Project Design Phase-II
Solution Requirements (Functional & Non-functional)

Date	03 October 2022
Team ID	PNT2022TMID31390
Project Name	Project - Predicting the energy output of wind Turbine based on weather condition
Maximum Marks	4 Marks

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Gmail
FR-2	User Confirmation	Confirmation via OTP
FR-3	User Login	Login by entering credentials
FR-4	Reset Password	Change the password by using forgot/reset password option
FR-5	Information on wind energy prediction	Display information about the software (wind energy prediction with electrical terms used - explained)
FR-6	Account Settings & Edit Profile	Provide edit options for making changes in profile and account
FR-7	Update Actual Output produced	Prompt the user to update actual output if he/she is already an existing user
FR-8	Get & validate the location	Prompt the user to point to the location of the windmill and validate the location
FR-9	Get the Height of the Windmill	Prompt the user to enter the height of the windmill
FR-10	Displaying Prediction	Make predictions based on inputs from the user, weather, and wind speed, and display the predicted value to the user.
FR-11	Download Prediction Results	Download as image Download as PDF
FR-12	View Previous prediction results	View previous predictions and actual wind energy output values
FR-13	Prior-Notification	Notify secondary consumers of Wind energy producers if expected power cannot be generated after viewing predicted value, climate change, and outages.
FR-14	Admin Login	Admin login by entering credentials
FR-15	Add Features	Add features based on improvements in technologies
FR-16	Content Optimization	Add/Remove/Modify contents
FR-17	Accounts Management	Edit permission settings for accounts Managing user accounts
FR-18	Customer Data Management	1)Store and manage predicted values, live data, actual power output

		2)Make and Store comparison table/curve of Actual Output and Predicted Output
FR-19	Customer Care Support	Manage customer queries

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	1) User-Friendly 2)Customized prediction based on each wind energy producer's wind farm parameters. 3)Electrical, Technical Terms used are explained within the software
NFR-2	**Security**	1)Secured cloud data 2)Allow users to use only passwords which satisfy the constraints 3) Provide 2-Factor Authentication
NFR-3	**Reliability**	1)Handle the less output-predicted situations due to unexpected weather changes and outages by sending notifications. 2) Maintain software, network traffic, website 3) Resolving technical issues occurring in short-time
NFR-4	**Performance**	Gives the most accurate prediction in short-time
NFR-5	**Availability**	1)Always available online 2) Supports most of the device configurations
NFR-6	**Scalability**	1)As data grows upon collection, storing, and maintenance of predicted values, actual output, wind speed, and weather in the cloud storage, utilizing all these data gives more accurate predictions in the upcoming years. 2)Modifying features often as data grows and technology improves to avoid large changes over a period