



Università di Bologna

AVVISO DI SEMINARIO

“IMPACT OF RENEWABLE ENERGY ON RESTRUCTURED ELECTRIC POWER SYSTEMS”

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The presentation consists of two 45-minute talks. The abstract of each talk is given as follows:

IMPACT OF RENEWABLE ENERGY ON ELECTRICITY RESTRUCTURING: The electric power system operation is rapidly becoming market-driven in which generation, transmission, and distribution companies strive to maximize their respective revenues in a highly competitive environment. This presentation reviews the impact of renewable energy on power system restructuring and the essence of competition in the operation and the planning of electric power systems. The presentation elaborates on the impact of renewable generation on the security and economics of restructured power systems.

COST OF RELIABILITY IN POWER SYSTEMS – A STOCHASTIC PROGRAMMING APPROACH: This presentation discusses a model for calculating the cost of power system reliability based on the stochastic optimization of long-term security-constrained unit commitment (SCUC). Random outages of generating units and transmission lines, load forecast errors, and water and gas resource availability are modeled as scenario trees in the Monte Carlo simulation. The presentation considers uncertainties when calculating the optimal reserve in the generation unit commitment solution and provides a tradeoff between minimizing operating costs and satisfying power system reliability requirements.



Dr. Mohammad Shahidehpour is Carl Bodine Distinguished Professor and Chairman in the Electrical and Computer Engineering Department at Illinois Institute of Technology. He is the author of 350 technical papers and five books on electric power systems planning, operation, and control. Dr. Shahidehpour is the VP for Publications of the IEEE Power and Energy Society and the Editor-in-Chief of the IEEE Transactions on Smart Grid. He is the recipient of 2009 Honorary Doctorate form the Polytechnic University of Bucharest, 2008 IEEE/PES Best Transaction Paper Award, and 2007 IEEE Burke Faculty Recognition Award. As an IEEE Distinguished Lecturer, Dr. Shahidehpour has lectured across the globe on electricity restructuring issues. He is an Honorary Professor at the North China Electric Power University in Beijing and Sharif University of Technology in Tehran. 350 technical papers and five books on electric power systems planning, operation, and control. Dr. Shahidehpour is the VP for Publications of the IEEE Power and Energy Society and the Editor-in-Chief of the IEEE Transactions on Smart Grid. He is the recipient of 2009 Honorary Doctorate form the Polytechnic University of Bucharest, 2008 IEEE/PES Best Transaction Paper Award, and 2007 IEEE Burke Faculty Recognition Award. As an IEEE Distinguished Lecturer, Dr. Shahidehpour has lectured across the globe on electricity restructuring issues. He is an Honorary Professor at the North China Electric Power University in Beijing and Sharif University of Technology in Tehran.