

# CURE-E Project Proposal: Growth and Accessibility of Public EV Charging Infrastructure

## Executive Summary

This project seeks to explore the development of public Electric Vehicle (EV) charging infrastructure across the United States, with a specific focus on the deployment of DC Fast charging capabilities over the last five years. By mapping the expansion and examining the statewise distribution of these critical assets, the study aims to illuminate the progress made towards supporting the adoption of electric vehicles. Insights generated could inform stakeholders on strategic directions for future infrastructure investments and policy formulations.

## Research Question

"How has the availability and growth of public EV charging stations, particularly those equipped with DC Fast charging capabilities, varied across states in the United States over the past five years?"

## Stakeholders

**Policy Makers and Urban Planners:** Equipped with detailed infrastructure growth data, they can prioritize investments and policies that address current gaps in the EV charging network.

**EV Manufacturers and Retailers:** Understanding the landscape of charging infrastructure supports the development of market strategies aligned with consumer needs.

**Environmental Organizations:** Armed with growth data, they can better advocate for the expansion of EV charging infrastructure as a key component of sustainable transportation ecosystems.

**Electric Vehicle Owners and Potential Buyers:** Insights into the evolving infrastructure landscape can influence individual decisions regarding EV adoption.

## Dataset and Data Fields Focus

### # Dataset Utilization

This analysis leverages the alternative fuel station dataset provided by the U.S. Department of Energy's National Renewable Energy Laboratory (NREL), focusing on data related to EV charging stations across the United States.

### # Key Data Fields

**Open Date ('open\_date'):** Essential for analyzing the timeline of EV station deployments.

**Location Data ('city', 'state', 'zip'):** Critical for identifying geographical trends in EV infrastructure growth.

**Station Status ('status\_code'):** To isolate currently operational charging stations.

**Access Code ('access\_code'):** To identify stations available for public use.

**Charging Capacity ('ev\_dc\_fast\_num'):** To focus specifically on the availability of DC Fast charging stations, crucial for supporting longdistance EV travel.

## Methodology

The project methodology integrates both quantitative and qualitative analyses:

**Geographical Distribution Analysis:** Employing GIS tools to visualize the spread and concentration of DC Fast charging stations across various states.

**Growth Trend Analysis:** Utilizing statistical techniques to quantify the year-over-year growth of public EV charging infrastructure, with a particular emphasis on DC Fast charging capabilities.

**Comparative State Analysis:** Identifying leaders and laggards in the deployment of public EV charging stations to highlight regional disparities and best practices.

## Conclusion

This study aims to provide a comprehensive overview of the current state and growth trends of public EV charging infrastructure in the United States, with a focus on enhancing the accessibility and convenience of electric vehicle usage through DC Fast charging. The findings are intended to serve as a foundation for informed decisionmaking among stakeholders, promoting the continued expansion of the EV charging network to meet the needs of an increasingly electrified transportation sector.