Megha Patel

20124107

3 Unconventional renewable energy source

Few examples of Unconventional energy resources Solar Energy, Wind Energy, Bio Energy, Hydro Energy, Tidal Energy, Ocean Energy are the examples of non-conventional energy resources.

Non-conventional energy resources are renewable, eco-friendly in nature and do not increase pollution.

1. **Wind energy farm**

## When mechanical energy enhances a unit by harnessing wind power, it may be called a windmill, wind pump or wind charger. Wind energy can be used for anything from power on boats, battery charging or electricity to being used commercially. Wind Farm consist of many individual wind turbines, which are connected to the electric power transmission network. Onshore wind is an inexpensive source of electric power, competitive with, or in many places cheaper than, coal or gas plants. Onshore wind farms have a greater visual impact on the landscape than other power stations, as they need to be spread over more land and need to be built in rural areas, which can lead to "industrialization of the countryside" and habitat loss Offshore wind is steadier and stronger than on land and offshore farm have less visual impact, but construction and maintenance costs are significantly higher. Small onshore wind farms can feed some energy into the grid or provide power to isolated off-grid locations.

## Muppandal Wind Farm: 1,500MW

The project features a large number of wind turbines of varying sizes from 200 kilowatts (KW) to 1650KW.Developed by the state-owned Tamil Nadu Energy Development Agency, the facility uses wind from the Arabian Sea to generate renewable energy for nearby residents and contributes to India’s overall energy mix.

1. **Ocean Energy**

Ocean thermal energy conversion (OTEC) is a process or technology for producing energy by harnessing the temperature differences (thermal gradients) between ocean surface waters and deep ocean waters.

Energy from the sun heats the surface water of the ocean. In tropical regions, surface water can be much warmer than deep water. This temperature difference can be used to produce electricity and to desalinate ocean water. Ocean Thermal Energy Conversion (OTEC) systems use a temperature difference (of at least 77° Fahrenheit) to power a turbine to produce electricity. Warm surface water is pumped through an evaporator containing a working fluid. The vaporized fluid drives a turbine/generator. The vaporized fluid is turned back to a liquid in a condenser cooled with cold ocean water pumped from deeper in the ocean. OTEC systems using seawater as the working fluid can use the condensed water to produce desalinated water.

1. **Hydro Energy**

Hydro Power, or hydroelectric power, is a renewable source of energy that generates power by using a dam or diversion structure to alter the natural flow of a river or other body of water. Hydropower relies on the endless, constantly recharging system of the water cycle to produce electricity, using a fuel—water—that is not reduced or eliminated in the process.

#### IMPOUNDMENT

The most common type of hydroelectric power plant is an impoundment facility. An impoundment facility, typically a large hydropower system, uses a dam to store river water in a reservoir. Water released from the reservoir flows through a turbine, spinning it, which in turn activates a generator to produce electricity. The water may be released to meet changing electricity needs or other needs, such as flood control, recreation, fish passage, and other environmental and water quality needs.