The Gas Tax In America: An Updated Outlook

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The Motor Fuel Tax in America: A System at Risk

The motor fuel tax has served as the primary source of funding for transportation in America for almost 100 years
- An efficient proxy for a direct user fee

It has served us well; but its days may be numbered
- Increasing fuel efficiency
- Dramatic shift toward fully electric vehicles

Today’s presentation: an updated look at the sustainability of the gas tax
- Builds upon the 2023 EIA Annual Energy Outlook
- Three alternative future scenarios
Recent US Fuel Sales Trends

- Continuous growth from 2012 thru 2019
- Big Drop in 2020 due to Covid pandemic
  - Total fuel down 11%
  - Gasoline down 13%
- Recovery in 2021; but little growth in 2022
  - VMT up by 2.75%
  - Total Fuel up by only 0.15%
  - Gasoline up by only 0.12%
- 2022 VMT within 0.5% of 2019 pre-pandemic level
  - But total fuel is still 2.7% lower
  - Gasoline sales down 4.4%
- Seems we reached “peak fuel” in 2019
  - And were headed down
  - Initial Projections using EIA 2023 AEI Ref. Case
Recent Gasoline Sales in Selected States

Massachusetts Gasoline Sales (M. Gal.)

Washington State Gasoline Sales (M. Gal.)

Florida Gasoline Sales (M. Gal.)

California Gasoline Sales (M. Gal.)
Recent Gasoline Sales in Selected States

Georgia Gasoline Sales (M. Gal.)

New York State Gasoline Sales (M. Gal.)

Illinois Gasoline Sales (M. Gal.)

Virginia Gasoline Sales (M. Gal.)
An Emerging Surge in New Electric Light Vehicle Sales

- Between 2017 and 2020, new electric vehicle sales averaged just over 300,000 per year
  - Less than 2% of total LV sales
  - About 70% BEV and 30% PHEV
- EV sales in US more than doubled in in 2021 to over 635,000
  - 4.25% of total LV sales
- In 2022, BEV and PHEV sales totaled over 915,000
  - Almost 6.7% of light vehicle sales
  - A 3-fold increase over EV sales in 2020
- Based on first 9 months, EV sales in 2023 may exceed 1.4 million!
  - Over 9% of light vehicle sales

Source: Argonne National Laboratory
Looking Forward: Alternative Projections of EV Light Vehicle Sales Shares

- Near term estimates over next 8-10 years
- EIA 2023 Annual Energy Outlook
  - Somewhat higher than 2022 forecast but still less than most other projections
  - Estimated to reach over 16% by 2032
- Bloomberg New Energy Finance
  - Traditionally one of the highest estimated EV share
  - Recent 2023 updated projection expects EV share to reach 50% of light vehicle sales by 2030
- Four other independent projections
  - Two in the “mid-level”, between EIA and BNEF
    - Edison Energy Institute and EV Adoption
  - Two comparable to or higher than BNEF
    - Goldman Sachs and Boston Consulting
- New EPA Proposal
  - 67% of Light and Medium Vehicle sales should be EV by 2032!
Alternative Estimates of EV Share of New U.S. Light Vehicle Sales

- Assumes High-Level EV Share
- Assumes Mid-Level EV
- 2023 EIA Ref. Case EV Share

Includes BEV and PHEV Vehicles
Alternative Estimates of U.S. Light Vehicle Fleet EV Shares

- Assumes High-Level EV Share
- Assumes Mid-Level EV
- 2023 EIA Ref. Case EV Share
Comparison of Estimated Total U.S. Fuel Sales Forecasts

Comparison of Estimated Total U.S. Fuel Sales Forecasts

Comparison of National Fuel Sales
Impacts by Scenario

2035

- No EVs – Incr. MPG Only
- EIA 2023 Ref. Case
- Mid-Case EV Share
- High-Case EV Share

2050

- No EVs – Incr. MPG Only
- EIA 2023 Ref. Case
- Mid-Case EV Share
- High-Case EV Share
Estimated Annual Federal Fuel Tax Revenue

- No Change in Current MPG
- 2023 EIA Ref. Case Forecast
- With Mid-Level EV Share
- With High-Level EV Share
Estimated Annual Federal Fuel Tax Revenue Impacts With “Mid-Level” EV Penetration

The chart illustrates the projected changes in annual federal fuel tax revenue from 2020 to 2050 under different scenarios:

- **No Change in Current MPG**
- **2023 EIA Ref. Case Forecast**
- **With Mid-Level EV Share**
- **With High-Level EV Share**

Key points:
- In 2020, the revenue is approximately $40,000 million.
- By 2050, the revenue decreases to around $20,000 million.
- The chart shows projected revenue reductions as follows:
  - $6.8 B (17.3%) by 2030
  - $11.2 B (27.7%) by 2035
  - $14.8 B (35.2%) by 2040
  - $17.2 B (39.3%) by 2045
  - $18.9 B (41.1%) by 2050

The chart indicates a significant decline in fuel tax revenue over the years, with the impact of EV penetration being a major factor.
Estimated Annual Federal Fuel Tax Revenue Impacts With “High-Level” EV Penetration
Estimated Annual State Fuel Tax Revenue

2023 Weighted Average State Motor Fuel Taxes

- Gasoline: $0.349
- Diesel: $0.384

*Excludes additional state sales tax and other special fees
Estimated Annual State Fuel Tax Revenue Impacts With “Mid-Level” EV Penetration

Annual State Fuel Tax Revenue (Millions)

2023 Weighted Average State Motor Fuel Taxes

Gasoline: $0.349
Diesel: $0.384

*Excludes additional state sales tax and other special fees
Estimated Annual State Fuel Tax Revenue
Impacts With “High-Level” EV Penetration

2023 Weighted Average State Motor Fuel Taxes
Gasoline: $0.349
Diesel: $0.384

*Excludes additional state sales tax and other special fees
In Conclusion....

• America likely reached “Peak Fuel” consumption in 2019
  – We are already beginning to see a long term decline in fuel sales

• Electric vehicle sales beginning to surge
  – Expect 1.3-1.4 million new EVs sold in 2023
  – Could reach 50 percent of all new vehicle sales by 2030-35

• Due to increasing fuel efficiency and EV penetration, future fuel consumption (and gas tax revenue) will decline significantly
  – 25-35% by 2035
  – 35-50% by 2050
  – Will decline by 25% even with no new EVs due to improving MPG

• The days of the motor fuel tax as the primary source of funding for transportation in America are numbered
Thank You.

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