

## SolarTech Power Solutions

# Rural energy storage simple power station



## Overview

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Can conventional hydropower stations be converted into pumped storage facilities?

This research establishes a comprehensive framework for the conversion of conventional hydropower stations into pumped storage facilities, offering a model for medium-small scale pumped storage and distributed generation technologies.

What is pumped storage hydropower (PSH)?

Pumped Storage Hydropower (PSH) is an essential renewable energy technology that balances electricity supply and demand within power grids. Although PSH projects involve high construction and operational costs, their long-term economic benefits are significant.

Can Jiangshantou pumped storage hydropower station improve power regulation?

The analysis indicates that Jiangshantou Pumped Storage Hydropower Station will serve as the primary mechanism for power regulation. Furthermore, a small-scale integrated hydropower-wind-solar power system is proposed to ensure stable system output, improve the input-output ratio, and enhance the efficiency of renewable energy utilization.

How many kW is a power station?

The station operates under a mixed development mode with an installed capacity of 3200 kW, comprising two units, a design head of 70.5 m, a design discharge rate of 2.687 m<sup>3</sup>/s, and an average annual energy generation of 6.408 million kWh.

How do PSH stations leverage stored water energy?

Given the significant variability in the outputs of photovoltaic (PV) and wind power, PSH stations can leverage stored water energy by releasing it through

turbines during peak load periods.

What is a small-scale integrated power system?

Additionally, it fosters a small-scale integrated power system combining hydropower, wind, and solar energy, serving as a demonstration for converting conventional hydropower stations into medium-small PSH facilities and exploring distributed generation and small-scale PSH technologies.

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