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Improved Design of Solar Powered EV Charging Infrastructure with Smart Payment System using Advanced Grid Connection System

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As electric vehicles (EVs) continue to gain traction as a reliable alternative to gasoline-powered cars, the need for efficient and sustainable charging solutions is growing. One promising option is solar-powered EV charging, which offers a cleaner and more eco-friendly alternative to traditional grid-based charging. By harnessing solar energy, these charging stations provide renewable power to EVs, reducing reliance on fossil fuels and minimizing environmental impact. This project focuses on developing an advanced solar-powered EV charging station that integrates key components such as solar panels, energy storage systems, smart grid connectivity, and an optimized charging infrastructure. The goal is to create a cost- effective and sustainable solution that supports the transition to greener transportation. By combining renewable energy with electric vehicle technology, this initiative contributes to energy sustainability while helping to lower the carbon footprint of modern transportation. Keywords: EV charging, Vehicle-Grid Technology, Smart Grid

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