

Clean Transportation **COLLABORATIVE**

SYNTHESIS OF STAKEHOLDER INPUT ON EQUITY IN ELECTRIC VEHICLE CHARGING INFRASTRUCTURE

Clean Transportation Collaborative
Spring 2023 Meeting

April 2023



Center for Advancing Research in
Transportation Emissions, Energy, and Health
A USDOT University Transportation Center

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Acknowledgments

The research team would like to thank The Center for Advancing Research in Transportation Energy and Health (CARTEEH) for support, and CTC members for their participation and insights.

Introduction

The Clean Transportation Collaborative (CTC) is an initiative of the Texas A&M Transportation Institute's Center for Advancing Research in Transportation Energy, Emissions, and Health (CARTEEH), which is a University Transportation Center (UTC) funded by the U.S. Department of Transportation (USDOT). The member-driven collaborative consists of stakeholders with interests in transportation emissions, energy, and health in both the private and public sectors across national geographic boundaries. The group convenes on a quarterly basis to connect stakeholders and generate conversation and ideas while sharing best practices and challenges in timely issues related to clean transportation.

On March 8, 2023, the CTC met on the topic of "Equity in Electric Vehicle Charging Infrastructure" for presentations and small group conversations. The goals of the meeting were to:

- Broadly discuss how to ensure equitable access to electric vehicle (EV) charging infrastructure
- Strengthen collaboration among CTC members to build productive relationships

The purpose of the CTC's virtual meeting on "Equity in EV Charging Infrastructure" was to engage with stakeholders regarding how to ensure EV charging infrastructure can be accessed by all members of the population, including those from disadvantaged communities. The agenda flowed as follows:

Agenda

- 11:00am – Opening Remarks from Joe Zietsman
- 11:05am – Equity in Transportation by Tamika Butler
- 11:20am - Equity in Access to Electric Vehicle(s)/Charging by Richard Ezike
- 11:35am - Q&A Session
- 12:00pm – Breakout Group Discussions
- 12:55pm – Report Back
- 1:25pm – Closing Remarks from Ben Ettelman

This event featured presentations by speakers Tamika L. Butler, Esq., of Tamika L. Butler LLC, and Dr. Richard Ezike, of the United States Joint Office of Energy and Transportation. After the two keynotes, participants self-selected into smaller break-out sessions that focused on specific subject material related to EV charging infrastructure and Equity.

Prior to the virtual event, the CTC drafted and released a paper entitled "[Ensuring Equitable Access to Electric Vehicle Supply Equipment in Disadvantaged Communities: Key Issues and Considerations.](#)" This paper provided a broad overview of topics that would be discussed during the event, including general information on policy and funding for EV charging infrastructure and how those elements connect to equitable access, safety outcomes, and economic impacts.

CTC members who participated in the event represented a range of organizations from private and public sectors including non-profits and academia. Represented organizations included U.S. Department of Transportation

(USDOT)—including national and regional offices of the Federal Highway Administration (FHWA)—the Texas Department of Transportation (TxDOT), metropolitan planning organizations (MPOs) in multiple states, city councils, universities, research organizations, utilities, private transportation and infrastructure companies, and many others. Attendees held a variety of positions within their organizations, including agency and executive directors, program and policy managers, planners, researchers, and professors. The diverse collection of participants allowed for constructive conversations both during question-and-answer sessions with the speakers, as well as during the breakout group discussions.

The following sections of this brief provide an overview of the expert speaker presentations as well as the main emergent themes that arose from the breakout room discussions. The brief concludes with suggestions for next steps for the CTC to continue to engage and support stakeholders in planning for and implementing EV charging infrastructure with equity in mind.

Expert Presentations

The event began with opening remarks from CARTEEH’s Director, Dr. Joe Zietsman, who provided the history and goals of the CTC, and introduced the event’s guest speakers. The first speaker, Tamika L. Butler, Esq., is an expert on issues related to equity in the built environment with a background in law, community organizing, and nonprofit leadership. In addition, they are the founder and principal of Tamika L. Butler Consulting, LLC. Ms. Butler’s presentation on “Justice Centered Work” focused on how systemic racism within the transportation system and the importance of solutions that emphasize inclusivity and social justice. Ms. Butler emphasized justice-centered approaches and using an equity framework to achieve mobility justice for all.

Following Ms. Butler, Dr. Richard Ezike, from the Joint Office of Energy and Transportation provided a presentation on “Ensuring Equitable Outcomes in Bipartisan Infrastructure Law (BIL) EV Charging Programs.” Dr. Ezike serves as a Program Communications Specialist at the Joint Office with expertise in stakeholder engagement and outreach. Dr. Ezike discussed priorities for the Joint Office as a result of the passing of the [Infrastructure Investment and Jobs Act \(IIJA\)](#) in November of 2021. The presentation included an overview of the various programs established in the IIJA, such as the National Electric Vehicle Infrastructure (NEVI) Formula program, the Charging and Fueling Infrastructure (CFI) Discretionary Program, the Low-No Emissions Grants Program for Transit, and the Clean School Bus Program. Dr. Ezike’s presentation built on the principals presented by Ms. Butler and discussed how the Joint Office can provide equity-related technical assistance to funding recipients, considerations associated with the [Justice40](#) initiative, workforce development issues, and economic opportunity considerations.

