

Project Design Phase

Problem – Solution Fit Template

Date	15 February 2026
Team ID	LTVIP2026TMIDS80318
Project Name	Weather-Based Prediction of Wind Turbine Energy Output: A Next-Generation Approach to Renewable Energy Management
Maximum Marks	2 Marks

Problem – Solution Fit Template:

The Problem-Solution Fit simply means that you have found a problem with your customer and that the solution you have realized for it actually solves the customer's problem. It helps entrepreneurs, marketers and corporate innovators identify behavioral patterns and recognize what would work and why

Purpose:

- ☐ Solve complex problems in a way that fits the state of your customers.
- ☐ Succeed faster and increase your solution adoption by tapping into existing mediums and channels of behavior.
- ☐ Sharpen your communication and marketing strategy with the right triggers and messaging.
- ☐ Increase touch-points with your company by finding the right problem-behavior fit and building trust by solving frequent annoyances, or urgent or costly problems.
- ☐ Understand the existing situation in order to improve it for your target group.

Template:

1. CUSTOMER SEGMENT(S) CS <small>Who's your stakeholder?</small> <ul style="list-style-type: none"> Wind farm operators Renewable energy grid managers Energy planners/strategists 	6. CUSTOMER CONSTRAINTS CC <small>What constraints prevent your stakeholders from taking action or limit their choices of solutions? i.e. spending power, budget, to cash, network connection, wearable devices.</small>	5. AVAILABLE SOLUTIONS AS <small>Which solutions are available to the customers when they face the problem or need to get the job done? Have to have it the past that have & cons do these solutions have? E.g. pen and paper for an alternative to digital notetaking</small>
2. JOBS-TO-BE-DONE / PROBLEMS J&P <small>Which jobs-to-be-done (or problems) do you ask for your users/stakeholders?</small> <ul style="list-style-type: none"> Accurately predict wind turbine energy output Optimize renewable energy planning and grid stability Improve efficiency and maximize use of wind energy resource 	9. PROBLEM ROOT CAUSE RC <ul style="list-style-type: none"> Weather conditions are unpredictable and dynamic Manual methods are slow and often inaccurate Traditional models struggle to handle real-time weather 	7. BEHAVIOUR BE <ul style="list-style-type: none"> Manual weather prediction models Basic weather apps Trial-and-error or relying on historical data
3. TRIGGERS TR <small>Seeing a neighbouring wind farm struggling with inaccurate forecasts, noticing energy waste during high wind periods</small>	8. YOUR SOLUTION SL A web-based tool that uses real time weather data and machine learning algorithms to predict wind turbine energy output with improved accuracy and reliability	8. CHANNELS of BEHAVIOUR CH A. ONLINE <ul style="list-style-type: none"> Industry forums/blogs Renewable energy conferences Wind energy newsletters
3. TRIGGERS TR <small>Seeing a neighbouring wind farm struggling with inaccurate forecasts, noticing energy waste during high wind period.</small>	4. YOUR SOLUTION SL A web-based tool that uses real time weather data and machine learning algorithms to predict wind turbine energy output with improved accuracy & reliability	8. CHANNELS of BEHAVIOR CH A. OFFLINE <ul style="list-style-type: none"> Energy sector exhibitions Workshops and seminars Utility company collaborations
4. EMOTIONS: BEFORE / AFTER EM Before: Frustrated, uncertain about energy planning → After: Confident, in control, making data driven decisions	9. YOUR SOLUTION SL Before: Frustrated, uncertain about energy planning → After: Confident, in control, making data driven decisions	8. CHANNELS of BEHAVIOR EM A. ONLINE <ul style="list-style-type: none"> Industry forums/blogs Renewable energy conferences Wind energy newsletters