



There are three major interconnections within the United States: Western, Eastern, and ERCOT

Accurate Modeling has Major Influence on Power Plant Economics

In the power industry today, studies on which major economic decisions are based typically involve an ever-expanding portion of the interconnected power system. Both transmission and generation must be simulated to provide an accurate system analysis. Data must be obtained from multiple sources in many different formats and combined into an integrated package. Obtaining accurate data to model the power system, including economic data and equipment characteristics, is time-consuming and tedious but, nonetheless, requires a high level of technical knowledge.

GE Energy has done this work and offers the resulting data sets to you, the Multi-Area Production Simulation Software (MAPS™) user.

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MAPS Software Gives You an Edge

MAPS software helps you take advantage of opportunities created by today's deregulated markets. MAPS models transmission topology and the distribution of loads to help you accurately predict the dispatch of generation throughout the system.

Various items of interest that can be studied using MAPS software include:

- ♦ Spot prices or locational marginal prices (LMP)
- ♦ Shadow prices, determination and evaluation of transmission congestion
- ♦ Environmental compliance strategy analysis
- ♦ Siting of new generation
- ♦ Evaluation of assets
- ♦ Determination of projected revenue streams

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Up-to-date data describing rapidly changing power systems is necessary for studying today's deregulated markets. GE has developed, and maintains, an extensive data library to meet the needs of today's analysts.

GE offers MAPS databases for the three major interconnections within the United States: Western, Eastern, and ERCOT. In addition, new data sets can be developed or existing ones customized. These databases can be used to simulate individual NERC regions, either within an interconnection, or expanded combinations of the regions.

The databases consist of four integral elements:

1. **Generation Data.** Thermal unit characteristics including heat rates, full and partial forced outages, fixed and variable O&M, minimum downtime and uptime, must-run capability, emissions, and fuel type. Data on maintenance scheduling, hydro, pumped storage and operating reserves are also included.
2. **Solved AC Power Flow.** A solved powerflow data set for the system is assembled from public sources. The powerflow data have been validated and verified for use with MAPS.
3. **Area Loads.** The chronological hourly load shapes and annual peak loads and energy projections for the areas within the pools are provided. These load shapes are assigned to individual load buses in the power flow representation.
4. **Transmission Data.** Transmission constraints provided include the important lines, interfaces, and contingencies (for a secure dispatch) to be monitored along with their most up-to-date limits. "Flowgates" for the Eastern Interconnection and information from the "Path Rating Catalog" for the Western Interconnection are included in the constraint data.

Customized Databases

You can plan your network using your particular system operating conditions. This is because MAPS databases can be customized to incorporate your proprietary system data. In addition, databases are available which can be customized for output to company-specific applications.

Accurate Decisions Depend on Accurate Data

Your business depends on accurate modeling data for accurate decision-making. GE applies more than 80 years of experience in analyzing the power industry's economics and equipment to provide you with the tools you need to run your business successfully. Contact the representatives named below to find out more about MAPS software and other services that GE Energy provides to help optimize your business strategies.

[For more information and pricing on MAPS Software, databases, or customized databases, contact](#)

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