

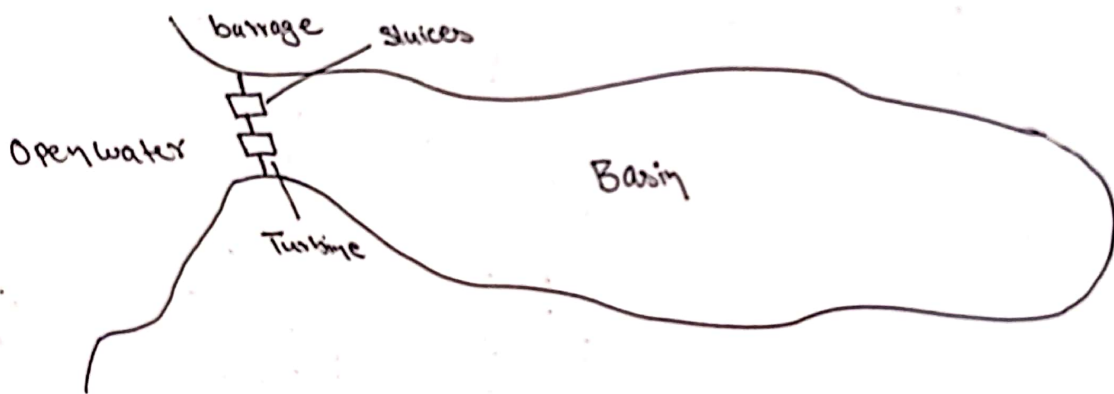
Tidal energy is form of hydropower that converts the energy of tides into useful form of power, mainly electricity.

Tidal power plant can be classified on the basis of basin used for power generation. There are two types of basin system: -

→ Single basin system

→

⇒ Single basin system: -



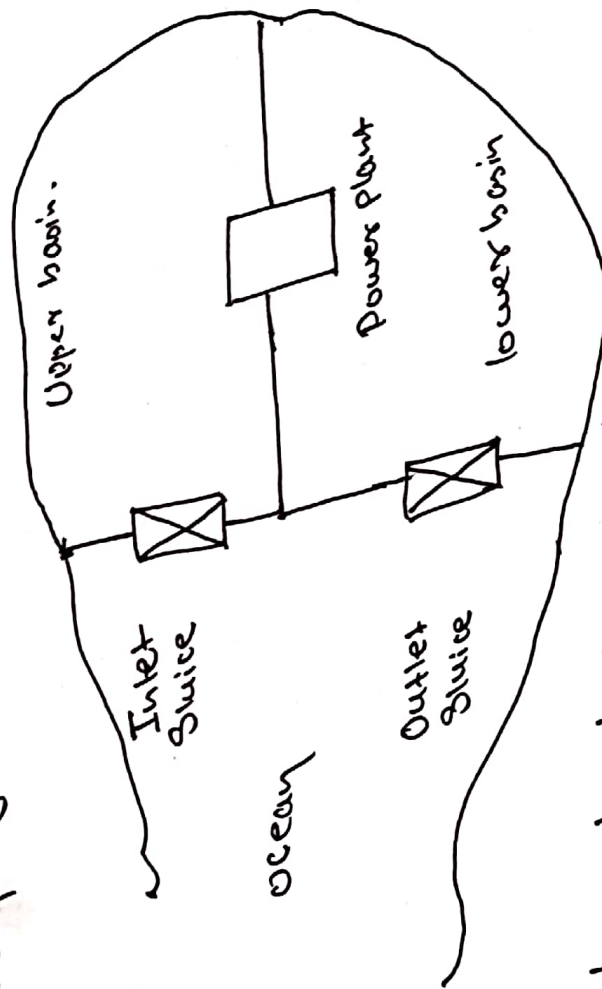
→ This is the simplest system to generate tidal power. This scheme has only one basin which is separated from the sea by a dam.

→ The sluiceway is opened during high tide to fill the basin and used to empty the basin during the low tide.

→ The water during high tide is first trapped in basin and they allowed to escape during the period of low tide.

- The water while escaping to run a hydraulic turbine coupled to a generator.
- In such system the power house is situated at the mouth of basin. The hydraulic turbine in the power house only operates during the discharge of water from the basin during ebb tide.
- We also have double cycle system in which the power generation is affected during the ebb as well as flood tide.
- The direction flow of turbine during the ebb and flood tide generation of power is accomplished both during filling and emptying the basin.

⇒ Double Basin System:-



- This system has two basins at different levels and a dam is provided b/w these basins.
- One basin is filled at high tide and the other is emptied at low tide. Turbine are placed b/w the basins.

- Two basin schemes offer advantage over normal schemes in the generation time can be adjusted with high flexibility and it is also possible to generate almost continuously.
- When the water level in upper basin is max during high tide the inlet sluice is closed and the level of water in lower basin keeps on rising due to discharge of water turbine.
- Two-basin scheme are very expensive to construct due to cost of the extra length of barrage

Limitation: —

- ~~Marine~~ Marine life affected
- Sedimentation of basin is problem
- Sea water is corrosive
- uneven operation.
- efficiency of plant is affected.