

Assignment 1

Conventional Generation: Conventional generation refers to the traditional methods of generating electricity that have been widely used for many years. These methods typically rely on the combustion of fossil fuels, such as coal, oil, and natural gas. The most common types of conventional generation include:

- a. **Thermal Power Plants:** These plants burn fossil fuels to produce steam, which drives a turbine connected to a generator to generate electricity.
- b. **Hydropower:** It involves the use of flowing or falling water to generate electricity. Water is typically stored in reservoirs created by dams, and its energy is harnessed by allowing it to flow through turbines.
- c. **Nuclear Power:** Nuclear power plants generate electricity by harnessing the energy released from nuclear reactions, particularly nuclear fission.
- d. **Natural Gas Power Plants:** These plants burn natural gas to produce steam, similar to thermal power plants, but they use natural gas as the primary fuel source.

Assignment 2

Non-conventional Generation: Non-conventional generation refers to alternative and renewable sources of energy that are considered more environmentally friendly and sustainable. These methods aim to reduce dependence on fossil fuels and mitigate the impact of energy generation on the environment. Some examples of non-conventional generation include:

- a. **Solar Power:** Solar energy is obtained from the sun's radiation and can be converted into electricity using photovoltaic (PV) cells or concentrated solar power (CSP) systems.
- b. **Wind Power:** Wind turbines capture the kinetic energy of the wind and convert it into electricity through the rotation of their blades.
- c. **Biomass Energy:** Biomass refers to organic matter, such as agricultural waste, forest residues, or dedicated energy crops. This matter can be burned or converted into biogas to generate heat or electricity.
- d. **Geothermal Energy:** Geothermal power harnesses heat energy from the Earth's interior, using hot water or steam to drive turbines and generate electricity.
- e. **Tidal Power:** Tidal power plants utilize the kinetic energy from tidal currents or the potential energy from the rise and fall of tides to generate electricity.