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China Southern Power Grid Peak-Valley Energy Storage



Overview

How will China's energy storage capacity grow in 2035?

Under cost preference, the average annual growth rate is as high as 8.3%, and the cumulative power capacity will reach 117.1 GW in 2035. Fig. 3. Optimized cumulative power capacity and investment of energy storage. In 2020, pumped storage accounted for 90.6% of China's energy storage power capacity, taking the absolute lead.

What is China's energy storage capacity?

China's optimal energy storage annual new power capacity is on the rise as a whole, reaching peak capacity from 33.9 GW in 2034 (low GDP growth rate-energy storage maximum continuous discharge time-minimum transmission capacity (L-B-Mi scenario) to 73.6 GW in 2035 (H-S-Ma scenario).

What is the peak year for energy storage?

The peak year for the maximum newly added power capacity of energy storage differs under different scenarios (Fig. 7 (a)). Under the BAU, H-B-Ma, H-S-Ma, L-S-Ma, and L-S-Mi scenarios, the new power capacity in 2035 will be the largest, ranging from 47.2 GW to 73.6 GW.

Which energy storage capacity will grow the fastest?

Therefore, under the H-S-Ma scenario of a minimum continuous discharge time and maximum power transmission energy, China's optimal energy storage capacity will grow the fastest, with an average annual growth rate of 17.6%. The larger the power transmission capacity is, the smaller the cumulative power capacity of energy storage.

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To support long-term energy storage capacity planning, this study proposes a non-linear multi-objective planning model for provincial energy storage capacity (ESC) and ...

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