

CUSTOMER CASE STUDY

Plant Simulator with Forecasting Models

BKOAI developed a forecasting tool that uses weather and plant data to support market bidding and production planning across a 168-hour forecast horizon

Industry: Power Generation

GOALS

- Improve the accuracy of market bidding strategies for power generation.
- Leverage week-ahead forecasted weather conditions to plan operational capacity.
- Standardize and streamline the integration of plant simulation data into bidding workflows.
- Improve profitability by optimizing power-generation asset utilization.

CHALLENGES

- Limited visibility into the complex interaction of market dynamics and plant operations.
- Difficulty incorporating week-ahead weather forecasts into manual bidding workflows.
- Lack of a centralized interface to simulate and test ERCOT market bidding scenarios.
- Inefficient operational planning leading to missed revenue opportunities during periods of volatility.

SOLUTIONS

- Developed an advanced forecasting tool integrating week-ahead weather conditions.
- Implemented the CCTWIN simulator to model plant operations under forecasted conditions.
- Created a user-friendly spreadsheet interface to easily configure and fine-tune weekly inputs.
- Integrated automated reporting to deliver bidding forecasts across a 168-hour horizon via email or direct market APIs.

RESULTS

- Supported more informed market-bidding decisions during periods when the application was available.
- Provided clear visibility into granular bidding forecasts across a 168-hour horizon.
- Streamlined data sharing through automated email delivery and direct API integration.
- Improved strategic decision-making by aligning weather forecasts with simulated plant outputs.

EXECUTIVE SUMMARY

BKOAI developed a forecasting tool that uses weather and plant data to support market bidding and production planning across a 168-hour forecast horizon. The solution combines week-ahead weather inputs with the CCTWIN plant simulator, a spreadsheet interface for weekly configuration, and automated reporting through email or direct market APIs. This provides clearer visibility into granular bidding forecasts and helps align market decisions with simulated plant outputs.

Connecting Weather, Market Bidding, and Plant Operations

Power-generation bidding decisions are difficult when market dynamics, plant constraints, and week-ahead weather forecasts must be evaluated separately. The client needed a practical way to connect forecast conditions with simulated plant behavior and bidding decisions.

CCTWIN Simulation and a 168-Hour Forecast Workflow

BKOAI implemented the CCTWIN simulator to model plant operations under forecasted conditions and created a spreadsheet interface for configuring and fine-tuning weekly inputs. The workflow generates bidding forecasts across a 168-hour horizon and delivers results through automated email or direct market APIs.

Supporting More Informed Bidding Decisions

The solution provided granular visibility into week-ahead bidding forecasts and streamlined data sharing. By aligning weather forecasts with simulated plant outputs, it supported more informed market-bidding decisions and stronger production-planning decisions during periods when the application was available.

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