

Types of Ocean Energy

1. WAVE ENERGY

Wave energy is generated by converting the energy within ocean waves (swells) into electricity. There are many different wave energy technologies being developed and trialled to convert wave energy into electricity.

The first wave energy, project with a capacity of 150 MW, has been set up at Vizhinjam near Trivandrum.

Wave energy development has not been carried out in any country and the power in ocean waves has not been exploited to its full potential for human purposes except as power supplies for buoys and navigational aid

Wave power is produced by the up and down motion of floating devices placed on the surface of the ocean.

As the waves travel across the ocean, high-tech devices capture the natural movements of ocean currents and the flow of swells to generate power.

2. CURRENT ENERGY

Current Energy – It is very similar to the wind above the oceans. Underwater turbines, large propellers tethered to the seabed, are moved with the marine currents to generate electricity. According to the Intergovernmental Panel on Climate Change (IPCC), given the scale of open ocean currents, there is a

promise of significant project scale growth when technologies harness lower-velocity currents.

The Intergovernmental Panel on Climate Change (IPCC)

It was created in 1988 by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP).

Currently has 195 members.

Headquartered in Geneva, Switzerland.

It has the objective to provide governments at all levels with scientific information that they can use to develop climate policies.

It provides regular assessments of the scientific basis of climate change, its impact and future risks, and options for adaptation and mitigation.

It gives the report on Renewable Energy Sources and Climate Change Mitigation among other various reports.

3. TIDAL ENERGY

Tidal Energy- Like conventional hydroelectric dams, power plants are built on river estuaries and hold back huge amounts of tidal water twice a day which generates electricity when released. India is expected to have 9,000 MW of tidal energy potential.

Tides are formed due to the gravitational effect of the sun and moon on the earth. The gravitational force causes a periodic rise and fall of the water level of sea in rhythm with the daily rhythm of the rising and setting of the sun and the moon.

This periodic rise and fall, called a tide, can be used to produce electric power which in this case is known as tidal power. Tidal power has great potential in areas like the Gulf of Kutch in Gujarat,