

Dear Members of the House Committee on Transportation,

Thank you again for the opportunity to join your committee and share testimony with you yesterday.

I wanted to follow up by email regarding some specific questions that arose and provide additional information.

Efficiency comparisons:

Yesterday I shared a [graph](#) comparing the end use efficiency of gas (or internal combustion engine) vehicles vs. electric vehicles.

Rep. Keyser then asked a question about the efficiency of electricity generation. I responded that there is a range of how efficient different types of electricity generation are depending on the type/ source of generation. For further information on the efficiency of electricity generation by source, I offer this piece from [Yale Climate Connections](#). It outlines how generating electricity from renewable sources (such as solar, wind, and hydro) is quite efficient, whereas generating electricity from thermal-based sources (such as coal, gas, and nuclear) is quite inefficient.

While using renewable sources is the most efficient way to generate electricity, the end use efficiency advantages of electric vehicles are present regardless of the source(s) of electricity generation. You see the evidence of this clearly in the [later slide](#) I shared, which shows much much farther a dollar takes you when fueling (powering) an electric vehicle vs. fueling a gas car (note: this is a combined effect of, on the one hand, less energy input needed to travel the same number of miles in an EV vs. a gas vehicle, along with the cost differences of electricity vs. gasoline).

Broadly speaking, combustion -- whether done to generate electricity or to move a vehicle -- is an incredibly inefficient process that wastes a significant amount of energy. As this very informative and comprehensive [article from the Rocky Mountain Institute](#) outlines, moving to renewable sources of electricity *and* electrifying transportation and heating each offer massive opportunities to use energy more efficiently and lower costs in the process.

Cold Weather Range:

Rep. McCoy requested further detail on the range of different EV models in cold temperatures. Please see: <https://www.recurrentauto.com/research/winter-ev-range-loss>

Taxes and Fees by Fuel and Amount of Pollution

I shared a [graph](#) comparing the fees, taxes, and charges levied on different energy sources as a share of their average unit price, as compared to the amount of pollution each energy source produces.

In discussing the graph, I did not correctly recall the level of fees, charges, and taxes levied on gasoline and diesel and misspoke in saying that electricity is the energy source with the highest share of fees, taxes, and charges per unit price. Please accept my apologies for my mistake.

Attached is another version of that graph that also includes gasoline and diesel, which you can see have a *higher* share of fees, taxes, and charges levied on them as a share of average prices than does electricity. However, it is true that fuel oil and propane have far lower fees, taxes, and charges as a share of average unit prices than does electricity. And it is also true that, *relative to the amount of pollution each fuel creates*, all fossil fuels in Vermont contribute far less in taxes, fees, and charges than does electricity.

I hope this is helpful and please don't hesitate to let me know if you have any additional questions or requests.

Thank you,

Jared