Datasets Mapped to Agents & Use Cases

Dataset Source	Dataset Type	Use Case	Assigned Agent
CEA (cea.nic.in)	Power generation by source, load curves, outages, operational reports	Load prediction, grid behavior, efficiency analysis	Load Forecast Agent, Efficiency Auditor Agent
MNRE (mnre.gov.in)	Solar radiation, state-wise capacity, off-grid data	Solar & wind generation prediction	Renewable Predictor Agent
NREL India	Hourly solar/wind generation potential, resource maps	State-level forecasting, planning	Renewable Predictor Agent
IMD (mausam.imd.gov.i n)	Temperature, humidity, wind speed, weather forecasts	Enhancing renewable prediction models	Weather-Driven Forecast Enhancer
POSOCO (posoco.in)	Real-time grid performance, renewable integration, demand-supply balance	Real-time load & frequency analysis	Load Forecast Agent, Renewable Mix Evaluator Agent
Data.gov.in	Energy usage by sector, rural	Macro-level analytics, benchmarking	Efficiency Auditor Agent, KPI

■ Dataset Metadata Table

Source	Dataset Name	Format	Update Frequency	Use in ML Workflow
CEA	Monthly Power Generation Report	CSV/XLS	Monthly	Load forecasting, generation mix analysis
MNRE	Solar Radiation Data	XLS/GeoTIFF	Monthly/Season al	Feature in renewable output forecasting
NREL	Wind Resource Potential Map	CSV/GeoJSO N	Annual	Region-wise renewable forecasting
IMD	Hourly Weather Forecasts	CSV/API	Hourly/Daily	Weather-based adjustments in prediction models
POSOCO	Daily Grid Report	PDF/CSV	Daily	Agent benchmarking, grid status modeling
Data.gov.i n	Transmission Loss Report	CSV	Annual/Quarterl y	Grid efficiency trend detection

Benchmark Alignment

Benchmark Source	KPI	Agent/Metric
IEA	Renewable penetration %, load curve smoothing	Renewable Predictor, Load Forecast Agent
ISO 50001	Energy efficiency score, grid loss %	Efficiency Auditor Agent
UN SDG 7	Affordable & Clean Energy Index	KPI Benchmarking Agent

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POSOCO (posoco.in)	Real-time grid performance, renewable integration, demand-supply balance	Real-time load & frequency analysis	Load Forecast Agent, Renewable Mix Evaluator Agent
Data.gov.in	Energy usage by sector, rural electrification, transmission losses	Macro-level analytics, benchmarking	Efficiency Auditor Agent, KPI Benchmarking Agent

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