

Author: Erin Nobler, NREL

Presentation Title: Understanding Equity Within the Bounds of Electric Vehicle Infrastructure Accessibility

Abstract: Electric Vehicle (EV) adoption in the United States has increased rapidly in the last few years. However, as with many new technologies, there is a real risk that EV adoption will be concentrated to limited geographic and demographic markets, minimizing the benefits to underserved populations that are already more susceptible to lower air quality and higher vehicle ownership burdens. To ensure a just and equitable transition to low and zero-emitting EVs, affordability and accessibility for a broader segment of the population must be established. The availability of public charging infrastructure is a critical component of enabling drivers to choose EVs, particularly for those who do not have access to dedicated home charging. With the growing availability of EV models and an increase in available lower-cost and used EVs, it is essential to understand if these stations are available to all drivers, including those who rent or live in multifamily dwellings. The National Renewable Energy Laboratory (NREL) maintains the Alternative Fueling Station Locator, which is a database of alternative fueling stations in the United States. With respect to electricity, there are more than 25,000 public EV charging stations in the United States. NREL will complete a GIS analysis of current EV charging station locations in multiple major metro areas in the U.S. using Environmental Protection Agency (EPA) environmental justice data, land use and rental data, and census-block level socio-economic and demographic factors. This analysis will provide insights into potential gaps in current EV charging infrastructure with an emphasis on equitable access for all EV drivers. This analysis will demonstrate how the current deployment of EV charging across the U.S. serves communities across various socio-demographic factors and where efforts and programs may be considered to support additional EV charging development to serve low-income and disadvantaged communities.