Review of: "Evaluating EV User Behavior on Aggregator Smart Charging with ESS and Real-Time Pricing-Based Demand Response"

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Potential competing interests: No potential competing interests to declare.

This study offers a comprehensive and forward-thinking approach to addressing the challenges posed by rising global electricity consumption. By prioritizing energy efficiency and the integration of electric vehicles (EVs) into energy markets, governments can make significant strides towards sustainability and resilience.

The evaluation of EV aggregator strategies using smart charging methods represents a crucial step towards optimizing energy usage and grid stability. By modulating charging power rates based on user preferences, the study demonstrates a nuanced understanding of consumer behavior and its impact on overall energy demand.

The simulations conducted in Quito's distribution system provide valuable insights into the potential impacts of various aggregator actions on costs and technical conditions. This empirical approach allows for a robust assessment of demand response (DR) strategies, particularly in residential areas, where EVs can serve as effective energy storage solutions through vehicle-to-home (V2H) and vehicle-to-grid (V2G) options.

The collaborative evaluation of dynamic-pricing and peak power limiting-based DR strategies, along with the incorporation of bi-directional EV and energy storage system (ESS) use, showcases the study's innovative approach to optimizing energy management. The integration of a novel mixed-integer linear programming (MILP) model for home energy management (HEM) further enhances the analysis by considering distributed renewable energy, diverse DR strategies, and EV owner preferences.