

Pumped Hydro Energy Storage System

This system stores energy by pumping water to an upper reservoir. When electricity is needed, the water is released to a lower reservoir to generate power.



System Overview

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This pumped storage power solution utilizes a dual-reservoir configuration to provide reliable, large-scale energy storage for grid stability. By leveraging gravitational potential energy, the system stores energy during off-peak periods and releases it to meet high demand, facilitating effective peak load management. Its integration with mountainous terrain highlights a scalable approach to sustainable power generation and infrastructure resilience.

Primary Function

Grid Stability, Peak Demand Management, Energy Storage, Renewable Integration

Technical Principles

Operating Cycle

- Off-peak: Pumping water from lower reservoir to upper reservoir
- Peak demand: Releasing water through turbines to generate power
- Continuous potential energy conversion

Core Components

Upper Reservoir • Lower Reservoir • Turbine System • Pump Infrastructure