

NERA Will Develop Net Energy and AS Revenue Estimates Using Statistical Model



- The Model is referred to as a Volatility Model
- Model will be implemented for NYC, LI and ROS
- Model will be used to solve for distribution of hourly prices when installed capacity in all areas is at target level for NYISO control area
- Model will implicitly account for weather and fuel and uncertainty

Assumptions of Volatility Model



- Access to relevant price data and input data
 - By Zone, Hourly, for at least Three Years
 - Demand
 - Weather variables
 - Fuel Prices
 - Outage Data (?)
 - Capacity Data

Forecasting Assumptions



- Mean Demand Growth Assumptions, by Zone
- Incremental Known Construction
 - Generating Units
 - Important Transmission Projects

Basic Volatility Methodology



- $P_{zonei} = f(\text{Load}_i, \text{TotalLoad}, \text{Supply Shifters}, \text{Fuel Prices}) + \varepsilon$
 - Supply shifters include day of week, hour of day, season and weather and various interactions
- $\text{Load}_i = g(\text{PreviousLoads}, \text{Weather}, \text{Long Term Trends}) + \delta$
- ε, δ not assumed to be normally distributed but are taken from historic variability
- Monte Carlo simulated future paths are used to generate price volatility and expectations

Assumptions of Volatility Model



- Previous three years of NYISO history reflect a sufficiently wide range of future conditions
 - Weather Shocks
 - Hot and Cold Spells
 - Prolonged Conditions
 - Hot weather both increases demand and reduces plant output
 - Outage Shocks
 - Transmission
 - Unit Outages
 - Generalized conditions in which reserve margins were low relative to installed reserve margins