



THE UNIVERSITY OF  
**TENNESSEE**  
KNOXVILLE

**Memorandum**

To: Tennessee Department of Transportation

From: Matt Murray and Kevin Heaslip

Date: January 30th, 2023

Subject: Revenue Parity of Electric Vehicles

This memo relies on the best available information, including very limited data for Tennessee, to estimate the forgone fuel-related tax revenue from the use of light electric vehicles in Tennessee.

The first step is to identify the estimated annual miles driven by an automobile in Tennessee. The estimated Vehicle Miles Traveled (VMT) in Tennessee is estimated at 13,298. This is calculated by taking the estimated total VMT in Tennessee<sup>1</sup> (82,891,770,860 in 2019) multiplied by the percentage of VMT by light-duty vehicles<sup>2</sup> (90%) of the FHWA total VMT estimate from 2019 of 82,891,770,860 miles and dividing by the number of automobiles and trucks registered in the state<sup>3</sup> (5,610,000). -

The second step is to identify an average fuel economy figure that can be divided into average miles traveled to infer the number of gallons of gas that the typical internal combustion engine automobile would consume in a year. We use data from the Bureau of Transportation Statistics showing 22.2 miles per gallon for 2019<sup>4</sup>. Applying this mileage figure to average annual miles of 13,298 implies 599.0 gallons of gasoline consumed per year for the typical light duty passenger vehicle.

Tennessee's current gasoline tax rate stands at 26 cents per gallon. The implied estimate of gas tax revenue that is foregone by an EV light vehicle is therefore \$155.74. An additional 1.4 cent per gallon special petroleum fee also applies to regular gasoline sales to support fuel service inspections. (Note that while inspection fee revenue is foregone when consumers switch to an EV, EVs themselves do not directly benefit from underlying inspection support services.) The loss in special petroleum fee revenues is \$8.39. Together foregone revenue from the gasoline tax and special petroleum fee for the state is \$164.13. Finally, the federal gas tax rate is 18.4 cents per gallon, implying additional foregone revenue to federal coffers of \$110.22. In total, the total loss in state and federal fuel-related gasoline levies is \$274.35.

---

<sup>1</sup>[https://explore.dot.gov/views/StateStatisticalAbstracts\\_16699101653250/DashboardALT?%3Aembed=y&%3Aiid=1&%3AisGuestRedirectFromVizportal=y](https://explore.dot.gov/views/StateStatisticalAbstracts_16699101653250/DashboardALT?%3Aembed=y&%3Aiid=1&%3AisGuestRedirectFromVizportal=y)

<sup>2</sup> [https://www.fhwa.dot.gov/policyinformation/tables/vmt/vmt\\_forecast\\_sum.cfm#ftn3](https://www.fhwa.dot.gov/policyinformation/tables/vmt/vmt_forecast_sum.cfm#ftn3)

<sup>3</sup> [https://explore.dot.gov/views/StateStatisticalAbstracts\\_16699101653250/DashboardALT?%3Aembed=y&%3Aiid=1&%3AisGuestRedirectFromVizportal=y](https://explore.dot.gov/views/StateStatisticalAbstracts_16699101653250/DashboardALT?%3Aembed=y&%3Aiid=1&%3AisGuestRedirectFromVizportal=y)

<sup>4</sup> <https://www.bts.gov/content/average-fuel-efficiency-us-light-duty-vehicles>