User Acceptance Testing (UAT) 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	

Project Overview:

Project Name: Weather-Based Prediction of Wind Turbine Energy Output: A Next-Generation Approach to Renewable Energy Management

Project Description: This project is a web-based application that predicts wind turbine energy output based on real-time weather conditions. The system fetches live weather data using the OpenWeather API and uses a Random Forest Machine Learning model to predict wind energy output.

Project Version: Version 1.0

Testing Period: 29 Jan 2026 to 15 Feb 2026

Testing Scope:

[Features and Functionalities]: City selection and weather data retrieval

Display of temperature, humidity, pressure, wind speed

Wind energy prediction based on input values

Error handling for invalid city names

UI responsiveness

Model prediction accuracy

[LUser Stories or Requirements]: USN-1: Fetch weather data using city name

USN-2: Display weather details correctly

USN-3: Predict wind turbine energy output

USN-4: Handle invalid input gracefully

USN-5: Display prediction results on web page

Testing Environment:

URL/Location: https://windenergyprediction-3.onrender.com

Test Cases:

Test Case ID	Test Scenario	Test Steps	Expected Result	Actual Result	Pass/Fail
TC-001	Fetch weather data for valid city	1. Enter city name 2. Click “Check Weather”	Weather details displayed correctly	Weather details shown	Pass
TC-002	Predict energy output	1. Enter power & wind speed 2. Click Predict	Predicted energy displayed	Prediction shown correctly	Pass

Bug Tracking:

Bug ID	Bug Description	Steps to reproduce	Severity	Status	Additional feedback
BG-001	Selected city resets to default after refresh	1. Select city 2. Submit 3. Page reload	Medium	Closed	Fixed using Jinja selected condition
BG-002	API error when invalid city entered	Enter random city name	Low	Closed	Added Error Handling

Sign-off:

Tester Name: Bommareddy Lakshmi Jahnavi

Date: 10 Feb 2026

Signature: Lakshmi Jahnavi

Notes:

- Ensure that all test cases cover both positive and negative scenarios.
- Encourage testers to provide detailed feedback, including any suggestions for improvement.
- Bug tracking should include details such as severity, status, and steps to reproduce.
- Obtain sign-off from both the project manager and product owner before proceeding with deployment.