



Testimony before the House Oversight and Reform Committee

It's Electric: Developing the Postal Service Fleet of the Future
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Madame Chairwoman, thank you for the opportunity to participate in this hearing.

My name is Kenny Stein, I am the Policy Director for the Institute for Energy Research, a free-market organization that conducts research and analysis on the function, operation, and regulation of energy markets.

The postal service is correct and prudent in taking a gradual approach to introducing electric vehicles into its fleet. As both the service's record of decision as well as the inspector general's report make clear, electric vehicles are substantially more expensive than an internal combustion alternative, due not just to the higher cost of the vehicle itself, but the large expense needed to install charging facilities for the new vehicles. The same two documents make clear that this cost differential is so great that even the expected lower operating costs of electric vehicles over their lifetime does not make up for the higher upfront cost except for certain locations and certain routes. And that is only using a particular set of assumptions. If any of those assumptions are over optimistic, the use of electric vehicles would be a long term drag on the finances of the postal service.

Beyond the higher cost, electric vehicles pose practical challenges that can limit their utility for the postal service. The electric vehicles version of the NGDV has a smaller payload than its conventional alternative due to the weight of the battery. If this results in additional trips, it undermines both the cost argument as well as introducing operating inefficiencies. In very hot or cold weather conditions, battery performance degrades, limiting the locations where electric delivery vehicles are fit for purpose. The well-known range issues of batteries can cause challenges for the postal service because of their unique use of vehicles for curbside deliveries. Comparisons to other commercial fleets cannot be relied upon because even other delivery fleets do not operate in the same manner. All these known and potential issues argue strongly for a cautious pace of introduction of electric vehicles to the postal service fleet.

Questionable assumptions

Beyond pure cost considerations, there are a number of questionable assumptions underlying the predicted electric vehicle transition.

The cost of battery modules, the most expensive part of an electric vehicles, has been falling for many years. But this price decrease will not continue indefinitely. Companies will run out of manufacturing efficiencies and are left with the underlying cost of the mineral inputs of the battery. Indeed, nickel, cobalt, lithium, and various rare earth minerals all have seen prices rises in recent years, and sellers of electric vehicles passenger cars have been forced to raise prices in tandem. There are research efforts underway to find alternatives for some of these minerals, but fundamentally you will always need a bulky battery to power an electric vehicles. Basic physics limits how small or efficient an electric vehicle battery can get while still powering the vehicle. Additionally, the fact that the NGDV is expected to have a several decade service life, but its batteries will likely need to be replaced within 10 years, adds further relevance to this assumption. It is not guaranteed that replacement batteries will be less expensive than the many thousands of dollars they cost today.

It is also assumed that electricity prices will not increase in the future, this is much of the basis for claiming fuel cost savings over internal combustion engines. But there is no evidence for this assumption. Indeed, the record of the last several decades is that electricity prices are flat to increasing in the United States. There is no evidence for the often-asserted claim that more renewables electricity generation will lower electricity prices. The evidence we have more often suggests the opposite, that the higher the share of generation from wind and solar, the higher the electricity prices. This is not an unexpected outcome given that wind and solar require redundancies and backups to account for their intermittency. Over the last 15 or so years, the price of natural gas has dramatically fallen even as the use of natural gas for electricity generation has significantly increased. Yet electricity prices have not fallen as they should have given the largest cost of the largest source of generation has declined substantially. On top of these existing trends, forced and voluntary transitions to electric vehicles as well as political pressure to increase electrification of many needs met by natural gas stands to increase demand for electricity in the coming years. The infrastructure needs to supply this additional demand is subject to delay and limitations due to environmental objections or simple land use opposition. All these factors - higher demand, costlier supply, expensive transmission - mean the expectation for the future must be for higher, not lower electricity prices.

Electric vehicle supply chain

The supply availability of many of the inputs for electric vehicles should be part of the postal service's decision-making process. Even at the end of last year, nickel supplies were forecast be short by 128,000 tons in 2021, with a cobalt shortage of 1,800 tons. Supplies were further forecast to be tight through 2025.¹ Russia's invasion of Ukraine puts nickel supplies on an even

¹ <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/ford-s-electrification-plan-set-to-tighten-battery-metal-squeeze-66831647>

more uncertain footing, given the country produces about 20% of global supply.² A deficit in lithium is expected by 2025 as well. These shortages cannot be quickly remedied, it takes many years to bring a mine into production. With prices of mineral inputs high, there is a high likelihood of electric vehicles being more expensive in the near term. Indeed, it is possible that there will simply not be enough minerals to supply demand. While a Ford or GM can simply wait a few years to hit its electric vehicles sales goals, the postal service needs their replacement vehicles now. There is a real prospect of delivery of electric vehicles being delayed due to supply shortages, something that we have already seen in the last year when it comes to vehicles that make heavy use of semiconductor chips.

The source of the mineral inputs for electric vehicles should also be a concern. While US mines do produce some of the minerals which go into electric vehicles, most of the world's supply of these minerals comes from outside the US and the raw minerals are overwhelmingly processed outside of the US. This is especially true for the components of electric vehicles batteries, the supply chain of which is dominated by China. China processes the majority of the world's cobalt, nickel, lithium, manganese, and graphite as well as many rare earth minerals. China also dominates finished battery production, producing around 80% of the world's lithium ion batteries.³ There are currently companies building battery plants in the US and working on permitting mines, but alternative supplies will take years to come onto the market. The postal service needs their vehicles now. We can hope that 5-10 years from now more of the supply and processing needed for electric vehicles will take place in the United States or close allies, but today any increase in electric vehicle procurement by the postal service will be enriching China.

Conclusion

The uncertainty around the utility of electric vehicles for the postal service, the high cost of electric vehicles, and electric vehicle supply chain concerns all point in the same direction for the postal service: caution. These factors strongly support the service's decision to slowly introduce electric vehicles into their fleet. These factors may change in the future, but as of today, with the postal service having immediate need to replace its aging delivery fleet, electric vehicles are an unnecessary risk to the true mission of the postal service, which is to deliver the mail, not to support larger micromanaging of the national motor vehicles market.

² <https://www.wsj.com/articles/russia-can-hold-nickel-hostage-metals-mining-environment-china-class-domestic-electric-vehicles-11647287911>

³ <https://www.bloomberg.com/news/articles/2021-10-07/u-s-loosens-china-grip-on-46-billion-lithium-battery-industry>