

TIDAL ENERGY: ADVANTAGES AND DISADVANTAGES

Tidal Energy: Introduction

Tides are the waves caused due to the gravitational pull of the moon and also sun (though its pull is very low). The rise is called high tide and fall is called low tide. This building up and receding of waves happens twice a day and causes enormous movement of water. It is so powerful that it has caused many mishaps and resulted in sinking of ships. Thus tidal energy forms a large source of energy and can be harnessed in some of the coastal areas of the world. Tidal dams are built near shores for this purpose. During high tide, the water flows into the dam and during low tide, water flows out which result in turning the turbine.

Lets now discuss the *advantages and disadvantages of tidal energy*.

Advantages of Tidal Energy

- 1) It is an inexhaustible source of energy.
- 2) Tidal energy is environment friendly energy and doesn't produce greenhouse gases.

- 3) As 71% of Earth's surface is covered by water, there is scope to generate this energy on large scale.
- 4) We can predict the rise and fall of tides as they follow cyclic fashion.
- 5) Efficiency of tidal power is far greater as compared to coal, solar or wind energy. Its efficiency is around 80%.
- 6) Although cost of construction of tidal power is high but maintenance costs are relatively low.
- 7) Tidal Energy doesn't require any kind of fuel to run.
- 8) The life of tidal energy power plant is very long.
- 9) The energy density of tidal energy is relatively higher than other renewable energy sources.

Disadvantages of Tidal Energy

- 1) Cost of construction of tidal power plant is high.
- 2) There are very few ideal locations for construction of plant and they too are localized to coastal regions only.
- 3) Intensity of sea waves is unpredictable and there can be damage to power generation units.
- 4) Influences aquatic life adversely and can disrupt migration of fish.

- 5) The actual generation is for a short period of time. The tides only happen twice a day so electricity can be produced only for that time.
- 6) Frozen sea, low or weak tides, straight shorelines, low tidal rise or fall are some of the obstructions.
- 7) This technology is still not cost effective and more technological advancements are required to make it commercially viable.
- 8) Usually the places where tidal energy is produced are far away from the places where it is consumed. This transmission is expensive and difficult.

Tidal Energy is thus a clean source of energy and doesn't require much land or other resources as in harnessing energy from other sources. However, the energy generated is not much as high and low tides occur only twice a day and continuous energy production is not possible.

Source: <http://www.ianswer4u.com/2012/02/tidal-energy-advantages-and.html#axzz3Qs5RV0Sb>