



BUHLE POWER

# Energy storage batteries shift peak loads





## Overview

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Can plug-in electric vehicle battery storage reduce peak load and frequency regulation?

The present research explores the potential for Plug-in Electric Vehicle (PEV) battery storage in shedding peak load (peak-shelving) and frequency regulation in distribution networks.

What is load shifting?

The concept of load shifting is nothing new, in fact, industrial and commercial sites have been using this technique for many years to optimize energy consumption and reduce electricity costs. Load shifting is an electricity load management technique in which load demand is shifted from peak hours to off-peak hours of the day.

What is the peak time of a power supply?

The most significant feature is the evening peak (18:00-22:00), where Power demand surges to approximately 3000 kW. This peak coincides with maximum residential activity when households simultaneously engage in high-energy consumption activities such as cooking, heating/cooling, and entertainment systems.

How do EV batteries work?

During high-demand times, accessible EV batteries are drawn upon to maintain Power on the grid. On the other hand, during the low Load, the system operates in the watchful mode and charges EVs when the Load is convenient. The algorithm maintains power balance and battery status; the system logs are detailed.



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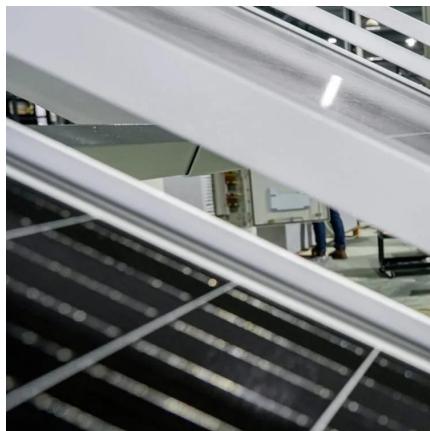
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