June 16, 2023

Submitted electronically via [www.regulations.gov](http://www.regulations.gov)

Re: **Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles – Phase 3 [EPA-HQ-OAR-2022-0985]**

To Whom It May Concern:

The National Rural Electric Cooperative Association (NRECA) respectfully submits the following comments to the U.S. Environmental Protection Agency (EPA) in response to proposed greenhouse gas (GHG) standards for heavy-duty highway vehicles starting in Model Year (MY) 2028 [EPA-HQ-OAR-2022-0985].

**Overview of Electric Cooperatives**

NRECA is the national trade association representing nearly 900 local electric cooperatives and other rural electric utilities. America’s electric cooperatives are owned by the people that they serve and comprise a unique sector of the electric industry. From growing regions to remote farming communities, electric cooperatives power 1 in 8 Americans and serve as engines of economic development for 42 million Americans across 56 percent of the nation’s landscape.

Electric cooperatives operate at cost and without a profit incentive. NRECA’s member cooperatives include 63 generation and transmission (G&T) cooperatives and 832 distribution cooperatives. The G&Ts generate and transmit power to distribution cooperatives that provide it to the end of line co-op consumer-members. Collectively, cooperative G&Ts generate and transmit power to nearly 80 percent of the distribution cooperatives in the nation. The remaining distribution cooperatives receive power directly from other generation sources within the electric utility sector. Both distribution and G&T cooperatives share an obligation to serve their members by providing safe, reliable, and affordable electric service.

Electric cooperatives serve both rural and underserved or disadvantaged communities. Cooperatives serve 92% of the persistent poverty counties in the United States. Since electric cooperatives serve areas with low population density, costs are borne across a base of fewer consumers and by families that spend more of their limited resources on electricity than do comparable municipal-owned or investor-owned utility customers. On average, electric cooperatives serve eight customers per mile of line and collect annual revenue of approximately $19,000 per mile; while the other utility sectors average 32 customers and $79,000 in annual revenue per mile.

**Critical Role of Electric Cooperatives as Heavy-Duty Highway Vehicles are Electrified**

Electrification of the transportation sector creates both opportunities and challenges for the electric sector, and electric cooperatives will play a critical role in the success of the transformation now underway. As such, electric cooperatives welcome the opportunity to partner with state and local entities on implementing the programs dedicated to building out the nation’s electric vehicle (EV) charging network in the bipartisan infrastructure law (BIL) and through other opportunities. The funding in the BIL is an important down payment in the federal support required to electrify the transportation sector, particularly in rural areas that could otherwise be left behind.

To support the electrification of heavy-duty highway vehicles as laid out in EPA’s proposed rule, electric cooperatives and other utilities must be involved from the very beginning of planning for the charging infrastructure these vehicles will require. There are already examples of 1 MW charging stations being built to support these fleets. Electric cooperatives and other utilities need to be integrated at the very beginning of planning for such facilities by the project developers, or other relevant planning authorities where applicable, to avoid unintended consequences.

**EPA Should Account for Grid-side Investments in Proposed Rule’s Analysis**

Bearing these realities in mind, we write to express our significant concern that EPA has failed to adequately account for the costs associated with serving the new load that will be created via heavy-duty highway vehicle (HDV) electrification as outlined in this proposed rule. While EPA accounts for the cost to purchasers for the hardware and installation of charging equipment, EPA fails to include the electric grid-side upgrades that will likely be needed, if not now, certainly in the future as electrification spreads and this could have serious negative consequences to American consumers. Specifically, within the proposed rule section on Charging Infrastructure Costs, EPA states:[[1]](#footnote-1) *“there may be additional infrastructure needs and costs beyond those associated with charging equipment itself. While planning for additional electricity demand is a standard practice for utilities and not specific to BEV charging, the buildout of public and private charging stations (particularly those with multiple high-powered DC fast charging units) could in some cases require upgrades to local distribution systems*.”

It is important for EPA to correct this failure in the proposed rule stage by updating its analysis with inclusion of a range of expected costs associated with serving the new load from the HDV fleet created by EPA’s proposal. Failure to do so will likely result in unrealistic expectations on the part of fleet operators and possibly delay plans for electrification as they learn of the full costs that will be required to serve this new load from their electric cooperatives or other electric utilities. Neither these HDV fleet operators, nor the EPA, should expect that electric cooperatives can bear the burden of these new costs alone, particularly when these costs will ultimately need to be passed on to the end of the line consumer-members of the cooperative.

Overall, it is important for EPA to recognize that electrification of the transportation sector, and the increased flexibility of this newly electrified demand, will require substantial distribution infrastructure investment over time to meet increased average local electric demand and to meet increased demand in new locations (e.g., EV charging stations). Significant transmission infrastructure investment may also be required to meet increased average electric demand and changes in the spatial distribution of electric demand among load centers. According to the National Academy of Sciences, to transition the transportation sector through increased electrification, electric utilities will need to increase generation by up to 170% and see a three-fold expansion of the transmission grid by 2050. Over time, electrification of the transportation sector will require additional generation investment to ensure resource and energy adequacy to meet increased average electric demand and changing consumption profiles. Unfortunately, this investment challenge is becoming more complex due to several recent EPA actions that are jeopardizing flexible, dispatchable always available generation resources.[[2]](#footnote-2) These actions would require increased reliance on intermittent energy sources. Particular attention will be needed to ensure that generation investment is adequate in amount and in operational characteristics to meet the demands of electrification while ensuring grid stability, security, and reliability.

