



Pumping Solutions for Pumped Storage Plants (PSPs)

Pumped Storage Plants (PSPs) comprise complex underground and surface structures where reliable and continuous pumping solutions are essential for effective water management throughout construction, commissioning (including first filling) and plant operation.

PSPs require highly reliable pumping systems for Initial Reservoir Filling as well as continuous Drainage & Dewatering (D&D) of the underground powerhouse, tunnels, caverns and other areas.

AQUA Machineries Pvt. Ltd. (AMPL) offers Engineered Submerged Pumpsets specifically suited for demanding Hydro Power and PSP applications; Delivering high reliability, robust solids handling capability and uninterrupted operation under challenging site conditions.

FIRST FILLING OF RESERVOIR – PUMPING SOLUTION

First filling of a reservoir involves pumping water from an available water source into the lower or upper reservoir during the commissioning phase of a Pumped Storage Plant.

AMPL offers Engineered Submersible Pumpset solutions for first filling applications; With both fixed and floating pumping station configurations available.

- **Fixed Pumping Station** – Suitable where a permanent intake and civil infrastructure are available.
- **Floating Pumping Station** – Submersible pumpsets mounted on a pontoon or barge-mounted arrangement; Providing operation flexibility to operate across varying water levels at

the source and reduce extensive and bulky intake/civil structures.

PERMANENT D&D SYSTEM – PUMPED STORAGE PLANTS

The Permanent Drainage & Dewatering (D&D) System is a critical operational and safety system for an underground PSP, designed to continuously collect and remove seepage, leakage, drainage and accumulated water from the powerhouse cavern, transformer cavern, tunnels, sumps and other associated structures.

AQUA engineering pumpsets are configured to meet the required flow, total head, operating and site specific conditions. Being submerged operation, it eliminates the need for conventional priming arrangements, enabling reliable and quick pump start-up.

AQUA – PROVEN EXPERIENCE IN HYDROPOWER

AQUA submersible pumpsets have been operating in demanding Hydropower and PSP applications since decades, including projects exposed to challenging water and sediment conditions. This experience has enabled AQUA to develop practical expertise in designing pumping solutions for silt-laden water, varying seasonal conditions and demanding underground environments.

ADVANTAGE ON AQUA SIDE

Robust Submersible Technology
Customized Hydraulic Selection
High Reliability
Compact Installation
Duty/Standby Flexibility
Proven Hydro Experience