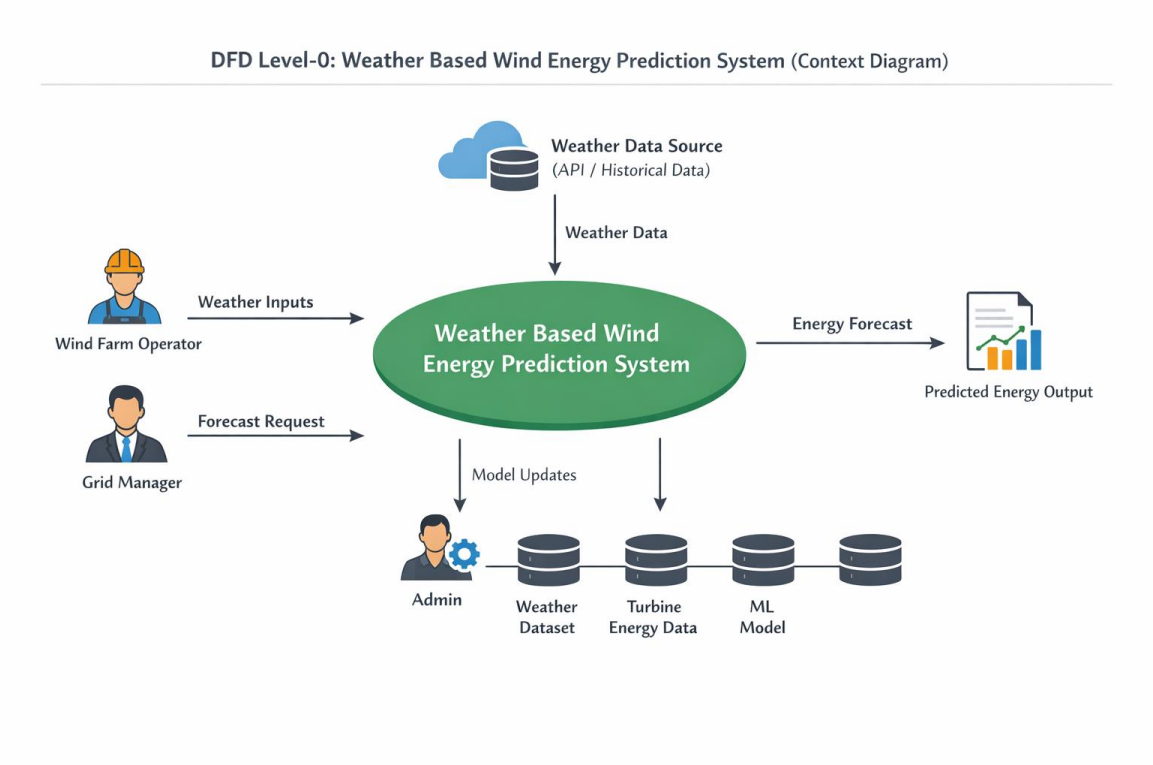
Project Design Phase-II

Data Flow Diagram & User Stories

Date	12 February 2026
Team ID	LTVIP2026TMIDS83348
Project Name	Weather Based Prediction Of Wind Turbine Energy Output - A Next Generation Approach To Renewable Energy Management
Maximum Marks	4 Marks

Data Flow Diagram (DFD - Level 0)

A Level-0 DFD illustrates how data flows between the user, web application, preprocessing layer, machine learning model, weather data source, and energy database.



User Stories

User Type	Epic	User Story No.	User Story / Task	Acceptance Criteria	Priority	Release
Wind Farm Operator (Web User)	Prediction	USN-1	As an operator, I can enter weather parameters and get	Predicted energy (kW/MW) is displayed clearly on the screen.	High	Sprint-1

			predicted wind energy output.			
Wind Farm Operator (Web User)	EDA	USN-2	As an operator, I can view historical energy generation trends and weather correlation charts.	Charts load correctly and show proper time-based trends.	Medium	Sprint-1
Grid Manager	Insights	USN-3	As a grid manager, I can view forecasted energy output summaries for planning load distribution.	Summary shows daily/weekly predicted generation values.	High	Sprint-2
Admin	Model Ops	USN-4	As an admin, I can update or retrain the machine learning model.	New model loads successfully without breaking predictions.	Medium	Sprint-3
Any User	UX	USN-5	As a user, I can view clear prediction results	Result page shows predicted output with graphs and performance metrics.	High	Sprint-1