January 28, 2022

Submitted electronically via <http://www.regulations.gov>

Re: **Request for Information (RFI) on Development of Guidance for Electric Vehicle Charging Infrastructure Deployment**

To Whom It May Concern:

The National Rural Electric Cooperative Association (NRECA) respectfully submits the following comments in response to the U.S. Department of Transportation’s (DOT) Request for Information (RFI) on Development of Guidance for Electric Vehicle Charging Infrastructure Deployment (FHWA-2021-0022).

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 62 generation and transmission (G&T) cooperatives and 831 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.

We appreciate the opportunity to provide NRECA’s perspective in response to DOT’s RFI. 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). 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.

Many electric cooperatives have established or are planning programs to support EV adoption in their communities and are planning for a future with high levels of EV penetration. However, rural America faces unique challenges in this transition. Public charging in particular poses an acute problem because the lower utilization rates at stations located in more remote, rural areas may not make economic sense today and may not for the foreseeable future, limiting interest from the private sector in investment.

Nonetheless, some electric cooperatives are investing in public charging – whether through make-ready infrastructure, building stations and transferring ownership, or owning and operating them – to serve their consumer-members and provide economic development opportunities in their communities. Electric cooperatives can play that pivotal role in their communities by stepping in to provide new services where others may not because it is too costly or burdensome, just as they did in rural electrification and now in offering broadband services. But funding these EV charging stations remains extremely difficult, particularly for non-for-profit cooperatives, operating at cost, when assessing projects that may not pencil out for a long time to come. In addition, any new costs for the electric cooperative are ultimately borne by the consumer-members at the end of the line. In the near term, these consumer-members may be bearing the cost of public charging even though they may not be the primary users of the chargers for some years to come. That is why the federal funding extended by DOT through the BIL is so critical to support EV charging infrastructure in rural America. Electric cooperatives are eager to partner with the states and local entities on charging projects to ensure that rural communities are not left behind in the electrification of the transportation sector.

Electric cooperatives will make excellent partners to the states and local entities charged with implementing these funding programs as they have the knowledge and expertise to support robust planning and implementation of charging projects that will ensure federal dollars are expended efficiently, projects appropriately sized to account for current and planned charging needs, and reliability of the electric grid maintained. In general, upgrades to transmission and distribution grid infrastructure by co-ops and other electric utilities will be required over time to handle the increased load and changing patterns of electric demand that result from widespread EV adoption. Involving electric cooperatives in charging projects funded through the BIL will help to ensure that these infrastructure upgrades adequately account for reliability and cost considerations, all while being good stewards of federal taxpayer money.

Again, electric cooperatives are consumer-owned and operate at cost. They also serve 92% of the nation’s persistent poverty counties. Affordability is critical to electric cooperatives and the consumer-members they serve and an important consideration when adopting new technologies and services or making infrastructure investments. Any new costs imposed on an electric cooperative are ultimately borne by the consumers at the end of the time. The federal funding provided through the BIL in the DOT EV charging programs will provide a critical way for electric cooperatives to help support a national EV charging network that is inclusive of rural America.

We appreciate the opportunity to address the nine statutory considerations for the EV Charging Program included in DOT’s RFI below to help ensure that DOT’s funding programs will provide for the needs of communities served by electric cooperatives.

1. **The distance between publicly available EV charging infrastructure;**

We support the BIL providing that where Alternative Fuel Corridors are already sufficiently built out funds may be used to build EV charging infrastructure on other publicly accessible roads or routes. It is important that DOT does not overlook the rural areas that may not be located along major interstates typically included in Alternative Fuel Corridors to date. Excluding these rural areas could prevent a truly national network of EV charging stations that is inclusive of rural communities and may delay widespread EV adoption. Building out a robust rural network along highways and interstates will facilitate adoption of passenger cars aa well as medium and heavy-duty trucking. This network is critical to the transportation of people and goods.

We are pleased to see that funds in the Charging Program may be used for mapping purposes. It is critical that co-ops have a solid understanding of where the EV adoption will be highest and the patterns of use that contribute to anticipated charging needs to ensure that charging infrastructure is appropriately located and sized. At this stage in network development it is important that stations are cited in areas of critical need and not in areas that will see minimal usage.

1. **Connections to the electric grid, including electric distribution upgrades; vehicle-to-grid integration, including smart charge management or other protocols that can minimize impacts to the grid; alignment with electric distribution interconnection processes, and plans for the use of renewable energy sources to power charging and energy storage;**

This area raises a series of important considerations for building out charging infrastructure as envisioned in the BIL that electric cooperatives can (1) help in answering and (2) demonstrate why they should be included during the planning and decision-making process on the charging projects built out under DOT’s funding programs in their service territories. EVs must be integrated in a way that does not impair the reliable or cost-effective delivery of electric power that Americans have come to expect and rely on every day.

