



## Energy storage parity on the power generation side

What is shared energy storage? The role of shared energy storage on the power generation side of the power system differs from the previous two applications. It serves to support the operation of thermal power units, enhance the reliability of renewable energy generation connected to the grid, and potentially remove the need for constructing alternative units. Can shared energy storage be implemented in power generation side? The proposed operation and cost-sharing model is anticipated to serve as a useful reference for the widespread implementation of shared energy storage in power generation side.

### 1. Introduction

#### What is grid parity?

Grid parity occurs when the cost of solar or other alternative energy sources is equal to or less than purchasing electricity from traditional fossil fuel-based power plants. At the point of parity, renewable energy becomes an economically viable option without the need for subsidies or government incentives.

#### What is a shared energy storage-assisted power generation system?3. Combined operational and cost allocation models for shared energy storage-assisted power generation systems Here, the power generation system comprises a collection of renewable energy power stations ( $n = 1, 2, \dots, n, \dots, N$ ), specifically wind power plants and photovoltaic power plants, which are connected to a shared energy storage power station. Can a centralized shared energy storage mechanism be implemented in power generation side? 5. Conclusions and future research directions This paper proposed the implementation of a centralized shared energy storage mechanism in power generation side, which enables multiple renewable energy power stations to collaborate and invest in a shared energy storage system. What factors affect grid parity? Grid parity is influenced by several factors, including: The declining cost of renewable energy technology, particularly solar panels and wind turbines. The increased efficiency and energy output from renewable technologies. The rising dynamic energy cost of fossil fuels due to supply chain disruptions and geopolitical factors. Due to the intermittency and unpredictability of wind and photovoltaic power, a power system with high penetration of renewable sources is always imbalanced. Energy storage on generation side can enhance Application Analysis of Energy Storage Technology on the Generation Side Achieving the integration of clean and efficient renewable energy into the grid can help get the goals of ‘carbon peak’ and ‘carbon neutral’, but the polymorphic uncertainty of Combined solar power and storage as cost-competitive On the grid side, specialized energy storage power stations will replace traditional thermal power plants to provide peak and frequency regulation functions and ensure the safety of the power A Power Generation Side Energy Storage Power Station With the strong support of national policies towards renewable energy, the rapid proliferation of energy storage stations has been observed. In order to provide guidance for the operational Planning of New Energy Storage on the Grid Side However, the intermittency and uncertainty of wind and photovoltaic power generation have the effect of greatly increasing the demand for flexible regulation resources on the grid side, Optimizing the operation and allocating the cost of shared energy Sensitivity analysis is further conducted to offer valuable insights into cost-saving policies for four representative regions in China. The proposed operation and cost-sharing model is anticipated Differentiation between grid-side energy storage and The optimal