Participatory Breakout Conversations

Following the keynote speeches and a robust question and answer session with the experts, CTC participants split into virtual breakout rooms. Participants chose from breakout room topics and entered virtual that included a CTC facilitator that directed the conversation and maintained focus on equity throughout the discussion. In addition, each breakout room included a notetaker to record input from stakeholder participants. The following includes the three breakout room topics as well as the overarching questions of interest:

- 1) **Siting of EV Charging Infrastructure:** How to create equitable access to EV charging locations for all people, including those in disadvantaged communities?
- 2) **Safety / Security of EV Charging Infrastructure:** How to create safe and secure charging locations within disadvantaged communities?
- 3) **Economic Opportunities Associated with EV Charging Infrastructure:** How to ensure that the economic benefits arising from EV charging infrastructure are distributed equitable and sustainably?

Within the breakout rooms, the discussion facilitator and notetaker introduced the overarching questions and additional discussion prompts; stimulated dialogue; and took notes on participant contributions from which this brief was assembled. The facilitators introduced up to five discussion prompts, depending on the direction of conversation within each of the breakout rooms. These prompts asked about challenges and opportunities around quantitative and qualitative data and information; community engagement; workforce development and capacity; funding sources; and how to measure and assess equity.

Crosscutting Themes from Participant Discussion

Following the breakout room discussions, the meeting participants reconvened to report back and identify key crosscutting themes. The following three main themes emerged across the breakout groups:

- Infrastructure and Grid Safety and Security
- Community Engagement and Capacity
- Funding and Financing Priorities

The following subsections of this brief provide an overview of the information gathered during breakout sessions and the subsequent group discussions related to these main crosscutting themes.

Infrastructure and Grid Safety and Security

One of the main focuses of the CTC meeting was on the safety and security concerns surrounding infrastructure and grid systems, specifically for electric vehicle (EV) charging stations and their associated software.

Conversations on this topic emerged in all three topical breakout rooms, with heaviest engagement in the topic in the Safety/Security room. Physical safety concerns centered around women and pedestrians and the importance of siting where people, vehicles, and infrastructure are safe—both in terms of perceived safety and actual safety.

With respect to concerns for women and pedestrians, participants stressed the importance of providing adequate lighting at EV charging stations. These groups are inclusive of nearly all EV charger users, as people become pedestrians as soon as they leave their vehicle to interact with the charging infrastructure. While some people may sit in their vehicles during charging, those who do not will continue to interact with the surrounding environment as a pedestrian. Participants also emphasized the need to design charging stations with clear visibility and accessibility for people of varied physical abilities. Moreover, participants in multiple breakout rooms discussed potential threats to charging stations and infrastructure, such as extreme weather conditions and criminal activities, and discussed how strategies could be developed to minimize the impact of these threats.

All three breakout rooms included conversations on the significance of choosing appropriate locations for charging stations to ensure security and accessibility while facilitating additional goals, including economic opportunity. Factors such as lighting and visibility, proximity to major roads and services, and availability of support services were considered crucial for selecting sites with added potential safety benefits. A comprehensive vulnerability assessment was also deemed useful to have experts identify potential risks and weaknesses in the EV charging infrastructure, along with developing appropriate mitigation strategies based on the assessment.

In the siting room, participants discussed the potential consequences of network failures, such as in rural areas with low network access, and their impact on charging systems. Developing contingency plans and redundancies to minimize disruptions was suggested as a solution. Multiple rooms included conversations around addressing cybersecurity threats, such as ransomware attacks, and participants called for establishing a response plan that includes measures for threat detection, containment, and recovery.

The vulnerability of various components of the EV charging ecosystem, including vehicles, charging stations, and software interfaces, was also assessed. Participants discussed both physical and cyber security concerns to ensure

comprehensive security. Understanding the lifecycle of EV charging systems and planning for regular maintenance were considered essential to keeping these systems secure and reliable. The attendees acknowledged that vendors, such as gas stations, would want their EV stations to be just as safe as their traditional counterparts. They recommended prioritizing safety features at EV charging stations, such as video surveillance; onsite support; lighting; and overhead shelter coverage. They also emphasized the need to market the safety aspects of the EV station to build public trust and confidence.

Focusing on equity for various disadvantaged communities, participants addressed the importance of considering the safety and security concerns of vulnerable communities when designing and implementing EV charging infrastructure. Measures to prevent unauthorized unplugging or damage to EVs while charging were also discussed. The participants recognized that drivers prioritize safety and cleanliness and that EV stations should be designed accordingly. Ensuring financial security and stability for the charging infrastructure through proper planning and risk management was another topic covered during the meeting. The attendees also differentiated between actual safety measures and public perception of safety, stressing the importance of addressing both aspects. To enhance the feeling of safety, participants in the siting breakout room explored opportunities to collaborate with food trucks or other vendors for EV charging station siting.

