

What is waste heat storage peak load regulation

What is peak load regulation?

To balance the peak-valley (off-peak) difference of the load in the system, the power system peak load regulation is utilized through adjustment of the output power and operating states of power generator units in both peak and off-peak hours.

Can thermal units be used in peak load regulation?

The proposed method was verified in a real prefecture-level urban power system in southwest China, and its modified test systems. The case studies demonstrated the intrinsic capacity of the thermal units in the system peak load regulation.

What is the optimal scheduling model for power system peak load regulation?

Conclusion This paper presented an optimal scheduling model for power system peak load regulation considering the short-time startup and shutdown operations of a thermal power unit. As the main resource on the generation side, the intrinsic capacity of the thermal units in the system peak load regulation was studied in this paper.

How does peak load regulation affect the power system?

The peak load regulation problem causes challenges to the power system, and countermeasures are studied on the demand side and the generation side. On the demand side, demand response programs encourage consumers to reduce and/or shift their electricity usage during peak hours.

How are power units compensated for peak load regulation?

For power units participating in deeper peak load regulation, the compensated electricity quantities are determined by regulation durations and the difference between the actual load rate and the lower bound of the basic regulation range. The compensation standards are under a set of piecewise progressive rules, as displayed in Table 3.

What is peak regulation?

Peak-regulation refers to the planned regulation of generation to follow the load variation pattern either in peak load or valley load periods. Sufficient peak-regulation capability is necessary for the reliable and secure operation of power grid, especially in urban regions with extremely large peak-valley load difference (Jin et al., 2020).

However, current approaches to utilizing energy storage as a flexibility resource often overlook the coordinated application of multiple energy storage systems for peak shaving ...

To improve the energy utilization efficiency and electricity regulation range of thermal power plants, Wu et al.

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[27] proposed a new type of peak shaving synergy system with ...

This limits the amount of the acceptable renewable electricity by the grid or the peak regulation capability. On the other side, when the electricity load decreases, the corresponding heat ...

What is a peak load regulation model? A corresponding peak load regulation model is proposed. On the generation side, studies on peak load regulation mainly focus on new construction, for ...

Heat-power decoupling is a key issue to be addressed for the combined heat and power (CHP) unit to enhance its operational flexibility, and utilizing heat storage in district ...

In order to achieve the carbon neutral goal, more attention to the construction of gas-fired power plants for peak regulation has been paid; see, for example, [18]. To improve ...

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