

SUS09

Prioritizing Key Factors in EV Charging Station Site Selection: AHP Model Application in Los Angeles Metro Area

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Abstract

With the growing urgency to mitigate global pollution, California has taken a bold step towards environmental sustainability by mandating the cessation of gasoline car sales by 2035. This executive order underscores the pivotal role of Electric Vehicles (EVs) and their supporting infrastructure, particularly EV Charging Stations (EVCS). As the demand for EVCS intensifies, researchers have focused on predicting the requisite charging infrastructure needed by 2035. This paper synthesizes existing literature on methodologies for identifying optimal EVCS locations, emphasizing criteria such as transportation network integration, proximity to main roads, accessibility to major amenities, existing EVCS distribution, land value considerations, power grid capacity, EV driver demographics, and population density. Notably, the Analytic Hierarchy Process (AHP) is employed to systematically evaluate and prioritize these criteria based on survey responses. This research contributes a structured approach to inform decision-making in expanding EVCS networks, crucial for supporting California's ambitious emissions reduction goals.

Conference Track

Sustainability Issues in Decision Making