

# East Kentucky Power Cooperative Short-Term Load Forecast Methodology

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East Kentucky Power Cooperative produces an hourly short term load forecast for the current day and the following 29 days. This process is accomplished in two phases.

The first phase is the forecast development phase. The short term load forecast is produced with a combination of artificial neural networks and regression models using the Itron MetrixND forecasting package. Additionally, there is a similar day module within NDAuto, the automated forecasting tool, which analyzes similar historical loads and weather data when preparing the forecast. Inputs into the models include previous hourly loads, hourly actual weather data, and hourly forecasted weather data. All weather data is obtained from a third-party weather provider. This phase of the forecast recurs every hour as new weather and load data is available.

The second phase of the process requires judgment and expertise from key personnel. Each business day morning, the day-ahead planners and load forecasters in the Power Supply Planning department review the forecast for reasonability. Adjustments to the forecast are made at the discretion of the planners. If base assumptions change, the short term forecast is updated in the afternoon. A revised short term load forecast is prepared on Saturdays and/or Sundays if the assumptions used on Friday for the Saturday, Sunday, or Monday forecasts change materially.

The results of this process combine the power of time series analysis with the judgment of human planners. Once complete, the load forecast is submitted to the EKPC Balancing Authority. The balancing authority is responsible for submitting the load forecast to the reliability coordinator automatically on an hourly basis.