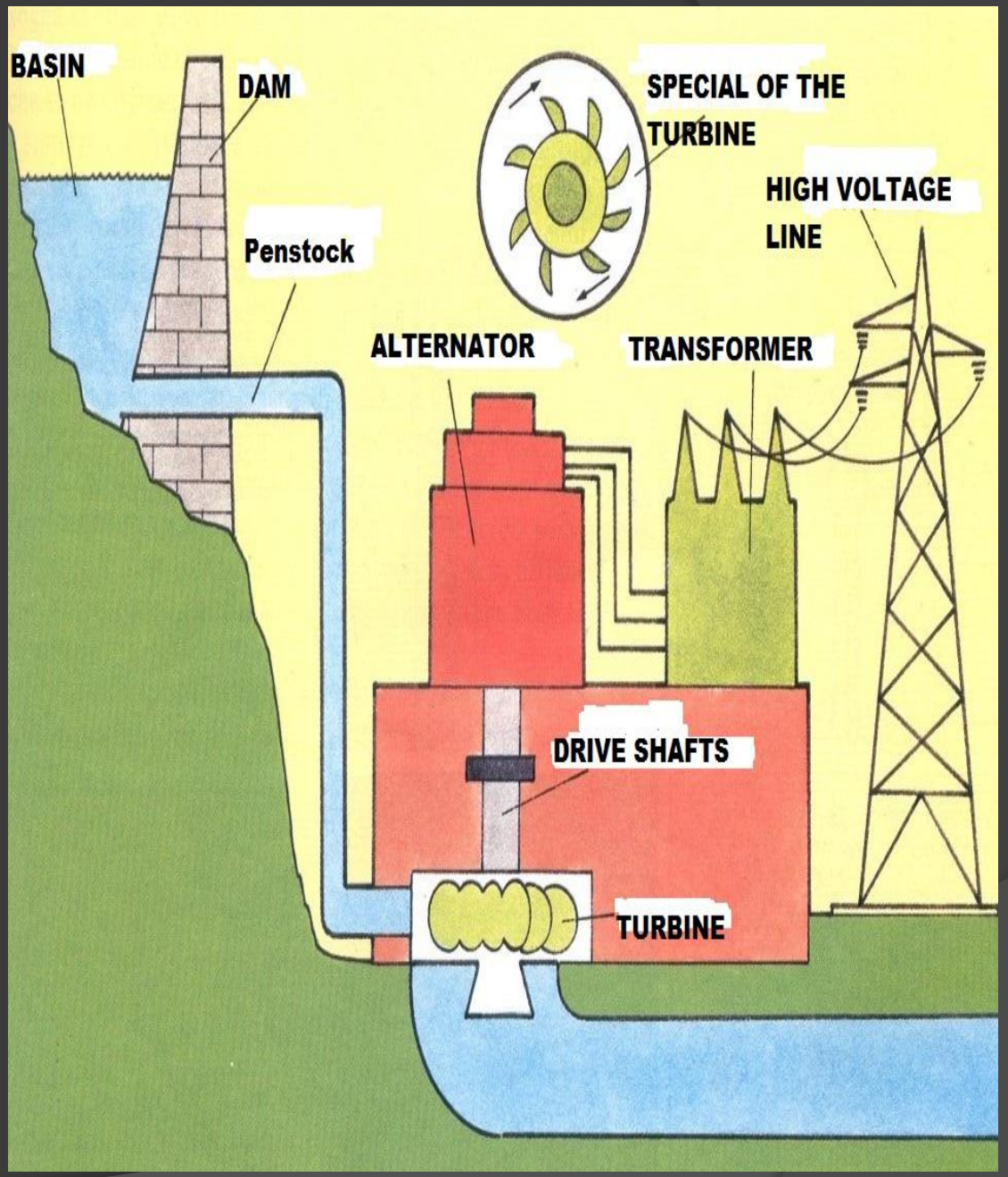
ITIS PININFARINA

HYDROELECTRIC POWER

Comenius I&R

hydroelectric power is produced from generators driven by water turbines that convert the potential energy of falling or fast-flowing water to mechanical energy.



In the generation of hydroelectric power, water is collected or stored at a higher elevation and led downward through large pipes or tunnels to a lower elevation. At the end of its passage down the pipes, the falling water causes turbines to rotate. The turbines in turn drive generators, which convert the turbines' mechanical energy into electricity. Transformers are then used to convert the alternating voltage suitable for the generators to a higher voltage suitable for long-distance transmission.

World's largest dams

By height

name	date of completion	river	country	height (m)
Nurek	1980	Vakhsh	Tajikistan	300
Grande Dixence	1961	Dixence	Switzerland	285
Inguri	1980	Inguri	Georgia	272
Vaiont	1961	Vaiont	Italy	262
Chicoasen	1980	Grijalva	Mexico	261
Tehri	2002	Bhagirathi	India	261
Mauvoisin	1957	Drance de Bagnes	Switzerland	250

Similar to hydroelectric power is tidal power a form of renewable energy in which tidal action in the oceans is converted to electric power, taking advantage of differences between high tides and low tides by using a “barrage,” or type of dam, to block receding water during ebb periods. It is the subsequent release of the water through a turbine that generates electricity as the tide rises; a similar process occurs in hydroelectric dams. Tidal stream power systems take advantage of ocean currents to drive turbines, particularly in areas around islands or coasts where these currents are fast.

So water is a clean and renewable source of energy, that is always available and grants a significant contribution to the world's primary energy demand.
Being Italy's main resource and entirely free of polluting emissions, it's a leading energy source, both in economic and environmental terms.
In Italy we own 500 hydropower plants: this resource can meet the needs of approximately 10 million families and avoid the emission of over 15 million tons of CO_2.

http://www.britannica.com/EBchecked/topic/278455/hydroelectric-power