* **Connections to the grid including upgrades:** 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. Newly electrified energy demand will necessitate investment in new broadband telecommunications infrastructure to enable continued reliable operation of the distribution system and necessary communication with consumers (especially in rural communities). Newly electrified energy demand will require a telecommunication backbone in order to provide grid services to distribution system operators or regional system operators. 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. This investment challenge is more complex with 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.
  + As Americans continue to adopt EVs at an increasing pace, the electricity used to charge EVs will increase. Although increased electricity sales are generally advantageous to co-ops, the time of day that EV charging occurs can determine whether or not it is beneficial to the co-op from a cost perspective. Co-ops that pay peak demand charges are motivated to minimize the amount of charging that occurs during peak hours. Co-ops that pay time-varying rates will benefit if they can shift EV charging to lower cost periods. Although the strategy for control and the optimal time to charge varies from co-op to co-op, it is clear that leaving the load unmanaged can cause negative impacts once EV adoption reaches a critical level which could ultimately harm the consumer-members at the end of the line who own the co-op.
  + Increased EV charging will change patterns of electric use, making it important for co-ops to be able to access and manage charging data to optimize their systems for continued reliability. Third-party providers of EV charging need to coordinate with their electric utilities to ensure the co-op or other utility has the necessary data to manage these impacts properly.
* **Vehicle-to-grid integration:** There are various ways an electric cooperative and other utilities could interact with an EV and the EV’s owner. Managed charge programs address the demand response attribute of the EV, including a goal for as many EVs as possible to charge off-peak (in geographies where it makes the most sense). This helps to flatten load curves, in many cases use night-time wind generation, and utilize distribution system assets more effectively. All of this can be accomplished using existing technology and a variety of programs that can be designed to meet the needs of local consumers. This is being done without the expense of bidirectional charging or vehicle-to-grid (V2G) programs and could even defer the need for expensive upgrades to the distribution system.
  + Use cases for EVs such as frequency regulation and bidirectional charging or V2G should be approached with caution. In many cases, even if the technology evolves, the use case may not make sense to pursue. While EV adoption is growing, the vast majority of Americans have little to no experience with EVs or the charging technology. A rush to deploy complicated V2G use cases upon the car-buying public will likely cause confusion and concern and could hinder widespread EV adoption. A similar argument can be made for commercial fleet owners. Commercial vehicles must serve their primary function of delivering goods and people. Additional work should be conducted to understand V2G issues from the consumer perspective. Roanoke Electric Cooperative in North Carolina has a V2G pilot program underway to explore whether this capability can assist the co-op in shaving peak demand and thus save money for the co-op and their consumer-members at the end of the line.[[1]](#footnote-1) The primary purpose of an electric vehicle is to go from point A to point B. A rush to turn them into mobile grid assets could result in significant delays in adoption.
* **Alignment with electric distribution interconnection processes:** Electric cooperatives are vital to ensuring that planned projects will be appropriately included in the electric distribution interconnection processes, including the extensive planning required, to ensure continued reliability of the system. Planning must be based on realistic long-term and short-term forecasts and must holistically incorporate resource planning, carbon policies, resource adequacy, and reliability. It must consider who may benefit from transportation electrification and allocate related investment costs appropriately. Finally, planning must be flexible enough to account for the uncertainty in identifying the benefits and burdens borne by various consumers, which may shift even as EV adoption spreads.
  + Early and often communication with the electric utility will be critical for maintaining grid reliability and managing costs as new loads are added to the system to support EV charging. There are already examples of 1 MW charging stations being built to support fleet electrification. 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.
  + Electric co-ops are planning to manage the anticipated impacts of localized pockets of higher electricity consumption among EV charging households connected to the same distribution transformer. This clustering effect can require transformers to deliver up to four times the normal amount of electricity, potentially leading to transformer overloading and accelerated transformer aging. Electric co-ops will need to manage EV charging at the residential level and via public charging both temporally and spatially to minimize financial and grid impacts that can result from clustering. This will take time and careful planning, again making coordination between the states and local entities funded through DOT’s programs with co-ops and other utilities critically important.
* **Plans for the use of renewable energy sources to power charging and energy storage:** While projects with plans to incorporate the use of renewable energy sources to power charging and energy storage may be encouraged in DOT’s guidance, we would strongly recommend that it not be a requirement. Incorporating renewables and/or storage may not be feasible or cost effective depending on the specific circumstances of a project location. As such, the lack of these resources as part of charging projects should not preclude them from being a part of the national charging network being built out and could inadvertently penalize the neighboring communities. As part of the planning process it should be determined if the use of onsite generation and potential benefits such as microgrids could be advantageous to the local utility and surrounding community. This requires planning and extensive stakeholder engagement to meet local conditions.

