A Comprehensive Seminar on

Energy Price Forecasting using Fundamental Market Simulation Models

October 10-11, 2005

Holiday Inn Brownstone Hotel and Conference Center
Raleigh, North Carolina
ENERGY PRICE FORECASTING USING FUNDAMENTAL MARKET SIMULATION MODELS

OVERVIEW
An accurate forecast of energy and ancillary service prices is absolutely essential for the market participants to make informed decisions in a complex market. This two-day course is designed to help electricity market participants learn the basics of fundamental market simulation so that the discussed concepts and techniques can be readily applied in their planning and operational activities. This course will use case studies extensively to demonstrate the application of fundamental models in market analysis studies.

WHO SHOULD ATTEND THIS COURSE?
Resource Planners interested in forecasting the operation of generation resources; Generator Operators who assess profits and losses due to market price changes; Traders who wish to capitalize on arbitrage opportunities available in a market; Risk Managers interested in developing hedging strategies for their portfolio; Policy Makers and Regulators who wish to understand the fundamentals of price forecasting, transmission constraints, and congestion mitigation; Engineers and Consultants involved in provided services related to the energy and ancillary services market; Investment Bankers interested in asset valuation in deregulated markets, and Anyone interested in the subject of forecasting LMPs.

PROGRAM AGENDA
Monday, October 10, 2005
Course timing: 8:30 a.m. – 4:30 p.m.
Overview of Electricity Markets
- A brief history of deregulated markets in the US
- The new players in the deregulated market
- Role of the Independent System Operator in operating the market and the power system
- Products sold in the electricity market
  - Energy
  - Capacity
  - Ancillary Services
- Mechanics of the two-settlement system for clearing energy and ancillary services markets
- Forward (financial) and Real-time (physical) markets for electricity
- Bidding and settlement in the market
- Basic components in generation bidding –three-part offer with incremental costs, physical limitations, etc.
- The use of bilateral transactions for energy
- Hedging instruments available in the electricity market: TCCs/FTRs, virtual bids etc.
- A brief comparison of the different ISOs in the U.S.

Group Luncheon: 12:00 p.m. – 1:00 p.m.
Understanding the Arithmetic behind LMPs
- Why LMP?
- The arithmetic behind LMP calculation
- Three-bus example for illustrating the relationship between spot price, shadow price, congestion cost and production cost
- Using the Five-bus system to understand bidding and settlement with generator bids, load bids, bilateral contracts, and FTRs/TCCs

Tuesday, October 11, 2005
Course timing: 8:30 a.m. – 4:30 p.m.
Major Elements of Fundamental Market Simulation
- Requirements for long-term (planning) and short-term (operations) simulations
- What are SCUC and SCED?
- Generator bidding with portfolio optimization (Nash, Cournot, etc.)
- Capturing the volatility due to generator and transmission outages
- Operation of hydro, pumped storage and wind resources
- Effects of the transmission and generation maintenance
- Impact of marginal losses on dispatch and prices
- Modeling financial and physical transactions in the simulation
- When does fundamental modeling work? When does it not?
- Pros and Cons of the various modeling techniques
- Garbage-in-Garbage-Out: Why accurate transmission and generation data is important for fundamental analysis?
- How to obtain and manage market simulation data?

Group Luncheon: 12:00 p.m. – 1:00 p.m.
Energy Price Forecasting using Fundamental Models
- Case studies with fundamental models
  - Performing accurate asset valuations using a fundamental model
  - Short-term forecasting for supporting the trading floor
  - Analyzing the revenue impact due to major changes in the system
  - Planning the transmission system to reduce congestion
  - Evaluating FTR/TCC contracts
ABOUT THE INSTRUCTORS

Henry Chao is Vice President of Transmission at ABB Electric Systems Consulting. He is an electrical and operations research engineer with 20 years of experience in all aspects of electric utility planning and operations. Dr. Chao obtained his Ph.D. from The Georgia Institute of Technology, Atlanta. At ABB Consulting his main responsibility is to direct development and consulting using advanced models and technologies. These models and technologies are designed to analyze bulk power markets, relieve transmission congestion, and foster improved understanding of the competitive forces underlying the changes in the electric power sector. His areas of activities include generation and transmission asset valuation and optimal utilization, transmission reliability assessment, commercial project development, and competitive power marketing and risk management. He is frequently invited to speak about asset value enhancement and technology applications at industry and professional organizations. Prior to joining ABB, he also developed and worked on two industry standard reliability assessment packages for utilities. His customer base includes utilities, developers, financial institutions, and industrial clients.

Sundar Venkataraman is the Manager of the Energy Market Consulting practice at ABB Electric Systems Consulting. Mr. Venkataraman has a Master’s degree in Electrical Engineering from Iowa State University and is currently working towards his M.B.A. He has over 10 years of experience in consulting related to electricity markets, utility economics, power systems operation, and power plant engineering. At ABB, Mr. Venkataraman’s responsibilities include managing a consulting practice that provides services using ABB’s GridView market simulation software to help market participants in the planning and operation of generation and transmission assets. Prior to joining ABB, Mr. Venkataraman worked for GE Power Systems Energy Consulting in various capacities. He has authored several papers and taught courses on production simulation, energy price forecasting and power plant controls.

Registration Information

Course fee: The fee for this course is $1400 per person. Early Bird special before September 20, 2005: $1200. Meals, transportation, and lodging for students are not included.

Conference Location: The conference will be held at the Holiday Inn Brownstone Hotel and Conference Center, 1707 Hillsborough Street, Raleigh, NC 27605. A room block has been reserved at this hotel for the nights of October 9-11, 2005 for a rate of $89, plus applicable taxes. Please call the Holiday Inn Brownstone Hotel at (919) 828 0811 to make your reservations and mention “ABB Energy Price Forecasting” to get the group rate. Please make your reservations prior to September 26, 2005. Reservations after this date will be based on the availability of rooms and cannot be guaranteed.

Registration:
For registration, please contact:

ABB University  http://natraining.abb.com
ABB University registration center: 1-800-HELP-365 (option 2, then 4)

Cancellation Policy: The course is subject to cancellation in the event that fewer than 10 participants sign up for the course two weeks before the course start date. In this case, 100% of any payments for the course will be refunded. ABB Inc. is not responsible for any cancellation charges incurred by course attendees from airlines, hotels, or travel agency fees.

ABB shall not be liable for special, incidental or consequential damages. Except to the extent that liability may not be so excluded under applicable Law, ABB’s total cumulative liability to the student for the course shall not exceed the price of the service provided.