

Cost-effectiveness analysis of bidirectional charging for photovoltaic energy storage containers

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Bidirectional charging describes the technology of not only charging an electric vehicle from the grid, but also feeding electricity back into the grid or to consumers. This is often referred to as Vehicle-2-Grid ...

The objective of this article is to propose a photovoltaic (PV) power and energy storage system with bidirectional power flow control and hybrid charging strategies.

In order to answer this question, a numerical analysis performed to evaluate the impact of bidirectional charging on self-consumption, grid reliance, energy costs, and CO2 emissions in ...

In this paper, an energy management algorithm of a PVCS formulated with mixed-integer linear programming is presented to minimize the total energy cost of the participation of EV users in ...

Our study is significant for its in-depth assessment of the integration of EVs as dynamic components in VPPs, addressing the challenges and opportunities they present in the context of an ...

The case study focuses on rural distribution grids in Southern Germany, projecting the repercussions of different charging scenarios by 2040. Besides a Vehicle-to-Grid scenario, a mixed ...

In this case study, a Truncated Gaussian distribution function determines EV's time of arrival and departure. This study uses regulation signals provided by the Independent Electricity ...

Abstract: A four-stage intelligent optimization and control algorithm for an electric vehicle (EV) bidirectional charging station equipped with photovoltaic generation and fixed battery energy storage ...

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