

# IMPROVE THE ENERGY STORAGE COMPENSATION MECHANISM



What is a full power compensation strategy? At present, the full power compensation strategy is a main control strategy to realize the AGC frequency regulation control of thermal power units combined energy storage system, which refers to the deviation between the actual output of the units and the AGC signals within the allowable range of energy storage system.



Can energy storage technology improve frequency regulation performance? According to the above analysis, the energy storage technology can effectively improve the frequency regulation performance by assisting thermal power units to participate in power grid frequency regulation, and the control strategy proposed in this paper can prolong the service life of the energy storage system.



What happens if the SOC of the energy storage system exceeds the limit? When the SOC of the energy storage system exceeds the limit, emergency charging and discharging is implemented for the energy storage system. When  $SOC > SOC_{max}$  ( $SOC_{max} = 0.9$ ), the energy storage system discharges at the maximum discharging power (??? PB1 ).



How to compare the economy of combined energy storage systems? In order to compare the economy of the two strategies, the rain-flow counting method is used to calculate the equivalent cycle life of the energy storage system, and then according to the Net Present Value (NPV) method, the overall economy of the combined energy storage system under the whole life cycle is calculated.



Can the energy storage system compensate for the deviation between AGC signals? Limited by the capacity of the energy storage system and the constraints of the operation, the energy storage system cannot completely compensate for the deviation between the output of thermal power units and the AGC signals.

# IMPROVE THE ENERGY STORAGE COMPENSATION MECHANISM



How does the energy storage system compare with full power charging and discharging? Compared with the full power charging and discharging strategy, the average daily charge and discharge times of the energy storage system are reduced by 0.6849 times, and the equivalent cycle life of the energy storage system is increased to 7.3593 years, and the final NPV reaches 13.4272 million USD.



[14],,,, ???



In the formula,  $d(t)$  is the transformation ratio of the ideal transformer;  $U_{gd}$  and  $U_{gq}$  are the d-axis and q-axis components of the DC/AC AC side output voltage on the dq-axis, ???



Its 14th Five-Year Plan for Energy Development proposes further improving the energy storage and transportation network and making several centralized electrochemical ES power plants. However, there is currently no ???



This paper first investigates the experience of the mechanism design about the capacity profit of storage in the power market, then proposes capacity compensation mechanism for storages ???

# IMPROVE THE ENERGY STORAGE COMPENSATION MECHANISM



These results again verify the effectiveness of I/O compensation mechanism when energy-efficiency is concerned. Data center peak power management with energy storage ???



Based on the "Opinions on Further Improving the Price Formation Mechanism for Pumped Storage" and the "Plan on Deepening the Reform of the Price Mechanism during the 14th Five-Year" period, the country clearly ???



Therefore, data centers have been striving to: 1) improve energy efficiency in server operations by applying server provisioning techniques, and 2) utilize renewable energy and ???



The upper layer establishes a real-time price-based demand response mechanism for the load side with the minimum net load fluctuation as the objective function; the middle ???