European Solar and Energy Storage Solutions

# Fengtan Hydropower Generation

## Overview

The Fengtan Dam is an arch-gravity dam on the You River, located 48 km (30 mi) southeast of Zhangjiajie in Hunan Province, China. The purpose of the multi-purpose dam is flood control, irrigation, power generation and navigation. The dam has a power station with an installed capacity of 800 MW and provides water.

The Fengtan is a 112.5 m (369 ft) tall and 488 m (1,601 ft) long (at the crest) arch-gravity dam. Its base arch length is 200 m (656 ft) and the dam has a curve radius of 243 m (797 ft). The base width of the dam is 65.5 m (215 ft). The.

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Why is hydropower important in China?

Hydropower from the YRB could provide high-quality, reliable, and stable power to Central China, East China, and South China, and plays an important role in implementing the “West-East Power Supply”.

How much power does the Yangtze River have?

There are abundant hydroelectric resources in the Yangtze River basin (YRB) in China, with an annual water resource of approximately 996 billion cubic meters and a fall of 5400 m. The potential installed capacity is 281,000 MW, and the annual power generation is 1.30 trillion kWh, accounting for a large portion of the nation's total power.

How long does energy drought last in Yangtze River basin?

Energy droughts for hydropower over Yangtze River basin (YRB) last for 2–24 days. Developed hydropower potential (DHP) was reduced by 26% during energy droughts. There is a lagged effect of La Niña on the frequency and duration of energy drought. The future risk of extreme energy drought like 2022 will increase by 88% under SSP585.

Which hydropower plant has the most energy droughts?

Among them, the annual average numbers of energy droughts in the Three Gorges hydropower plant (IHC = 22500 MW), the Ertan hydropower plant (IHC = 3300 MW) on the Yalong River, and the Gongzui hydropower plant (IHC = 2100 MW) on the Dadu River are 10.5, 12.4 and 25 times, respectively.

What is the energy drought severity of hydropower?

The energy drought severity of hydropower largely depends on the capacity of the hydropower plant. The drought severities of most small hydropower plants (IHC < 100 MW) are <100 MW/event, whereas the severities for large and medium hydropower plants (IHC > 1000 MW) could reach approximately 1000–10,000 MW/event.

What factors affect hydropower generation?

DHP is the maximum possible hydropower generation of all reservoirs in this study, which is estimated based on reservoir characteristics, such as location, capacity, dam height, and IHC. In comparison to the actual hydropower generation, DHP is not affected by socio-economic factors such as energy demand, various water consumption, etc.

## Fengtan Hydropower Generation

### Development Trend of Chinese Hydroelectric Generation Technology of

Large Hydroelectric power generation-scheme components [8] I. FUNCTION OF HYDROPOWER IN POWER SYSTEM The electric energy supplied by the hydropower plant is abundant, low ...

### Hydroelectric Power Plants: Principles of Operation

Hydroelectric power plants convert the potential energy of stored water or kinetic energy of running water into electric power. Hydroelectric power plants are renewable sources of energy as the water available is self ...

### Development Trend of Chinese Hydroelectric Generation ...

Hydropower generation has a high efficiency and conventional hydropower plant can make use of 80% water resources, while the heat efficiency of thermal power plant only reaches 30%~50%. ...

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