Finally, participants suggested conducting surveys to gather insight into public perception of safety at EV charging stations. This information could be used to inform the design and implementation of future charging infrastructure, ultimately creating a safer and more secure environment for all EV users. Utilizing public engagement as a form of planning for safety and security at EV charging locations is also a way to increase equitable outcomes through community participation.

Community Engagement and Capacity

The CTC meeting underscored the significance of community engagement and capacity building as crucial components for ensuring equity in the adoption and implementation of electric vehicle (EV) charging stations. The key points discussed in the breakout rooms included collaboration between public and private entities, challenges faced by low-wealth communities, communicating safety aspects of EV stations, and full-service EV hubs (see below). The attendees emphasized the importance of collaboration between public and private sectors especially in the development and deployment of EV charging stations. They recognized that a strong partnership would enable better resource allocation, shared expertise, and a more coordinated approach to address the challenges associated with EV infrastructure, including in disadvantaged communities.

One of the concerns raised during the meeting was the potential resistance to EV charging installing from low-wealth communities that might not be able to afford EVs now or in the future. The participants acknowledged that these communities might question the need for EV charging stations, which could pose a problem for widespread adoption and equitable distribution of benefits. To address this issue, the attendees in multiple rooms suggested targeted outreach programs to connect with community leaders and educate communities about the long-term benefits of EV adoption, such as reduced air pollution and cost savings. Marketing the safety aspects of EV stations was considered crucial in building public trust and encouraging the use of EV charging infrastructure. The participants also discussed conducting surveys to gauge people's perception of safety at EV stations. This information could help refine marketing strategies and improve safety features based on community feedback.

The concept of full-service EV hubs was introduced in the siting room, suggesting collocation of a range of amenities to EV users, such as charging stations, vehicle maintenance, and retail services. Attendees noted that it is essential to determine the unique needs and expectations of each community to define benchmarks for success for these hubs. Industry buy-in and clear communication lines with the trucking industry were deemed necessary to access funding from sources like the National Electric Vehicle Infrastructure (NEVI) program. The participants

highlighted that communities often need more help with grant writing capacity and suggested providing training and support to enhance their ability to secure funding for EV projects.

A strong workforce, comprising of skilled workers in the EV charging sector, was identified as crucial for the successful implementation of EV infrastructure and equitable distribution of workforce benefits. The attendees proposed the development of training programs to ensure a robust workforce capable of meeting the demands of the growing EV market.

Meeting participants in all three rooms explored strategies for engaging local businesses such as "mom and pop" stores and businesses owned by members of historically disadvantaged populations and encouraging them to buy into the concept of EV charging stations. Participants discussed potential incentives, such as financial support and marketing assistance, to help these small businesses adapt to and benefit from the emerging EV ecosystem.

Funding and Financing Priorities

The meeting conversation on funding and financing priorities for electric vehicle (EV) charging stations emphasized community engagement, financial security, and equitable distribution of resources. Key points included exploring potential financial resources, grant writing support, successful funding and financing models, access to funds, and sustainable funding strategies for disadvantaged communities.

Participants in multiple breakout rooms discussed potential financial benefits for communities if they were to sell or market additional products or services at the EV station. This approach could not only provide a source of revenue for the community but also enhance the overall user experience—including safety, efficient use of time, and comfort—at the charging station.

The Economic Opportunity room discussed equitable access to funds over time, and suggested the establishment of a standard program for grant writers, similar to the Americorps model. They proposed having a grant writer in every community center to help secure funding for EV-related projects and to support equal opportunities to access funds across communities of varied wealth and socio-demographic populations. The participants in this room also deliberated on defining a successful funding model, with particular focus on ensuring equitable access to funds for smaller businesses in the trucking industry. Small businesses were identified as being entities that are unaware of how to access federal funding through programs like the NEVI and CFI programs. Participants emphasized the need for better communication and support to help these businesses tap into available resources.

In order to allocate funds effectively, attendees stressed the importance of investing "smartly" by considering the structure and nature of various industries. The participants acknowledged that many organizations struggle with a "bottom-up" approach to applying for grants and require additional assistance in navigating the application process.

With significant funds allocated through IJJA, attendees questioned whether transportation agencies need to make an extra effort to secure infrastructure funding from components and programs of the new federal law with explicit equity considerations expressed in the laws and regulations. Meeting participants recognized that larger corporations often have an advantage over "mom and pop" businesses due to their resources and their ability to get a head start in accessing funds. To address these concerns, the participants discussed the development of funding models that ensure that public money is accessible to disadvantaged communities. This could involve creating sustainable funding strategies that redistribute benefits to certain communities and promote equitable growth. The challenge of directing funds to the right places to be used effectively was also addressed.

Lastly, meeting participants explored the allocation of funds for maintaining and operating charging stations once they have been installed. Attendees stressed the importance of planning for long-term maintenance and operations to ensure the continued success and viability of EV charging infrastructure.

Next Steps

The CTC will distribute this brief back to CTC members to share with their organizations as a point of reference for decision-making at their organizations. In addition, the lessons learned and questions raised from stakeholders will shape future CTC and CARTEEH research in the area of clean transportation and equity. Future convenings of CTC members will build on the information exchange and ideas from this meeting.