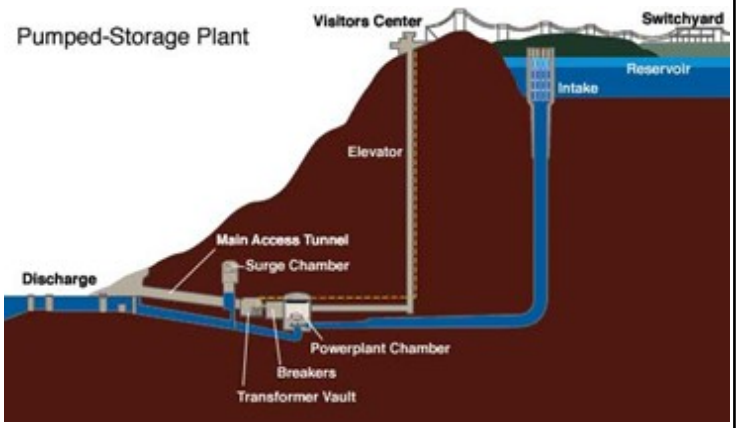
Pumped hydroelectric storage

- Uses electricity to pump water from low lying areas to a reservoir at a higher altitude (e.g. up a hill or mountain).
- Pumping takes place at night when demand for electricity is low.
- When energy is needed, this water is released downhill, passing through a hydroelectric turbine which generates electricity.
- Currently used in the UK to help stabilise the national grid when electricity demand rises suddenly, or other power plants go off-line without warning.



Cutaway Diagram of a Typical Pumped Hydro Plant. (Sandia National Labs, 2015)

Key facts	
Technologies:	Pumped hydro-electric
Location:	National electricity grid
Readiness:	Currently used
Environmental impacts, safety and resource use:	• Requires large reservoirs and excavations which can be disruptive to local environments and ecosystems. • Limited to hilly or mountainous areas

Applications

- Enables more renewables
- Storage across hours & days
- Less network upgrades
- Back-up power