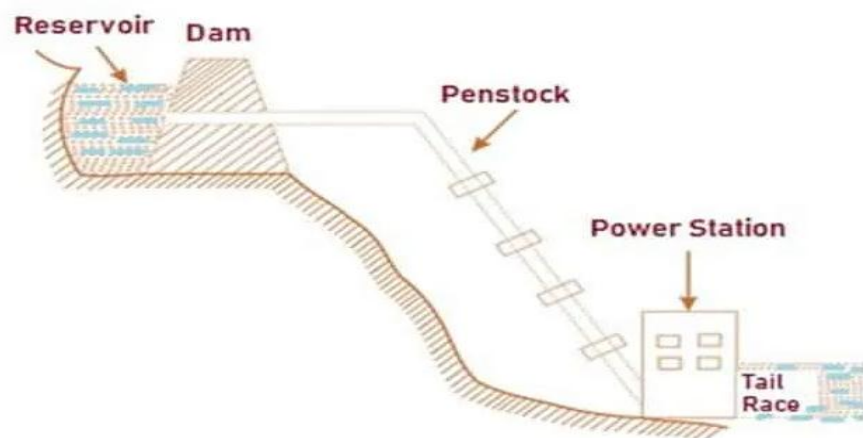


## Classification of Hydroelectric Power Plant Based on Availability of Water Head

- Low Head Hydroelectric Power Plant
- Medium Head Hydroelectric Power Plant
- High Head Hydroelectric Power Plant

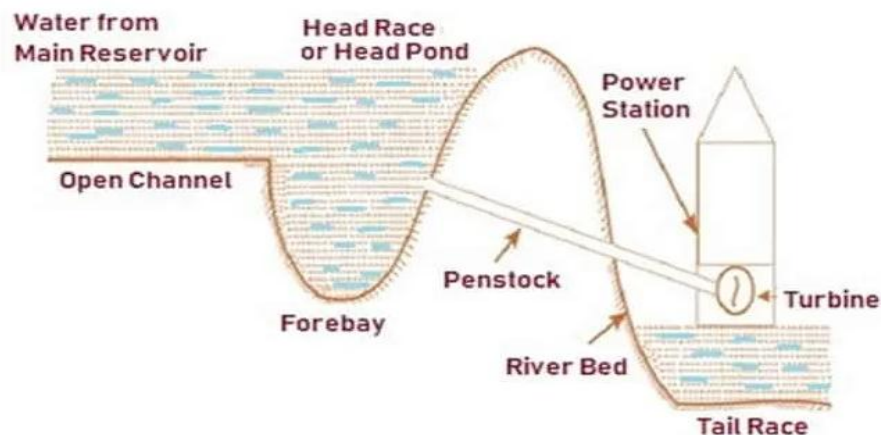
### ***Low Head Hydroelectric Power Plant***

The Propeller Turbines are used for the Low Head Power Plant. The dam is placed just ahead of the water resources such as the pond or the river. The water level is directed to the Turbine through the Penstock.



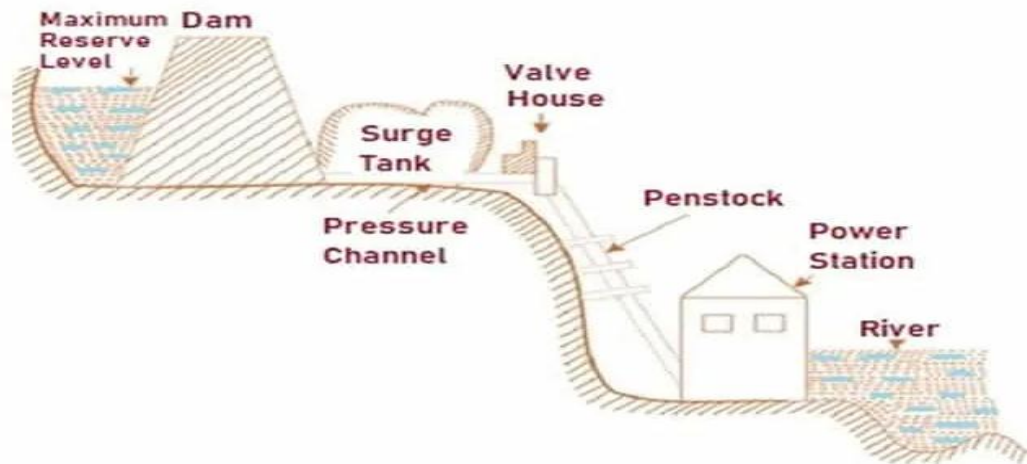
### ***Medium Head Hydroelectric Power Plant***

This power plant has a Forebay created mainly to store water. They are the storage tank which taps the river water which goes to the Turbine through the Penstock. The Forebay serves as a surge tank.



## ***High Head Hydroelectric Power Plant***

The dam constructed usually is for maximum reserve water level. The Surge tank stores the additional water which would be required during the peak load time with the supply to the Turbine.



## Classification of Hydroelectric Power Plant Based on Load Supply

### ***Base Load Supply***

This type of Power Plant is a large capacity plant providing extensive supply. There is a Base portion to the load curve of the Power Plant. This sort of Power Plant is suitable for the constant load.

### ***Peak Load Supply***

As the name suggests, the Power Plant is suitable for the peak load curve. This needs a big capacity water storage facility.

### ***Pumped Storage***

The demand for the electricity is never on a decline. However, the consumption changes during the day and the night with the use of electricity. To match this demand the pumped storage method is utilized. Here, the water is kept in reserve for the high demand periods which comes from the Turbines to back up a storage pool which is situated above the power plant. This is done during the night when the consumption is low. The water is let back out when the demand is high usually during the day.

# Classification of Hydroelectric Power Plant Based on Availability of Water Flow

This is of three types. They are:

- Run-Off- River Power Plant without Pondage
- Run-Off-River Power Plants with Pondage
- Reservoirs Power Plant

## ***Run Off River Power Plant without Pondage***

In this type, the water availability plays a very important role. Here the Power Plant works only when there is enough water since there is no storage or pondage facility available. The facility is placed where there is connectivity directly to the river or pond. The development cost of this plant is cheaper compared to the full time plant. The objective of such a plant is to utilize excessive water during the flood situation or the rainy season.

## ***Run Off River Power Plants with Pondage***

The pond is used as storage for the water along with increasing its capacity. This type of plant is used mostly during the fluctuating load period depending on the pondage size. These types of Power Plants save the conservation of coal.

## ***Reservoirs Power Plant***

Reservoir Power Plants are across the globe in maximum numbers. In this, the water is stored behind the dam which is available throughout the year. This Power Plant is used during the peak consumption of electricity as well as during the base period.