

## A-Core Container

# Suriname grid-side energy storage peak-shaving and valley-filling cooperation



## Overview

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Does overloaded power grid affect peak shaving and valley filling?

The decreasing proportion of the peak-valley difference between the power grid and users' electricity purchasing costs are both lower than that in the base case when the load reduces by 20%. Thus, the dynamic price mechanism proposed in this study exhibits more obvious effects on peak shaving and valley filling when the power grid is overloaded.

Can a power grid-flexible load bi-level operation model save energy costs?

peak shaving and valley filling compared with the conventional fixed price mechanism. Based on the findings, the power grid-flexible load bi-level operation model based on the dynamic price proposed in this study can reduce the dispatching cost of the power grid and save energy costs for users. This model is co.

Can flexible load participate in peak shaving and valley filling?

(2) A dynamic price incentive mechanism for peak shaving and valley filling is proposed in this study. The dynamic price mechanism can thoroughly explore the potential of the flexible load in participating in peak shaving and valley filling compared with the conventional fixed price mechanism.

How do peak-valley differences affect power grid dispatching costs?

and power grid dispatching costs under three different situations are shown in Table 3. Mitigating the peak-valley difference can alleviate the power supply pressure, enhance power supply reliability, and improve the efficiency of power resource use. Meanwhile, excessive peak-valley differences can impact the formulation.

How does  $G_y$  affect peak-valley difference in a power grid?

As  $G_y$  expands, the widening of the peak-valley difference in a power grid becomes evident. To address this problem, a p.

How can peak shaving and valley filling improve energy consumption?

The practices of peak shaving and valley filling not only address the economic aspects of energy consumption but also enhance the reliability and sustainability of energy infrastructures.

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