

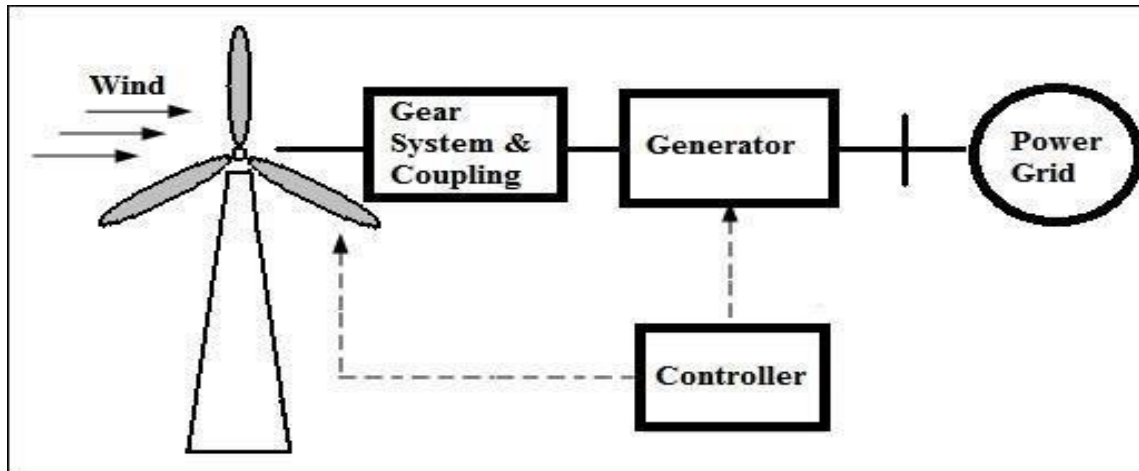
Project Design Phase-II

Data Flow Diagram & User Stories

Team ID : PNT2022TMID12095

Project Name : Predicting the energy output of wind turbine based on weather conditions

Data Flow Diagrams:



Commonly, with the largest wind turbines, the blade pitch will be varied continuously under active control to regulate power in higher operational wind speeds. Support structures are most commonly tubular steel towers tapering in some way, both in metal wall thickness and in diameter from tower base to tower top.

Wind energy is a type of renewable energy obtained from the wind, or in other words from the movement of air masses transferring from areas of high atmospheric pressure to nearby areas of lower atmospheric pressure, with speeds proportional to the pressure gradient. To take advantage of wind energy, machines called wind turbines or mills are used, activated by the movement of the wind as the propeller rotates. The propeller is in turn connected to a generator rotor that raises the speed of rotation to thousands of revolutions per minute, converting kinetic energy into electrical energy.

As we expand our awareness of and caring for the environment, we adopt behaviors that are likewise increasingly respectful of our environment. Following this trend, wind energy has been gaining credence as a clean and renewable alternative replacing other sources of energy based on fossil fuels, thus helping to reduce greenhouse gas emissions.

Obviously, an architectural project powered by the wind—using, for example, a mini wind turbine—must be located in an area with sufficient wind uninhibited by obstacles, with the necessary space to anchor the system as well. If local regulations allow, wind turbines can be placed even in dense urban areas by taking advantage of open rooftops. In every case, it is always important to carefully study the power of the wind turbine, which will determine the size of the propeller, its height, and the amount of energy produced for the operation of the building. Although the energy in kWh (Kilowatts per hour) generated by the turbine will likely not cover all energy costs, they can help to greatly reduce our usual monthly consumption.