Project Design Phase-I
Proposed Solution Template

Date	19 September 2022
Team ID	PNT2022TMID25491
Project Name	Predicting the energy output of wind turbine based on weather condition
Maximum Marks	2 Marks

Proposed Solution Template:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	It is necessary to find a way to predict the energy output of a wind turbine in different weather conditions. The obtained wind energy must be used to give a steady supply of electricity.
2.	Idea / Solution description	It is necessary to analyse and to store the data of the wind turbine in different weather conditions. With the past data stored in the database, we can predict the output of a wind turbine. And a prediction system is developed with a method of combining statistical models and physical models. Hence the output energy can be forecasted by the auto regressive model.
3.	Novelty / Uniqueness	Present wind farms don't have any methods to predict the output energy based on the changing weather conditions. By implementing this model, it can be useful to predict the output energy before and the efficiency of the wind farms can also been improved.
4.	Social Impact / Customer Satisfaction	Currently wind energy is not the primary source of electricity, but by implementing our solution we can produce more energy. So the utilisation of non renewable resources can also be minimised. A wind farm with prediction mode would be more efficient than the present one. Switching to a clean source of energy is good for both human health and the environment.
5.	Business Model (Revenue Model)	Improvement of life standard, local employment, social bonds creation, income development, better health, consumer choice, demographic impacts, and community development can be achieved by the proper usage of renewable energy systems.
6.	Scalability of the Solution	It can be applied on the large scale in the existing wind farm. So the performance can also be improved.