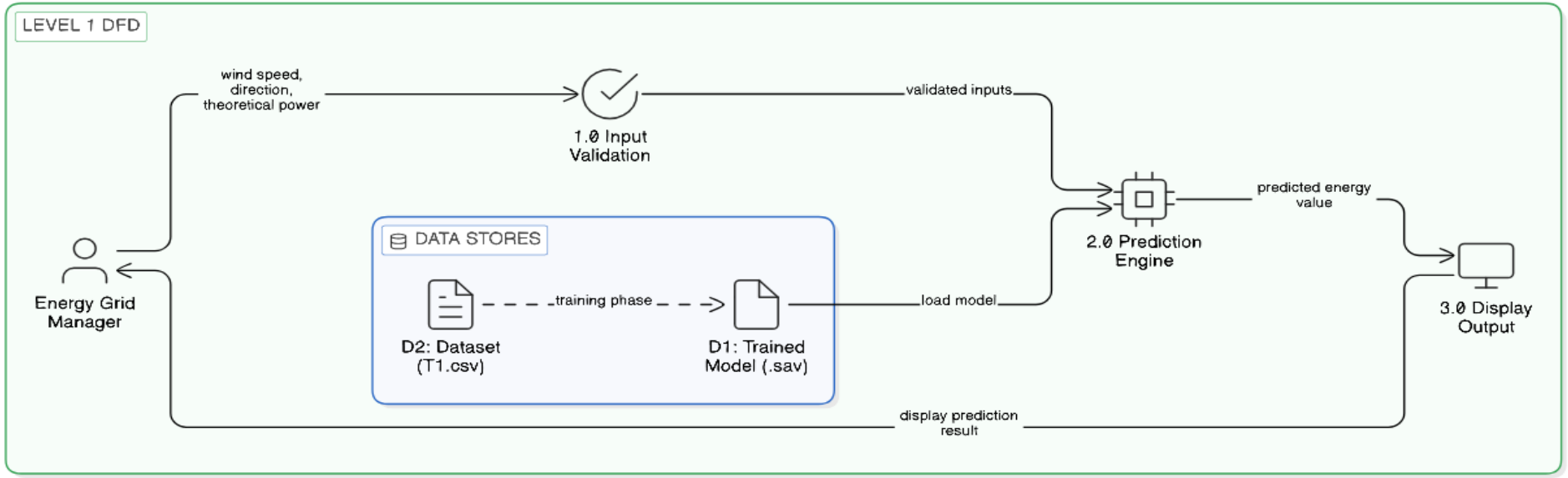
Project Design Phase-II
Data Flow Diagram & User Stories

Date	15 February 2026
Team ID	LTVIP2026TMIDS62246
Project Name	Weather-Based Prediction of Wind Turbine Energy Output: A Next-Generation Approach to Renewable Energy Management
Maximum Marks	4 Marks

Data Flow Diagrams:

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.



User Stories

Use the below template to list all the user stories for the product.

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance Criteria	Priority	Release
Energy Manager (Web User)	Energy Prediction	USN-1	As a user, I can enter wind speed, wind direction, and theoretical power values to predict energy output.	The system displays predicted energy output successfully.	High	Sprint-1
Energy Manager	Model Prediction	USN-2	As a user, I want the system to process my inputs using a trained ML model.	Prediction result is generated without errors.	High	Sprint-1
Energy Manager	Input Validation	USN-3	As a user, I should receive an error message if I enter invalid inputs.	System shows validation error message.	High	Sprint-1
Energy Manager	Visualization	USN-4	As a user, I want to view model performance graphs.	Scatter plot and evaluation metrics are displayed.	Medium	Sprint-1
Administrator	Model Training	USN-5	As an admin, I can train and update the ML model using dataset.	Updated model file is generated successfully.	Medium	Sprint-2
Administrator	System Maintenance	USN-6	As an admin, I can monitor system functionality.	Application runs without crash.	Low	Sprint-2