



## Energy Storage Power Station Substation Selection

Are new substations necessary to address the energy crisis? Siting new substations and optimizing the location of existing ones are necessary to address the energy crisis. The current site selection lacks consideration of spatial and temporal heterogeneity in urban power demand, which results in unreasonable energy transfer and waste, leading to power outages in some areas. How do you select a substation? Select the power supply index of the terminal substation, take the substation as the initial seed point, use the regional growing algorithm for neighborhood power diffusion, and gradually assign the surrounding power demand points to get the actual power supply area of each substation; (3) Substation site selection optimization. Why is a substation important? The substation is an important part of the power system (Xia et al., ). Its reasonable location selection is of great significance for the safety and stability of electricity resources and regional power distribution (Ximing et al., ; Zeng et al., ). Where should substations be built? They were suggested to build in the north, northeast, and southwest of the satellite city (Lianhua County) and the southern industrial zone. Under the winter peak power consumption scenario, the current coverage rate of the existing 23 substations was 89.66%, and it would increase nearly 10% to 99.46% after the optimization. Is accurate power demand mapping a key step for substation site selection optimization? Accurate power demand mapping is a key step for substation site selection optimization. Four scenarios of urban power consumption were considered in the UrbanPS, considering the urban production and living power load vary with the seasonal climate change (Li, Yin, et al., ; Senthil Kumar et al., ). How to optimize a substation location? Estimating the supply area of each substation is a crucial step in optimizing the substation location. The electrical energy is transmitted from the substations to the demand points stepwise from near to far (Shu et al., ), and different substations have their specific supply area. Energy internet (EI) is the framework foundation for tackling climate change and environmental issues and achieving "carbon peak and carbon neutral". In this paper, considering the important function of pumped storage power stations (PSPSs, hereafter) have garnered significant attention due to their critical roles in peak regulation and frequency modulation, contributing to the site selection and capacity determination of substation based on power. The location and capacity of substations directly affect the economy and reliability of the distribution network. This paper establishes a mathematical model for the planning of pumped storage power stations. What are the principles for site selection of pumped storage power stations? Therefore, informed decision-making during the site selection process can significantly optimize energy storage power station effectiveness and longevity, fostering sustainable energy solutions that benefit communities. Energy storage power station site selection load Site selection; The site selection of an energy storage power station is a key step in the early stages of construction. The location selection of a power station needs to consider factors. A site selection framework for urban power. The world is facing more energy crises due to extreme weather and the rapidly

