

Pumped Storage

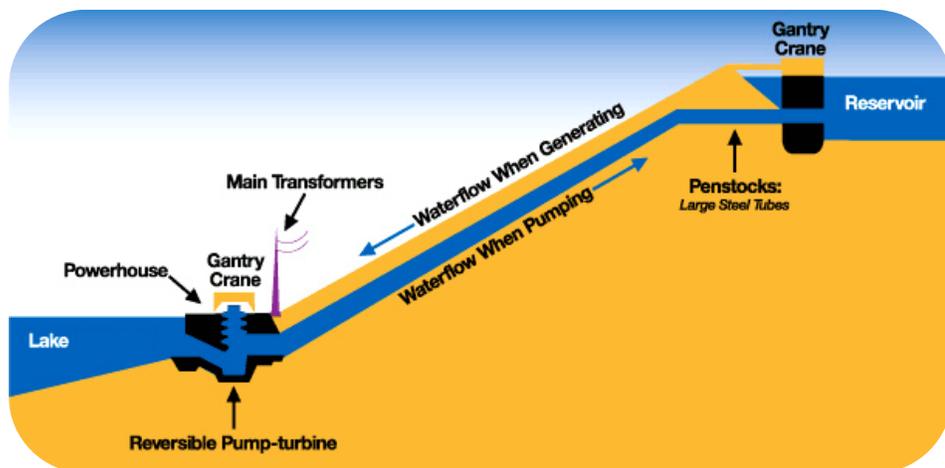
An Essential Solution for Grid Reliability & Variable Energy Resource Integration

As the most reliable and cost-effective energy storage method in use today, clean hydroelectric pumped-storage technology ensures a stable electricity grid and expands America's use of renewable energy.

How Does Pumped Storage Work?

Pumped storage is a type of hydroelectric power generation that stores energy in the form of water in an upper reservoir, pumped from a second reservoir at a lower elevation. During periods of high electricity demand, the stored water is released through turbines in the same manner as a conventional hydro station. Excess energy refills the reservoir by pumping the water back to the upper reservoir, usually during nights and weekends when electricity demand is low.

The United States has more than 20 gigawatts (GW) of pumped-storage capacity in use today, with facilities in every region. Developers have proposed an additional 31 GW, primarily in the West, to serve the rapid increase in variable energy resources coming online.



Why we need grid storage:

Grid energy storage balances electricity supply and demand and maximizes use of all generation resources. Having a balanced load on the grid ensures stability and reliability for all electricity consumers.

Integrating Variable Generation

Solving the puzzle of integrating variable generation energy sources, such as wind and solar, is essential to expanding their use. The more grid energy storage we have – using tested technologies like pumped storage – the more energy options we can use to increase clean, renewable energy resources.

Policies for Pumped Storage

Tax credits have helped to ramp up other renewables by creating stable market conditions and providing certainty for investors, spurring them to make the large capital expenditures necessary to bring facilities online. The proposal for a 20% investment tax credit for energy storage technologies that is currently before Congress could jump-start the pumped storage projects on the drawing board today.

Certain pumped-storage technologies with minimal impacts, such as closed-loop off-river systems, also need a new regulatory process. The long development timelines for these large, capital-intensive projects do not allow developers to use incentives designed for projects with shorter lead times.