1. **The proximity of existing off-highway travel centers, fuel retailers, and small businesses to EV charging infrastructure acquired or funded under the Program;**

Oftentimes in rural communities the existing areas located immediately off interstate or state highway routes are limited to one or two gas stations and nothing more. Therefore, states and local entities evaluating projects under the DOT funding programs should not penalize rural communities when assessing sites for EV charging stations because there may be a lack of other existing infrastructure or businesses. While proximity to other amenities might be desirable in some contexts when building out the national charging network, this should not necessarily be required when assessing how to connect rural communities. Co-ops are interested in partnering with entities when possible in siting charging stations in rural communities. A focus on host sites that offer 24 hour access, restroom amenities and food is highly desirable.

1. **The need for publicly available EV charging infrastructure in rural corridors and underserved or disadvantaged communities;**

Electric cooperatives serve both rural and underserved or disadvantaged communities and thus know well the barriers facing both EV adoption and publicly available EV charging infrastructure in the areas they serve. Public charging poses an acute problem because the lower utilization rates at stations located in more remote, rural areas may not make economic sense today and may not for the foreseeable future, limiting interest from the private sector in investment. Recognizing this challenge, some of our members are still investing in public charging to benefit their consumer-members and provide economic development opportunities in the communities they serve. If the electric cooperatives do not step in to provide this infrastructure, it is not clear that any other private sector entities will. Electric cooperatives want to provide EV owners the peace of mind that chargers are available on their routes even if they are far away from home and to give consumer-members confidence to consider an EV and encourage growth in the EV market.

In addition, this topic is important to electric cooperatives because many consumers in rural communities are less affluent than those in other parts of the U.S. In 2019, the median household income for electric cooperative consumer-members was 11% below the national average. Electric cooperatives serve 92% (364 of 395) of the persistent poverty counties in the United States, and cooperatives serve an average of eight customers per mile of line and collect annual revenue of approximately $19,000 per mile; the other utility sectors average 32 customers and $79,000 in annual revenue per mile. The higher cost of EVs to date coupled with the costly upgrades required to install residential charging infrastructure (since 80% of charging is done at home) are barriers to EV adoption and mean that rural areas may see slower adoption of EVs than elsewhere in the U.S.

For these reasons, more federal support is required for public charging infrastructure in rural America to support economic development opportunities such as commercial fleet operation, tourism and general public travel. The funding provided to DOT via the BIL will be an important down payment to ensuring rural communities are not left behind in the electrification of the transportation sector.

1. **The long-term operation and maintenance of publicly available EV charging infrastructure to avoid stranded assets and protect the investment of public funds in that infrastructure;**

Electric cooperatives interested in providing these services should be eligible to provide some or all of the operation and maintenance needs of publicly available EV charging infrastructure funded through the BIL. However, they should not necessarily be required to and could also serve as valuable partners in providing the make-ready infrastructure to support the electric connection needs and leave the rest of the O&M to other project partners. State and local entities should have the flexibility to fund projects using all model types.

1. **Existing private, national, State, local, Tribal, and territorial government EV charging infrastructure programs and incentives;**

Cooperatives are engaged in several EV infrastructure initiatives. Each project is designed to meet the needs of the local community and the unique nature of the local markets. There is no one size fits all approach. Cooperatives in Oklahoma has partnered with a third party charging company with a goal of a well connected network to serve the rural areas of Oklahoma. Co-ops in North Carolina are installing and owning the chargers in tourist destinations served by the co-op but in areas that are not financially viable for a for-profit charging company. In the upper Midwest a group of cooperatives took another approach and invested in a third party charging network owner. They have leveraged this ownership stake in the company to begin a build out of a regional charging network that will help all EV drivers complete long distance and daily commutes throughout the upper Midwest.

1. **Fostering enhanced, coordinated, public-private or private investment in EV charging infrastructure;**

We strongly encourage DOT to clearly state and explain in the guidance to the states and local entities the value in partnering with the electric cooperatives in their states to serve the needs of the communities they serve. Electric cooperatives typically have more experience partnering with state energy and environmental agencies by nature of their primary responsibility of delivering affordable, reliable electric power rather than transportation agencies. It is important that state and local transportation agencies be made aware of electric cooperatives and the value they can bring in successfully implementing the funds from the BIL even if they are nontraditional partners to date. Encouraging state transportation agencies to partner or coordinate with state energy offices could foster collaboration and outreach to energy partners on the ground. Any guidance from DOT that lists potential partners (including co-ops) could also be helpful.

In our view, to foster more enhanced coordination it would be helpful for DOT to include a single grant template in the guidance provided to the states rather than ask each state to develop their own format. Such a template could contain language outlining the responsibilities of the state and ultimate grantee under a variety of scenarios, including in the event funds are made available but the charging station is not constructed. In addition, DOT could include a list on their website for the funding programs of the state contacts for grant applications. Such a central location for contact information would streamline the process and save time for all grant applicants.

