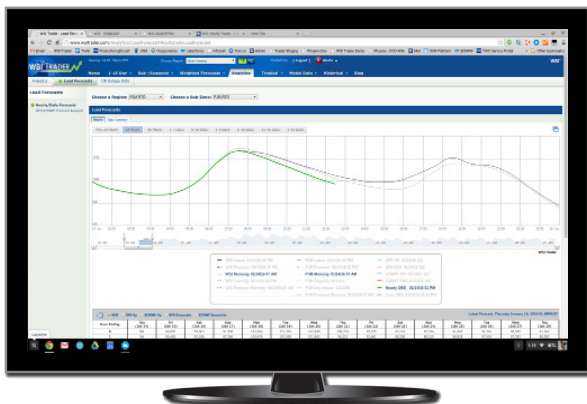# WSI Trader Load Forecast

Improved Load Forecasts Based on Cutting-Edge Meteorology and Data Science

Overview

Load forecasting depends on weather, yet the providers of these forecasts have not been weather specialists. The Weather Company, an IBM Business (Weather) has developed an improved load-forecasting system anchored in advanced and proprietary weather and data science. WSI Trader Load Forecasts provides hourly updates based on the company's industry-leading weather forecasting technology, with 4 km spatial resolution around the globe.

The solution is based on the most accurate, timely, and spatially-resolute weather forecasts in the industry, combined with a self-learning neural network for load forecasting and an innovative technique for predicting holiday load. Using historical forecasts, It has been shown to significantly outperform the standard ISO load forecast, with error rates less than 2% in the first few days and continued equal or superior forecasts produced hourly out to ten days.

As the world's global markets become increasingly interconnected, The Weather Company offers the only weather-decision support platform providing a comprehensive global view of the latest 15-day forecast, including dynamic alerts and notifications as needed.

Improved Weather Forecasting

Good load forecasts are strongly dependent on good weather forecasts, and The Weather Company's new weather forecasting engine, Forecasts on Demand (FoD), based on the most advanced science in the industry. FoD is an automated system that produces hourly forecasts for all of the most relevant weather variables (e.g., temperature, dew point, wind speed, precipitation, cloud cover, snowfall) at 4 km spatial resolution across the globe. These forecasts are updated hourly based on the latest observations and model data. The FoD forecasts are a skill-weighted blend of all available weather models, including the ECMWF, GFS, and NAM models, along with GFS MOS, The Weather Company's high-resolution weather model (RPM), and a proprietary calibrated ECMWF ensemble MOS.

Weights are assigned to each model based on the optimal combination of bias-corrected model forecasts over the most recent weeks. The first few hours of the forecast period are "forward-corrected" based on the latest observations. This insures there are no discontinuities early in the forecast period and results in improved short-term forecasting.

"Superior weather forecasting provides market traders with a significant edge. The Weather Company, is the first company to combine both weather forecasting and data science disciplines to fundamentally improve load forecasts."

Mark D. Miller
SVP Decision Support
The Weather Company

business.weather.com

The Weather Company
An IBM Business

More Accurate Storm and Hyper-Local Forecasting

A key advantage of WSI Trader Load Forecasts is its short-term, high-resolution accuracy. The weather forecasts are updated each hour as new model data, NOAA observations and, data from the Weather Underground observation network are received. The 4 km spatial resolution allows for hyper-local forecasting that can predict local storm occurrences likely to affect load demand in the very near term, predict local storm occurrences, such as a thunderstorm over a population center, that are likely to affect load demand in the very near term.This is a capability not available in competitive forecast solutions.

Key Benefits

- **Gain a competitive edge** in both near-term and long-range time periods with the most accurate, precise, and resolute data available.

- **Distinguish between types** of holidays and how they impact different subregions and zones thanks to our proprietary holiday-forecasting algorithms.

- **Get exceptionally accurate** bal-day and next-day forecasts based on our unique forward-correction algorithms.

- **Leverage hyper-local forecasting** that can predict local storms likely to affect load demand in the very near term.

- **Quickly visualize forecasts** with the graphical, intuitive WSI Trader user interface.

Advanced Load Forecasting

To convert superior weather data into useful load forecasts, our data scientists have developed a comprehensive set of self-learning neural networks for predicting load in different ISO zones. For each zones, more than 100 neural networks were trained using actual weather conditions.

Because not all days are equal, unique neural networks were trained to predict load for different types of days: regular weekdays, Saturdays, Sundays, and holidays. The load profile for each holiday is treated differently based on a proprietary algorithm developed by examining historical load profiles on those days. The result is superior holiday forecasting.

This specialization was further refined by training multiple neural networks for bal-day, next-day and medium-range forecasting for each day type. Variable selection was used to optimize the appropriate set of weather parameters needed for each zone, type of day, and forecast period. The bal-day neural networks blend the most recent values of observed load into the raw forecast values using a forward-correction scheme similar to that used in FoD. The next-day and medium-range forecasts are purely model driven.

[Learn more](#)

The Weather Company
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