Hourly Load Prediction Document

1. Overview

This document presents the methodology, data requirements, and results for the hourly load prediction of the designated power system for the forecasting period.

2. Purpose

The objective is to provide reliable estimates of hourly system load to support operational planning, resource allocation, and grid stability.

3. Scope

- Geographical Area: [Specify area]
- Forecasting Period: [Start Date] to [End Date]
- Forecast Interval: Hourly

4. Data Sources

- Historical Load Data: [Describe source]
- Weather Data: [Describe source, variables]
- Calendar Events: [List relevant events, holidays]

5. Methodology

1. Data Collection & Preprocessing
2. Feature Engineering (e.g., temperature, day type)
3. Model Selection (e.g., ARIMA, Regression, Machine Learning)
4. Model Training & Validation
5. Prediction Generation

6. Assumptions

- No major system outages during forecast period
- Weather forecasts are reasonably accurate
- Socioeconomic activity remains stable

7. Results

Hour	Predicted Load (MW)	Confidence Interval (MW)
00:00 - 01:00	[Value]	[Lower - Upper]
01:00 - 02:00	[Value]	[Lower - Upper]

8. Error Analysis

Include comparison with recent actual load data and error metrics such as MAE, RMSE.

- Mean Absolute Error (MAE): [Value]
- Root Mean Square Error (RMSE): [Value]

9. Conclusion & Recommendations

Summarize model performance and provide recommendations for operational decision-making and further

model improvements.

Important Notes

- Hourly load prediction documents are critical for short-term operational planning and system reliability.
- Assumptions and data quality directly impact prediction accuracy.
- Regular model updates with the latest data are recommended.
- External factors such as extreme weather or unprecedented events can significantly affect outcomes.