**Specific Costs for EPA to Consider Incorporating in the Proposed Rule’s Analysis**

Again, we urge EPA to update its analysis to account for the costs needed to make updates to the grid to support HDV electrification. Grid upgrade costs for EV charging will vary by region, neighborhood, cooperative, circuit, and feeder. However, to illustrate the types and ranges of costs that EPA should account for, we provide the following costs sourced from four different cooperative regions, broken down by charge level:

* **Residential (Level 1 and Level 2):** One out of three households will need an expanded electric panel to accommodate 240 V Breakers. If a household purchases two electric vehicles, then four slots on a breaker will be needed to accommodate this load. The average cost will be approximately $4,000 for a Level 2 residential charger with a panel upgrade.
	+ Upgrading panel (20% of panels must be upgraded) - $600
	+ Transformer upgrades - $2,600 and climbing
	+ Service wire gauge upgrades to accommodate higher amperage - $3,000
* **Public (Level 2 and DC Fast Charging (DCFC)):** For commercial sites, transformer upgrade needs will vary. Most sites will already have three-phase power available; however, in very rural locations single-phase power will need to be upgraded to three-phase. If transformers do need to be upgraded on a three-phase line, then three transformers will need to be upgraded.
	+ Level 2 charger including panel - approx. $4,000 on average
	+ National EV Infrastructure Program (NEVI)-Compliant DCFC - approx. $25,000-$150,000
		- Transformer - $25,000 - $40,000 (reflects current prices for three transformers)
		- Service entrance - $3,000-$4,000
		- Metering package (including instrumentation, voltage transformers (PT) and current transformers (CT) - $2,000
		- Line extension, if required (site dependent) - $50,000 - $75,000

Circumstances vary across cooperatives, but some of these costs will be borne directly by the consumer-members and others will be paid for by the cooperative. Regardless, these costs help to illustrate more accurately the investment it will take to implement on EPA’s proposed rule.

We note that these costs reflect a snapshot estimate in time and are likely to increase, particularly due to the significant challenges and delays utilities are facing in their supply chains, which are contributing to an unprecedented shortage of the most basic machinery and components essential to ensure the continued reliability of the electric grid. Electric cooperatives are waiting a year, on average, to receive distribution transformers. Additionally, lead times for large power transformers have grown to more than three years. And orders for electrical conduit have been delayed five-fold to 20 weeks with costs ballooning by 200 percent year-over-year. As a result, new projects are being deferred or canceled, and electric cooperatives are concerned about their ability to respond to major storms due to depleted stockpiles. We expect these supply chain challenges to persist with the increased demand for electrification projects being incentivized by the U.S. federal government. All these delays will likely impact the cost and timing of charging infrastructure buildout needed to support the HDV fleet electrification envisioned in this proposed rule.

**Summary**

EPA should update its analysis in the proposed rule to account for the significant grid investments that may be needed to support HDV fleet electrification as laid out in the proposal. As detailed above, these costs may be significant and should not be shouldered by the electric cooperatives serving this new load. Again, electric cooperatives are consumer-owned and operate at cost on a not-for-profit basis. They also serve 92% of the nation’s persistent poverty counties. Affordability is critical to electric cooperatives and the consumer-members they serve, and any new costs imposed on an electric cooperative are ultimately borne by the consumers at the end of the line. EPA should update its analysis to ensure it more accurately represents the costs associated with electrifying HDV fleets, which could be significant across the country.

Thank you for considering our comments. Please contact me at 703-907-5732 if you have any questions.

Sincerely,

Stephanie Crawford

Regulatory Affairs Director

National Rural Electric Cooperative Association

1. Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles – Phase 3, 88 Fed. Reg. 25,982 (April 27, 2023) [↑](#footnote-ref-1)
2. These actions include: Supplemental Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category, 88 FR 18824 (March 29, 2023); National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units Review of the Residual Risk and Technology Review, 88 FR 24854 (April 24, 2023); Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals From Electric Utilities; Legacy CCR Surface Impoundments, 88 FR 31982 (May 18, 2023; New Source Performance Standards for Greenhouse Gas Emissions From New, Modified, and Reconstructed Fossil Fuel-Fired Electric Generating Units; Emission Guidelines for Greenhouse Gas Emissions From Existing Fossil Fuel-Fired Electric Generating Units; and Repeal of the Affordable Clean Energy Rule, 88 FR 33240 (May 23, 2023); and Federal Good Neighbor Plan for the 2015 Ozone National Ambient Air Quality Standards, 88 FR 36654 (June 5, 2023). [↑](#footnote-ref-2)