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

Date	19 October 2022
Team ID	PNT2022TMID34159
Project Name	Predicting the energy output of wind turbine based on weather condition
Maximum Marks	4 Marks

Functional Requirements:

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Form Registration through Gmail Registration through LinkedIN
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Input	Location of the user must be ON state on the device.
FR-4	Weather Condtion	Based on location the Weather condition data is gathered through any satellites or resourse like API
FR-5	Regression tree method	To get more reliable output these methods are used.
FR-6	Modeling the data	This is used to Genetic programming will helps to get more accurate result.
FR-7	Wind Energy Prediction	A synergeic neural network based model is used.
FR-8	Energy Output	The formula is *capacity factor=actual output/maximum possible output* as ***kWh/yr***

Non-functional Requirements:

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	• It must be user friendly for all medium of people. • More Effective. • Less Data consumption.
NFR-2	**Security**	• Secure Software Development • Forms authentication must be deployed. • Encryption ,key Management ,Firewall and Router Management.
NFR-3	**Reliability**	Wind energy is reliable because it Highly securable, unlimited and effective integrated data.
NFR-4	**Performance**	There we use Machine Learning techniques are combined so, the system performs well under all critical circumstance thus provide the user a well satisfied interface
NFR-5	**Availability**	The most required is a device with good internet connection,they are globally available to all user across the world.
NFR-6	**Scalability**	It will perform well under an increased or expanding workload as huge storage data and to retrieval data.