



MetrixND[®]

Energy Forecasting Tool

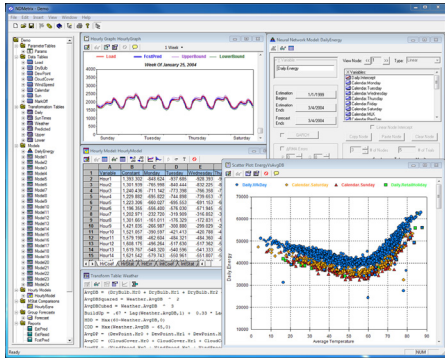
Powerful, Flexible and Proven

Accurate forecasts provide the foundation for daily operations, market planning and risk management. Itron's MetrixND software allows rapid development of accurate forecasts, placing you in the best position to make important business decisions with confidence.

Designed to take advantage of advanced Windows capabilities, MetrixND's intuitive user interface and drag-and-drop architecture streamlines the development of forecasting variables and models. Evaluation graphs, diagnostic statistics and reports are readily available to assist in developing and analyzing forecasts.

This interactive design strategy allows the forecast analyst to quickly evaluate alternative models and select the model that works best for their particular data.

MetrixND is a flexible modeling tool, widely used by the top energy forecasters at leading utilities and energy providers throughout the world. MetrixND puts the power of the most advanced modeling techniques at your fingertips, enabling you to develop accurate forecasts and apply them to business decisions with confidence.



MetrixND

THE TOOLS

You choose the method that works best for your data and MetrixND will deliver accurate results, quickly and easily. Or, use a combination of methods to provide optimal forecast accuracy.

Exponential Smoothing

Ideal for projecting customer growth trends that support monthly sales and peak forecasting applications.

ARIMA

For seasoned time series professionals who want to visualize how historical data patterns extend into the future.

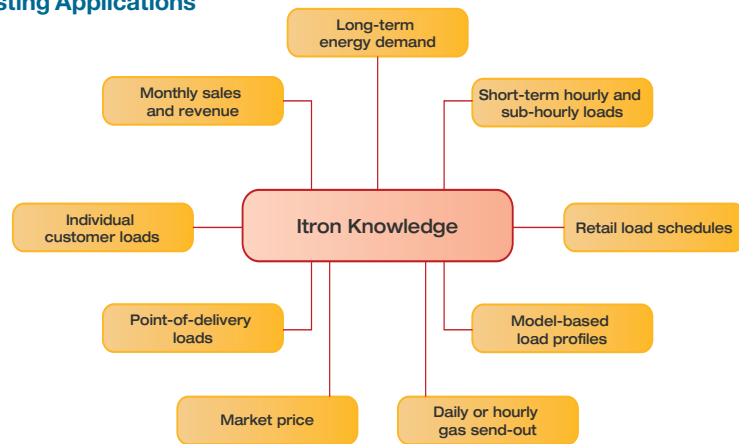
Regression

The workhorse of the energy forecasting professional. No other tool lets you build multi-variate models faster.

Neural Networks

Essential for short-term forecasting where modeling the nonlinear response between loads and weather matters the most.

Forecasting Applications



CAPABILITIES

Integrates with Existing Data Sources

Moving data in and out of MetrixND is easy. MetrixND works with Excel spreadsheets and a variety of databases, including Access, MV-90xi, ORACLE and SQL Server.

Data Frequencies

MetrixND works with all data frequencies: sub-hourly, hourly, daily, weekly, monthly, quarterly and annual.

Graphical Analysis

Develop accurate forecasts with confidence. MetrixND provides the most meaningful diagnostics and powerful graphics capabilities at the click of a button, allowing you to see, understand and present your forecasts.

Variable Creation

MetrixND enables you to create analysis variables on the fly using spreadsheet-like formulas that allow you to try different approaches and variables without having to learn a programming language.

Hourly Modeling

MetrixND allows rapid development of hourly or sub-hourly models. The models you build can be calibrated automatically to forecasts for daily energy and peak demand.

Model Comparisons

MetrixND provides a simple way to compare alternative model specifications by letting you select among competing models quickly and efficiently.

Simulations

Monthly variance analyses are a snap with MetrixND. You can drag-and-drop alternative forecast drivers into your model and view the impact on your forecast.

Time Series Residuals

MetrixND provides a one-step process for including a time series model of the residuals to improve overall forecast.

CAPABILITIES

Quantifying Forecast Uncertainty

By employing the GARCH option in the regression and neural network models, it's easy to construct dynamic confidence bounds for your forecast.

Visual Basic for Applications Module

Microsoft's VBA is integrated into MetrixND, allowing you to write powerful macros to build any MetrixND element, including models and modeling variables.

Neural Network Options

MetrixND lets you build your own neural network models quickly and efficiently.

