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Patent Search

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Abstract:

An advanced system for optimizing electric vehicle (EV) charging schedules is presented, incorporating real-time data analytics, predictive algorithms, and user custom efficiently manage energy consumption. This system aims to balance multiple objectives, including minimizing electricity costs, optimizing the use of renewable energy grid load during peak times, and catering to individual user charging needs. The invention's adaptability allows it to integrate seamlessly with existing EV infrastructure scalable and user-friendly solution that enhances the sustainability and economic viability of EV charging.

Complete Specification

Description:The field of multi-objective optimization of electric vehicle (EV) charging scheduling is a dynamic and complex area of research and development. This field focuses on creating algorithms and systems to optimize the charging schedules of electric vehicles in a way that balances multiple objectives. These objectives often include minimizing the cost of charging, reducing the impact on the electrical grid, maximizing the use of renewable energy sources, and ensuring that the vehicles are adequately charged for their users' needs. With the growing adoption of electric vehicles, the need for efficient and intelligent charging strategies is becoming increasingly important. Background of the proposed invention:

The proposed invention in the realm of multi-objective optimization for electric vehicle (EV) charging scheduling stems from a growing need to address the complex challenges associated with the widespread adoption of electric vehicles. As the number of EVs on the road increases, there is a significant strain on the existing electrical grid, which was not originally designed to handle such high and variable loads. Traditional charging methods, where EVs are charged as soon as they are plugged in, often lead to long wait times, resulting in higher electricity costs and potential grid instability.

Moreover, the environmental benefits of electric vehicles are maximized when they are charged using renewable energy sources. However, the intermittent nature of renewable energy sources like solar and wind power presents a challenge for consistent and reliable EV charging. This variability necessitates the development of smart charging systems that can adapt to changes in energy availability and demand.

The proposed invention aims to address these challenges by developing an advanced scheduling system that optimizes the charging of electric vehicles based on multiple objectives. These objectives include minimizing the cost of electricity, reducing the load during peak periods, maximizing the use of renewable energy, and ensuring that each vehicle is charged according to the user's needs and schedule. By taking into account various factors such as the state of the electrical grid, the availability of

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