

What is the heating and cooling load of the Industrial Park?

It is assumed that land area occupied by the industrial park is 26 km<sup>2</sup>, and 24 km<sup>2</sup> is adopted for buildings. The heating and cooling loads of buildings are shown in Fig. 4 (a), which are simulated by the hourly air temperature. Among them, the maximum cooling load is 2933.78 kW, and the maximum heating load is 1439.52 kW.

How much electricity does an industrial park need?

Among them, the maximum cooling load is 2933.78 kW, and the maximum heating load is 1439.52 kW. The electricity load required for the production of the industrial park is shown in Fig. 4 (b). As can be seen, the electricity load in summer and autumn is 20% higher than that in spring and winter.

Can a hydrogen compressor be used in industrial park-integrated energy systems?

Different hydrogen compression levels are utilized to hydrogen compressor models. Establishing an industrial park-integrated energy system (IN-IES) is an effective way to reduce carbon emission, reduce energy supply cost and improve system flexibility. However, the modeling of hydrogen storage in traditional IN-IES is relatively rough.

How can HEIC be used in industrial parks?

The IN-IES planning model with HEIC is established, including hydrogen production, transportation, and storage. For industrial parks where hydrogen is commonly utilized, a feasible solution for planning the coupling of hydrogen and other energies is provided in this paper.

Can a long-term hydrogen storage model be used in industrial parks?

For industrial parks where hydrogen is commonly utilized, a feasible solution for planning the coupling of hydrogen and other energies is provided in this paper. In the aspect of storage modeling, a long-term hydrogen storage model considering different time steps is newly proposed.

5 ???&#0183; The implementation of community power generation technology not only increases the flexibility of electricity use but also improves the power system's load distribution, increases the overall system efficiency, and ...

With the development of the industrial Internet, China's traditional industrial energy industry is constantly changing in the direction of digitalization, networking, and intellectualization. The ...

A Multi-objective Stochastic Paint Optimizer (MOSPO) method is employed to solve the planning problem. ... energy storage systems like batteries are employed to deal with ...

Nonlinear operational optimization of an industrial power-to-heat system with a high temperature heat pump, a thermal energy storage and wind energy Appl Energy, 344 ( 2023 ), Article ...

Energy storage is an important link between energy source and load that can help improve the utilization rate of renewable energy and realize zero energy and zero carbon goals [8- ...

Table 1. Performance comparison of typical electricity storage methods [ 18, 61 - 64] Energy storage types. Specific energy (Wh/kg) Specific power (W/kg) Rated power. Energy storage ...

For zero-carbon operation of energy utilization in industrial park, this paper studies the optimal configuration of hybrid energy storage system (ESS) in integrated energy utilization. Firstly, ...

Firstly, based on the characteristics of the big data industrial park, three energy storage application scenarios were designed, which are grid center, user center, and market ...

study on hybrid energy storage system in industrial park. Research status An "industrial park" refers to an industrial cluster region formed in a certain area/zone, either through Figure 1 ...

In the existing research on the dispatch and control strategies of park micro-energy grids, the dispatch and control characteristics of controllable energy units, such as response delay, startup ...

Due to the large proportion of China's energy consumption used by industry, in response to the national strategic goal of "carbon peak and carbon neutrality" put forward by the Chinese government, it is urgent to improve ...