Use the advanced neural network model to specify:

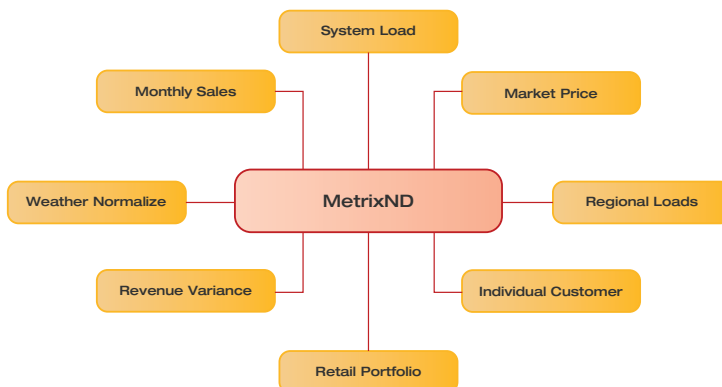
- » The functional form of the nodes in the hidden layer
- » Custom variable lists for each node
- » Inclusion of time series residuals
- » Inclusion of GARCH residual variances
- » Test periods for model evaluation
- » Exclusion of bad spots in the data

Accelerated Optimization

MetrixND uses fast optimization algorithms resulting in rapid training. As new data become available, continued model learning takes only a few seconds.

THE USER COMMUNITY

More than 150 utilities, ISOs, municipals, cooperatives and other energy service providers use Itron's MetrixND. Licensed users have unique access to industry experts in energy forecasting. Additional benefits include a newsletter that keeps you abreast of the latest forecasting techniques, and an annual meeting that covers the nuts and bolts of energy forecasting and brings you together to network with industry peers.



APPLYING METRIXND

Short- and Long-Term Hourly Forecasting Applications

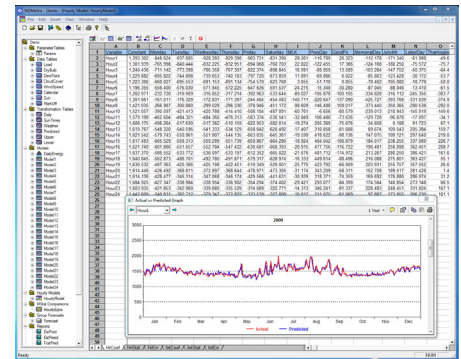
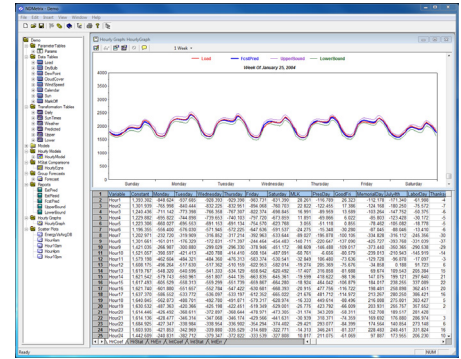
Hourly load forecasting applications typically use a combination of neural networks, time series and regression approaches. No other package provides the modeling power and flexibility that MetrixND delivers. Models are customized to optimize accuracy for each location. The MetrixND modeling system allows you to quickly and efficiently evaluate load data and weather relationships, and compare the relative accuracy and stability of alternative model specifications.

Financial Forecasting

Financial forecast applications cover a range of topics, including customer, sales volume, peak, revenue, variance analyses, normalized sales and revenues. MetrixND allows you to estimate forecast models, generate sector sales forecasts, and calculate weather impacts. Results can be easily exported for generating forecast and variance analysis reports.

Retail and Delivery Point Forecasting

MetrixND supports Itron's retail and delivery point systems with sub-hourly, hourly or daily forecasts. Forecasts are created for profiles of portfolios of retail customers or lists of delivery points, where a portfolio can change on a daily basis. For individual customers or delivery points, the system provides a set of templates that are assigned based on the properties of the load. This allows simple models to be used for calendar-driven loads, while more complex models are used for loads driven by weather, price or other factors.



MetrixND

For additional information or to view a demo, visit www.itron.com/forecasting, call 1-800-755-9585 or email forecasting@itron.com.



Itron is a global technology company. We build solutions that help utilities measure, manage and analyze energy and water. Our broad product portfolio includes electricity, gas, water and thermal energy measurement and control technology; communications systems; software; and professional services. With thousands of employees supporting nearly 8,000 utilities in more than 100 countries, Itron empowers utilities to responsibly and efficiently manage energy and water resources.

Join us in creating a more resourceful world; start here: www.itron.com

CORPORATE HEADQUARTERS

2111 N Molter Road
Liberty Lake, WA 99019
USA

Phone: 1.800.635.5461

Fax: 1.509.891.3355