
Can energy storage configuration schemes be tailored for new energy power plants?
This paper proposes tailored energy storage configuration schemes for new energy power plants based on these three commercial modes.

What is energy storage system planning?
The purpose of energy storage system planning is to store the surplus electricity generated during the process of new energy generation,thereby reducing the costs associated with curtailed wind and solar power,enhancing the economic efficiency of power system operation,and ultimately lowering the overall cost of distribution networks.

Why do new energy power plants need energy storage?
Due to the uncertainty in the output of new energy power plants,there is a phenomenon of power curtailmentduring actual output. By configuring energy storage,new energy power plants can store the excess energy and discharge it when the output is insufficient,thus compensating for the power deficit.

How is energy storage planning based on stochastic optimization?
The proposed planning framework is modelled as a two-stage MILP modelbased on scenarios via the stochastic optimization method. In the first stage,investment decisions are made for two types of energy storage: battery energy storage (short term) and hydrogen energy storage (long term).

Among them, user-side small energy storage devices have the advantages of small size, flexible use and convenient application, but present decentralized characteristics in space.

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