



BUHLE POWER

# Venezuela energy storage peak-shaving power station





## Overview

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Energy storage (ES) can mitigate the pressure of peak shaving and frequency regulation in power systems with high penetration of renewable energy (RE) caused by uncertainty and inflexibility. However.

Can a battery energy storage shave demand at peak times?

The maximum demand charge is usually imposed on the peak power point of the monthly load profile, hence, shaving demand at peak times is of main concern for the aforesaid stakeholders. In this paper, we present an approach for peak shaving in a distribution grid using a battery energy storage.

Can a battery storage control scheme be used for peak shaving?

This paper proposes a battery storage control scheme that can be used for peak shaving of the total grid load under realistic conditions. Particularly, a rule-based approach combined with a deep-learning load forecasting model is developed and its performance is compared with the theoretical optimum based on real data from the field.

Why do grid operators shave demand at peak times?

Grid operators are charged not only by their total energy demand, but also by their highest power demand from the superior grid level. The maximum demand charge is usually imposed on the peak power point of the monthly load profile, hence, shaving demand at peak times is of main concern for the aforesaid stakeholders.

How robust is peak shaving strategy for load forecasting error levels?

Moreover, the robustness of a peak shaving strategy has to be ensured for various load forecasting error levels, since high inaccuracies can lead to low peak reductions. Hence, it is a challenge for the grid operator to utilize optimally a stationary BESS for peak shaving. 1.2. Literature review



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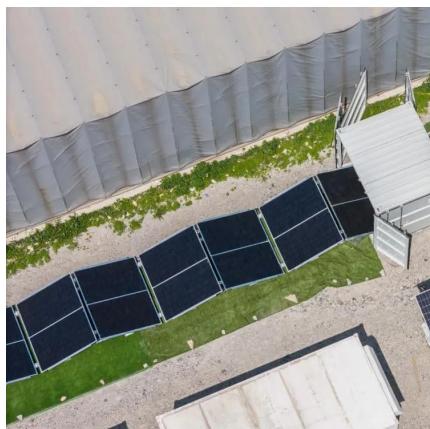


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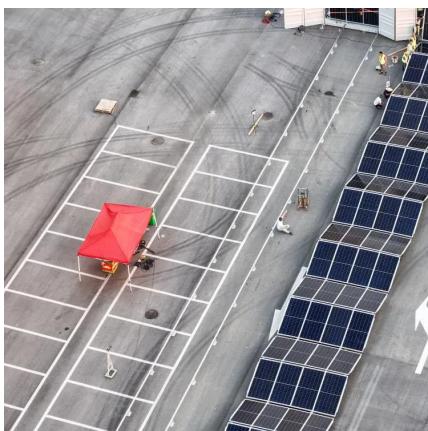


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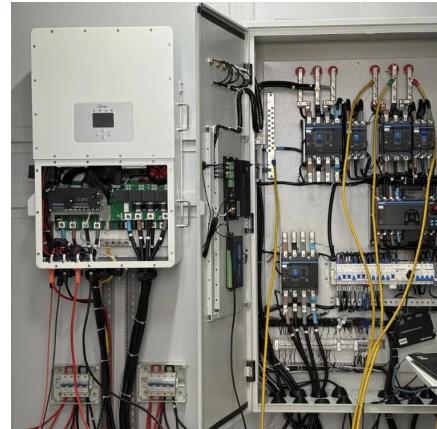
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