

ELECTRIC VEHICLES AND MOTOR FUEL TAX REVENUE



Data from 2019



Vehicle Miles Traveled
9,859,000,000



Tax Rate
\$0.23/Gal
(both unleaded and diesel)



Fuel Sold
762,000,000 Gal
(both unleaded and diesel)



MFT Revenue Collected
\$175,260,000



Licensed Drivers
559,887
(561,000 current)



Registered Vehicles
Passenger **466,248**
Pickup **279,837**
Truck **89,746**
Total 835,831

As electric vehicle (EV) use continues to grow in North Dakota, the state must consider how to address the impact on the state's motor fuel tax (MFT) revenue. Because EVs do not require gasoline to operate, they do not contribute to the MFT that helps fund North Dakota's transportation system. North Dakota currently charges an annual \$120 registration fee for fully-electric EVs, \$50 for plug-in hybrid EVs, and \$20 for fully-electric motorcycles in addition to the typical annual registration fees (see N.D.C.C. § 39-04-19.2)

What does the average vehicle currently generate in MFT?

North Dakota DOT conducted a study based on historic state travel data and vehicle registration data to estimate the average contribution of MFT from different vehicle categories. Data from 2019 was used as the base.

Using a cell phone validated travel demand model, the impacts to current MFT from out of state drivers was estimated. Because fuel can currently be purchased out of state for miles driven within North Dakota, the state's total VMT is not an accurate representation of the revenue generated from in-state driving. It is estimated that 94.63% of Commercial Truck VMT are paying MFT and 97.51% of Passenger VMT are paying MFT.

Using a combination of the cell phone validated travel demand model and data from NDDOT, the average mileage driven per year, gallons of fuel consumed per year, MFT collected per vehicle per year, and total MFT collected by vehicle class were estimated.

REVENUE

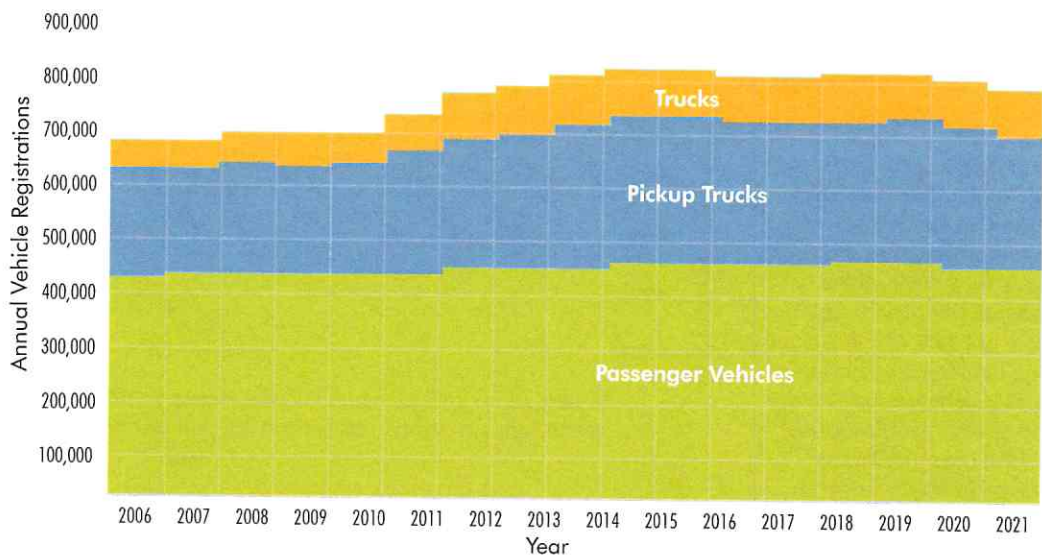
HOW WILL EVs IMPACT MOTOR FUEL TAX REVENUE?



The estimated impact on the state's motor fuel tax revenue used a number of trends to understand the growth of EVs in the state, as well as the growth of VMT and the overall growth of vehicle registrations.

