The Tennessee Advisory Commission on Intergovernmental Relations

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MEMORANDUM

TO: Commission Members

FROM: Cliff Lippard
Executive Director

DATE: 28 September 2022

SUBJECT: Electric Vehicles and Other Issues Affecting Road and Highway Funding—Draft Report for Review and Comment

The attached Commission report is submitted for your review and comment. It was prepared in response to concerns raised by Commission members about the growing market for electric vehicles (EVs) in Tennessee and what effect increased adoption of EVs might have on state and local road funding. Members also noted that increased adoption of EVs has brought with it demands from residents to improve the state's EV-charging infrastructure. To address these concerns, the Commission directed staff to

1. study fuel taxes and the current intergovernmental funding structure for road construction and maintenance;
2. investigate road maintenance and construction costs, fuel efficiency, and electric vehicles in Tennessee and their effects on that funding; and
3. examine potential alternative means of financing transportation infrastructure to offset lost revenues without discouraging electric vehicle expansion.

Additionally, members asked staff to investigate the effect increased EV adoption will have on total electricity consumption and on the Tennessee Valley Authority's (TVA) payments in lieu of taxes (PILOTs). Vehicle charging will remain a small percentage of total electricity consumption, with only a small effect on TVA PILOTs.

Road funding in Tennessee comes from federal, local, and state sources. Of these, federal revenue, which comes primarily from federal fuel taxes, accounted for approximately 34% of the state's overall road funding in 2019. But use of this federal funding is restricted to the highways that are part of the federal-aid system, which account for approximately 20% of the road mileage in the state, leaving much of the fiscal responsibility for road construction and maintenance up to local governments and the state. Local revenue sources contributed about 12% of Tennessee's overall road funding, including both local general fund revenue and, in some cases, bond issues. State revenue sources accounted for approximately 54% of overall road funding in Tennessee. State revenue for roads includes several sources, including vehicle registration fees, and, in the two most recent fiscal years, the state's General Fund. But the majority of the state's own-source revenue comes from the state's fuel taxes.

Of course, fully electric vehicles don't need gasoline, and therefore their owners don't pay fuel taxes. (Plug-in hybrid vehicles, or PHEVs, do use some gasoline, but can operate at the equivalent of more than 100 miles-per-gallon.) The IMPROVE Act of 2017 introduced an additional EV registration fee to ensure EV drivers would contribute something in lieu of fuel taxes. The $100 fee is less than what the driver of a new gas-powered car might pay in fuel taxes over the course of a year. Unlike the gas tax, however, revenue from this additional registration fee is not shared with local governments and no revenue is collected from owners of EVs registered out-of-state. The fee does not apply to PHEVs.

Although EVs will affect road funding as their numbers increase—they are projected to make up 10% of all vehicles by 2040—increases in fuel efficiency and inflation will have a greater effect on the state's road funding. For example, the adoption of EVs, if the above projection is met, could reduce state gas tax revenue by $68 million in 2040. But increases in fuel economy over that same period are projected to reduce gas tax revenue by $163 million in 2040. Inflation is by far the most significant factor. Highway costs have increased at an average annual rate of 3.6% in the past decade and at that rate could increase 89% overall by 2040. If that were to happen, it would reduce the purchasing power of the state's gas tax by $399 million in 2040.

Many states index their gas tax rate to inflation, average fuel economy, or both. If Tennessee were to do this, it could result in automatic tax increases in future years when the General Assembly might otherwise choose to exercise its discretion to maintain existing rates. As fuel taxes have become less effective nationwide, a great deal of consideration is going towards the idea of taxing all vehicles on a per-mile basis, regardless of whether the vehicle is electric or gas-powered. There are still questions about implementation and privacy concerns, but several states are testing pilot programs.

While growing adoption of EVs might not become a major issue for road funding in Tennessee for decades, it along with changes in fuel economy, increases in inflation, and decisions about the distribution of new registration fees point to the need for modifications to Tennessee's road funding system. Moreover, automakers are investing heavily in EV manufacturing facilities across Tennessee. **Recognizing this, the Commission makes the following recommendations:**

1. **Because the practical effect of the state's EV registration fee is to serve as a substitute for the gas tax by collecting revenue for road funding from vehicle owners who don't purchase gasoline—and therefore don't contribute to road funding through the gas tax—**
    a. **the state should consider sharing EV registration fees with local governments in the same proportion as the gas tax and**
    b. **the state could consider applying a reduced EV registration fee to plug-in-hybrid vehicles and share this revenue with local governments in the same proportion as the gas tax.**
2. **Given the effect of inflation on the purchasing power of gas tax revenue, and to assist lawmakers in evaluating whether to adjust the state's fuel tax rates, the Department of Revenue or another entity such as the State Funding Board should inform the General Assembly of the effect of inflation on the purchasing power of the state's fuel taxes at least once every two years.**
3. **As the state confronts the tradeoffs associated with any potential alternatives to its current fuel-tax-based road funding framework, it should**
    a. **balance the ability to raise adequate revenue with equity for all drivers regardless of whether their vehicles are powered by gas, electricity, or some other method;**
    b. **ensure that revenue from any adopted alternatives is shared with local governments in an equivalent manner to the current sharing of fuel taxes; and**
    c. **ensure any alternatives intended to offset lost revenues are designed to do so without discouraging customers from purchasing electric vehicles.**