Just Transition to Electric Vehicles in Disadvantaged Communities: Integrating Transportation, Energy and Climate Justice

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Highlights

- We analyzed semi-structured interviews with 45 individuals in underserved neighborhoods
- We found themes of injustices related to transportation, energy, climate change and EVs
- Analysis also resulted in subthemes of environmental injustices and solar equity gap
- Results suggest the need for restorative justice to achieve better outcomes in EV transition

Abstract

Electric vehicle (EV) adoption rates show disparities across cultural, political, and socioeconomic contexts and conditions. Various communities face challenges of feasibly adopting emerging energy technologies such as rooftop-solar-powered EVs, vehicle-to-grid, and vehicle-to-home energy transfers. Low-income communities face the most disproportionate rates of adoption and transportation electrification risks perpetuating existing injustices in the face of climate change. To date, the connections between transportation, energy, and climate justice have been understudied. We conducted semi-structured interviews in 5 languages with 45 individuals mainly in a diversity of underserved neighborhoods of Columbus, Ohio to examine how EV adoption intersects with pervasive energy and transportation poverty and climate injustices. A reflexive thematic analysis resulted in four main justice themes related to transportation, energy, climate, and EV adoption. We also identified sub-themes of environmental justice issues under the transportation justice theme, solar equity gap under the energy justice theme, and five EV subthemes including barriers to EV adoption, affordable energy support, perceived health and air quality benefits, climate benefits, and economic benefits. The results suggest that there is a need to rectify past injustices in transportation and energy systems to achieve better outcomes. Our findings are important for addressing systemic barriers that perpetuate existing injustices when designing just EV transition policies that leave no one, including the poorest, behind.

Keywords: *Transportation justice, energy justice, climate justice, electric vehicles, just transition*