Project Design Phase-I Proposed Solution

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| Date | 09 November 2022 |
| Team ID | PNT2022TMID12567 |
| Project Name | Predicting the energy output of wind turbine based on weather condition |
| Maximum Marks | 2 Marks |

**Proposed Solution Template:**

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| **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. |