective approach to managing congestion and improving air quality.

Other Alternatives

The Eastern Transportation Coalition highlights several alternatives to the gas tax, including indirect usage fees, taxes on commercial activities, and other mechanisms. Indirect usage fees target products associated with vehicle operation, such as tires, batteries, or electricity. States can also impose taxes on commercial activities, including retail delivery charges, for-hire transportation fees, and trucking surcharges. Retail delivery charges apply to the shipment of goods, for-hire transportation fees cover services provided by companies such as Uber and Lyft, and trucking surcharges add a fee based on the cost of moving goods.

Retail delivery fees (RDFs) specifically supplement declining gas tax revenues by adding charges to goods delivered via motor vehicle. Colorado in 2021 and Minnesota in 2023, have implemented RDFs, while other states, including Hawaii, Indiana, Maryland, Mississippi, Nebraska, New York, and Washington, are exploring similar programs.

Transportation network company (TNC) fees apply charges to rides provided by app-based services such as Uber and Lyft to support transportation infrastructure. These fees can take the form of a flat per-ride charge, a percentage of the fare, or rates based on distance or time. Several

states have implemented or studied TNC fees: California and Washington have established per-ride surcharges, while Colorado and Minnesota have explored similar approaches. By targeting vehicles that use public roads but do not contribute through fuel taxes, TNC fees ensure that all road users contribute fairly, though challenges remain in administration, equity, and public acceptance.

For a detailed breakdown of state-specific TNC fees, refer to the Transportation Investment Advocacy Center's TNC Fees Handout.

Other potential funding mechanisms include dedicating a portion of auto sales taxes, implementing street utility fees, levying payroll taxes, charging land use impact fees, or allocating resources from the general fund. Because these approaches are not directly tied to road usage, states often face significant obstacles when attempting to implement them.

Road Use Charges (RUC) or Mileage-Based User Fees (MBUF)

Road usage charges (RUCs), also called mileage-based user fees (MBUF), charge drivers based on the number of miles traveled rather than the amount of fuel purchased. As vehicles become more fuel-efficient and EVs grow in popularity, traditional gas tax revenues have declined, creating funding gaps for state transportation systems. RUCs aim to maintain a stable, equitable source of funding while aligning contributions with actual road use.

RUC programs generally require participants to report mileage, tracked through odometer readings, smartphone apps, or in-vehicle devices. States design these programs to protect driver privacy, offering options such as aggregating mileage data, capping monthly charges, or allowing participants to use third-party reporting systems.

State examples:

- Oregon launched the first voluntary RUC program in the United States, tracking mileage via GPS-enabled devices, with revenue directed to the state's transportation fund.
- Hawaii implemented a voluntary pilot program that allows drivers to choose between odometer-based reporting and app-based tracking.
- Utah initiated a pilot program offering 100% opt-in participation for electric and hybrid vehicles, using telematics devices to record miles.
- Virginia implemented a hybrid system that allows participants to opt in voluntarily and pay via odometer readings, with caps to address equity concerns.

Challenges include administration costs, technology reliability, privacy considerations, and equity across vehicle types and regions. States can overcome these challenges through public education, pilot programs, and program design that protects privacy and provides equitable treatment across populations.

By combining thoughtful program design, public engagement, and flexible fee structures, RUCs offer a promising model for sustainable and politically viable road funding that evolves alongside vehicle technology.

For more information on RUC, refer to the Eastern Transportation Coalition's (TETC) report Compendium of Revenue Alternatives in Response to Fuel Economy Improvements and Vehicle

Fleet Electrification or the National Conference of State Legislatures' (NCSL) report States Look to Mileage Based Fees to Replace Gas Tax Revenue.

Conclusion

Alternative funding mechanisms, ranging from kWh taxes, registration fees, tolls, and TNC fees to RUCs, offer states a diversified toolkit for addressing declining gas tax revenues. Each mechanism presents trade-offs in terms of administration, equity, and public acceptance. By leveraging pilot programs, public engagement, and flexible program design, states can implement sustainable revenue systems that maintain investment in transportation infrastructure while accommodating the transition toward more fuel-efficient and electric vehicles.