Pumped Storage Hydropower

PUMPED STORAGE HYDROPOWER (PSH): How Does it Work?

Pumped Storage converts electricity into stored energy by pumping water from a lower reservoir to an upper reservoir during low-energy demand. When energy demand is high, water in the upper reservoir is released downhill through a turbine. Additionally, Pumped storage hydropower uses the **natural flow of moving water to generate electricity**, which is domestically sourced and abundant in most regions of the United States.

The gravity-driven force of the water is harnessed to produce electricity. The electricity is put back into the electric grid, providing communities the power they need to **support energy independence and resiliency**.

How Does Pumped Storage Contribute to the U.S. Energy Grid?

Unparalleled Storage Capabilities: PSH is the largest contributor to U.S. energy storage with a capacity of **21.9 GW** or roughly **93% of all utility-scale energy storage capacity**. It provides longer-term storage and can be combined with wind and solar plants to balance the grid during extreme weather or at peak demand.

Grid Reliability and Security: PSH provides **flexible and fast responding energy** storage, helps balance supply and demand on the grid, and serves as a stabilization tool for working with intermittent generation sources.

Economic Benefits: By creating jobs during construction and operation, PSH provides significant economic benefits, as well as **a stable source of revenue** for host communities through taxes and royalties.

Durability and Reliability: Pumped storage has a long lifespan, making it a durable and reliable energy storage solution. The oldest working pumped storage facility has been in service for nearly **120 years**.

Cost Reduction: Pumped storage **reduces the overall cost of electricity** by storing excess energy during periods of low demand when value is lower, and releasing it during high demand periods when electricity prices are higher.