



## AURORA<sup>xmp</sup>®: OPTIMIZED RESOURCE EXPANSION

### Fully automated long term optimization capability for determining capacity expansion and retirements

- True Economic Commitment of Resources
- Automated addition and retirement of resources
- Simultaneous Whole System Dispatch
- Run Speed that outperforms other models
- Capacity Price

**AURORA<sup>xmp</sup>** is the ideal model for lifecycle analysis and resource optimization studies. The model is an exceptionally fast, transmission-constrained model that uses market fundamentals to accurately forecast hourly marginal prices in each market zone.

**AURORA<sup>xmp</sup>**'s advanced dispatch logic uses market economics to determine the long-term resource position. **AURORA<sup>xmp</sup>**'s recursive optimization process identifies the set of resources with the highest and lowest market values to produce economically consistent capacity expansion and retirement schedules.

### A Market Fundamentals Approach to Optimizing Resources

**AURORA<sup>xmp</sup>**'s speed and flexibility make it easy to create a coordinated optimized forecast of capacity expansion schedules for multiple market areas. **AURORA<sup>xmp</sup>** estimates price and dispatch using hourly demands and individual resource-operating characteristics in a transmission-constrained, chronological dispatch algorithm. This makes **AURORA<sup>xmp</sup>** ideal for determining the economic value of each unit over time.

**AURORA<sup>xmp</sup>** is the only model that chooses from new resource alternatives based on the real-levelized NPV of hourly market values.

**AURORA<sup>xmp</sup>** compares those values to existing resources in an iterative process to optimize the set of new units.

### Features

- Marginal prices calculated for each hour by market zone
- Supply stack generated for each market zone
- Simultaneous whole system dispatch
- Fast, proprietary dispatch algorithms
- Forward-looking market valuation
- Unlimited definition of supply alternatives, including vintage technologies
- Constraints for rate of construction and retirements
- Captures the effects of emissions on plant operations and costs

### Benefits

- Optimizes expansion capacity across all zones
- Easy to construct new zones or consolidate multiple zones
- Provides greater understanding of resource options under various conditions
- Solves interdependencies between prices and changes in resource schedules
- Quickly determines the optimal expansion plan for an entire system
- Factors in price-induced curtailments