Project Design Phase-I

Proposed Solution Template:

Project team shall fill the following information in proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	As wind is stochastic, wind power generation is different from traditional thermal generation. Given the unpredictability associated to the output of the wind farms, wind power forecasting is crucial in addressing the difficulties of balancing supply and demand in any electrical system.
2.	Idea / Solution description	Using a technique that combines physical models with statistical models, a prediction system is created. The auto regressive model in this system predicts the wind farm's inlet state.
3.	Novelty / Uniqueness	The energy outputs from the previous year are taken into account in this model, which also correlates them with the weather and other important factors. To obtain the energy output, we can input the weather conditions into this model. The algorithm is also adjusted dynamically based on the expected value and actual output value.
4.	Social Impact / Customer Satisfaction	A safe and environment-friendly alternative for the generation of electric energy, wind energy receives high levels of popular acceptance. In terms of the social aspect, unlike hydroelectric plants, wind power plants do not have significant negative environmental effects and allow for the coexistence of the production of electricity from the wind alongside the use of land for agriculture and animals.
5.	Business Model (Revenue Model)	Wind utility companies will be able to make more money if they can increase energy output. Wind energy is a trusted source since we can predict the total power output at any given time.
6.	Scalability of the Solution	The data collected from the weather stations can be accessed in real time easily. The weather features can be easily obtained through the sensors installed that helps in predicting energy output.