Project Design Phase-I Problem Solution Fit

Project Title: Predicting the energy output of wind turbine based on weather condition

Team ID: PNT2022TMID42592

Define CS, fit into CC

1. CUSTOMER SEGMENT(S) CS

- Meteorologist
- People
- Forecasters

6. CUSTOMER CONSTRAINTS CC

- By time consuming, instead of manual calculation of wind energy we go for the web application
- To show the output energy of a wind turbine within few minutes

5. AVAILABLE SOLUTIONS AS

- In the past forecasters cannot find the exact value of output energy of the wind turbine.
- The Forecasters who do not have any prior knowledge about the wind energy can also predict the energy in the web application

Explore AS, differentiate

Focus on J&P, tap into BE, understand RC

2. JOBS-TO-BE-DONE / PROBLEMS J&P

To build a supervised machine learning model using regression algorithms for forecasting the value of an energy of a wind turbine based on multiple attributes such as

- **sharpness,**
- **reliability,**
- **resolution and**
- **discrimination**.

9. PROBLEM ROOT CAUSE RC

- In Past, the forecasters will predict the output energy of a wind turbine as random value.
- By using this application he can predict the accurate output energy of a wind turbine

7. BEHAVIOUR BE

- The input value that produces by the forecasters will be the correct value
- The model is to be built that would give the accurate output of a wind energy.

Focus on J&P, tap into BE, understand RC

Identify strong TR & EM				Identify strong TR & EM
	3. TRIGGERS TR The Meteorologist or the forecasters can predict the energy output of wind turbine by using the weather condition and the wind turbine	**10. YOUR SOLUTION** SL The main aim of this project is to predict the accurate output energy of a wind turbine based on weather condition using the Machine Learning (ML) algorithms and collection of data about the input values of wind energy. The project should take parameters related to wind speed, wind direction, temperature, pressure, and humidity as inputs.	**8. CHANNELS of BEHAVIOUR** CH **ONLINE:** • The Meteorologist should predict the exact accurate output energy of a wind turbine. • The Forecasters should know the input values for the prediction. **OFFLINE:** • The Meteorologist should decide the wind speed by seeing the weather condition. • They can predict the output by manually.	
	4. EMOTIONS: BEFORE / AFTER EM **Before:** • The Meteorologist can not predict the exact wind energy that produces by the wind turbine. **After:** • The Meteorologist can be able to predict the accurate output that produces by the wind turbine			