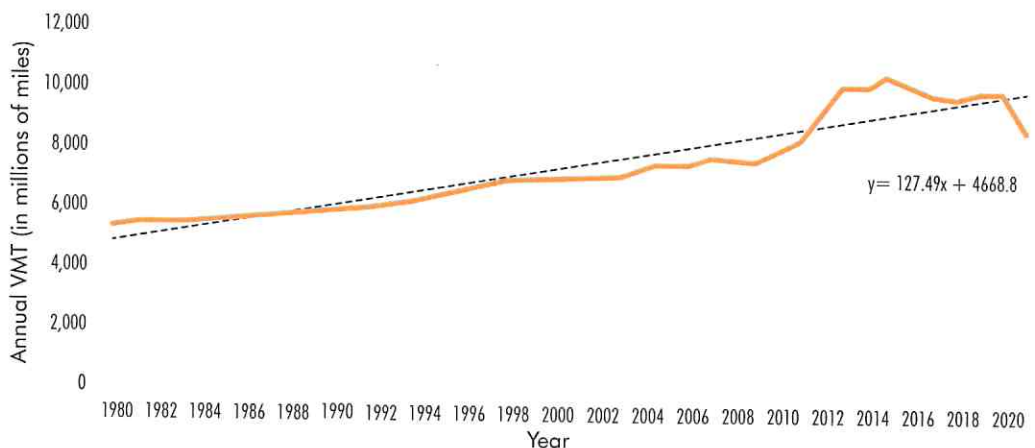
Annual Vehicle Registration

This chart shows the trends of vehicle registrations within North Dakota back to 2006 for passenger vehicles, pickup trucks, and commercial trucks. Overall, the state has averaged an additional 10,259 vehicle registrations per year. This number also accounts for the transfer of vehicles which would count the registration of the same vehicle twice.



Annual Vehicle Miles Traveled (VMT)

This chart shows the growth of annual vehicles miles traveled (VMT), which shows a growth of 127 million miles per year on average since 1980.



WHAT OPTIONS DOES NORTH DAKOTA HAVE TO SUPPLEMENT THE LOSS IN MOTOR FUEL TAX?



As EV purchases increase, most states are considering options to replace lost motor fuel tax revenues.

Implemented Fee Collection Approaches Throughout the U.S. in 2022

Mileage Based Fee

Oregon and Utah

OBD-II device, In-Vehicle Telematics, Annual odometer check (can be visual inspection during registration or captured via smartphone).

Benefits: Proportional to road usage. Captures actual EV driving.

Drawbacks: Does not capture out of state driving. Can be difficult/expensive to collect. Privacy concerns.

Electric Vehicle Registration Supplemental Fee

31 States

Fee paid during vehicle registration.

Benefits: Easy to collect.

Drawbacks: May charge drivers more or less than actual vehicle use. Does not capture out of state driving.

Electric Vehicle Registration Fee By Weight

Oklahoma and Michigan

Fee paid during vehicle registration.

Benefits: Easy to collect. Fees determined by vehicle weight recognize the efficiency differences between lighter and heavier vehicles.

Drawbacks: May charge drivers more or less than actual vehicle use.

Electricity Fee (per kWh) For Public Chargers

Kentucky

Wholesale from EVSE provider.

Benefits: Captures out of state driving.

Drawbacks: Double taxation for in-state drivers who already pay registration fee. Only captures public charging, not private charging.

Additional Fee Collection Approaches to Consider

Further EV fee approaches can be explored and customized to determine the best fit for North Dakota's priorities as EV adoption is anticipated to grow. Those options can be combined to provide flexibility. For example, Utah issues a supplemental registration fee for EV drivers but allows users to opt into a mileage-based fee that caps out at the original EV supplemental fee.

Depending on the fee structure, states may experience a net increase in revenue from their EV fees. Some states are using a portion of the EV supplemental funding for the deployment of electric vehicle infrastructure. This allocation has the potential to cover the 20% non-federal match in funding required for NEVI charging deployment projects. Alabama dedicates 25% of its EV fee revenue to the Rebuild Alabama Fund, which funds electric vehicle charging infrastructure until EV registrations exceed 4% of total vehicle registrations.



Peg Fees To Inflation

Inflation can erode the effectiveness of any fee or tax. Some states have pegged their EV fees to inflation, allowing an annual increase of the fee without annual legislation needed for the increase.



Fees Can Be Tiered

Many states have tiered fees for hybrids, plug-in hybrids, and full battery electric vehicles differently. This approach recognizes that fees are not "one size fits all" and can be adjusted as needed.



Approaches Can Be Combined

Approaches do not need to be a singular solution. North Dakota can explore a combination of approaches such as vehicle registration fees and consumption fees that are calibrated to replace any offset in motor fuel tax collection.