1. **Meeting current and anticipated market demands for EV charging infrastructure, including with regard to power levels and charging speed, and minimizing the time to charge current and anticipated vehicles; and,**

Both mapping and close coordination with electric cooperatives and other utilities is critical to ensure the charging infrastructure is appropriately sized and that the necessary distribution and transmission upgrades are made to support reliability. Managing where and when charging occurs will be critical to limiting the need for infrastructure upgrades or incurring high costs for charging during peak periods.

Data shows that EV adoption is often geographically localized and can create pockets of higher electricity consumption among households that are connected to the same transformer. This phenomenon is often referred to as the “clustering effect.” Driving patterns, demographics, and other factors interrelate to create clusters. Even if adoption is low at the regional level, it is likely that EV ownership will be concentrated in particular areas or clusters. This makes the use of managed charging programs critical to the successful rollout of EVs on a large scale. However, there will still be situations where distribution transformers will need to be replaced and where older feeders may need to be upgraded.

It is critical that close coordination occur with the local utility and that charging infrastructure be developed that balances the desire for fast charge with grid reliability and reasonable infrastructure upgrade costs.

1. **Any other factors, as determined by the Secretary.**

We encourage DOT to make it clear in the guidance that the application process for both the formula and the grant programs should be simple and use as uniform as possible application template. For example, we encourage DOT to provide one application template for the states to use instead of directing them to each create their own using a different format. Applying to the states and local entities should not be overly burdensome or require project partners, including electric cooperatives, to hire consultants to complete the application process.

We also appreciate the opportunity to address the questions pertaining to the Charging and Fueling Infrastructure Program to provide grants for corridor and community charging in DOT’s RFI below.

1. **Please provide examples of best practices relating to project development of EV charging infrastructure and hydrogen, propane, and natural gas fueling infrastructure at the State, Tribal, and local levels.**

[Member examples to highlight here?]

1. **What topics do you suggest that we address in guidance on project development of EV charging infrastructure and hydrogen, propane, and natural gas fueling infrastructure at the State, Tribal, and local levels to allow for the predictable deployment of that infrastructure?**

We strongly encourage DOT to clearly state and explain in the guidance to the states and local entities the significant value in partnering with the electric cooperatives in their states to serve the needs of the communities they serve. Electric cooperatives typically have more experience partnering with state energy and environmental agencies by nature of their primary responsibility of delivering affordable, reliable electric power than with the transportation agencies. It is important that state and local transportation agencies be made aware of the role of electric cooperatives and the value they can bring in successfully implementing the funds from the BIL even if they have not been traditional partners to date.

Every effort should be made to require reasonable cost share. Not-for-profit electric cooperatives are often unable to participate in federal programs when cost share is greater than 30%.

We would also encourage DOT to provide sufficient flexibility in the guidance to avoid the supply chain constraints that could delay or disrupt charging projects from moving forward in a timely manner. Where possible, flexibility and consideration should be given to supporting the shift to domestic manufacturing at a pace that reflects the time it takes to build up such capacity as the electric vehicle market grows.

1. **Please provide any suggestions to inform the administration of competitive grants under the Charging and Fueling Infrastructure Program for corridor and community charging.**

Uniform national EV equipment standards, including communications and controls, are critical to reducing the cost of building out charging infrastructure and for V2G adoption. As standards are developed and adopted it is critical that electric utilities have a role in the process to avoid unintended consequences. Further, it is important that small entities such as electric cooperatives participate in the process because they face unique resource challenges that should be addressed at the outset. Leaving electric cooperatives and other utilities out of the standards development process could inadvertently result in lower or delayed EV adoption across the country, in particular in rural areas where the cost to deploy EV charging infrastructure may make less economic sense in the short term, and leave these communities behind in the transformation of the transportation sector.

In conclusion, electric cooperatives look forward to partnering with states and local entities through the new funding programs provided in the BIL to construct EV charging infrastructure. Electric cooperatives will make excellent partners as they have the knowledge and expertise to support robust planning and implementation of charging projects that will ensure federal dollars are expended efficiently, projects appropriately sized to account for current and planned charging needs, and reliability of the electric grid maintained. It is particularly important that co-ops be considered as valuable partners to ensure that the national charging network DOT is aiming to build out is inclusive of rural America.

Thank you for considering our comments. Please contact me at [stephanie.crawford@nreca.coop](mailto:stephanie.crawford@nreca.coop) or 703-907-5732 if you have any questions regarding these comments.

Sincerely,

Stephanie Crawford

Senior Regulatory Manager

National Rural Electric Cooperative Association

1. <https://www.cooperative.com/news/Pages/Roanoke-Electric-Tests-Innovative-EV-to-Grid-Charger.aspx> [↑](#footnote-ref-1)