Wenxiong Huang, Ph.D.
Vice President, Operations

Plexos Solutions
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Summary

Dr. Huang has more than 20 years experience in developing leading-edge simulation/optimization software and providing associated consulting and implementation services in electric energy industry.

Expertise includes:

- Creation, implementation, and enhancement of large-scale, simulation-ready, regional databases.
- Stochastic and scenario-driven risk analyses
- Marginal and market price fundamental formation
- Scheduled maintenance optimization
- Advanced unit commitment and dispatch
- Risk management trading algorithms and models
- Advanced decomposition techniques for least-cost resource planning

Employment History

2006 - Present ***Vice President of Operations, PLEXOS Solutions LLC***

Dr. Huang is responsible for consulting services, marketing, and finance. He is also actively involved in product support and implementation.

1994 - 2006 ***Senior Consultant/Senior Project Manager/Product Manager/Director of Engineering/Product Line Manager Global Energy Decisions (Henwood Energy Services, Inc.)***

- As the Product Manager for Analytics product line that covers Market Analytics and Planning and Risk solutions, Dr. Huang worked with sales and clients to develop and write Market Requirement Documentations, worked with Engineering team to develop detailed functional specifications, and coordinated with Quality Assurance team to develop test plans.
- As the Director of Engineering, Dr. Huang led the development of all simulation related products, including MARKETSYM (electric market simulation system), RISKSYM (portfolio planning and asset evaluation) MAINSYM

(maintenance scheduling and optimization, and OPSYM (short-term operational planning).
- As the Product Manager for EMSS/MARKETSYM, Dr. Huang's responsibilities included management of product profit & loss, market requirements assessment, business development, and customer services.
- Developed and managed the development of EMSS (Electric Market Simulation System). EMSS is a sophisticated database management system used in conjunction with the advanced chronological simulation tool PROSYM to simulate the operation of a power system.
- Rewrote the risk management module of the ETRM (Electric Trading Risk Management) system. ETRM was used by power brokers and electric utilities to evaluate contract trading and perform risk management.
- Participated in various consulting projects to forecast electric market clearing prices for the WECC (Western Electricity Coordinating Council) and the United Kingdom power pool using EMSS and PROSYM.

1992 – 1994 ***Consultant/Senior Consultant***
Energy Management Associates, The Utilities Division of EDS

- Participated in a project for Southern California Edison to establish a 20-year base-line projection for the bulk power markets within the western states region using PMDAM v17
- Managed the development of Version 17 of PMDAM™ (Power Market Decision Analysis Model) so that it can be run on PC, DEC Alpha, and RS6000 and produce reasonable results.
- Designed and developed ECVIEW™ module, a new component of PROSCREEN II® system. ECVIEW was designed to help utilities in their emissions compliance planning process. ECVIEW can also quickly sort through various supply-side resource alternatives and develop a least cost resource plan. Using sophisticated decomposition technique, ECVIEW derives a least cost solution in a fraction of time that PROVIEW™ would take to solve the same problem.
- Improved PROSCREEN II® system using various optimization techniques (Linear Programming, Dynamic Programming, and Generalized Benders Decomposition)

1991	***Consultant*** ***Case Western Reserve University*** • Evaluated Natural gas co-firing and emissions dispatching as emissions control options for coal-fired power plants. The project was funded by Gas Research Institute, Chicago, IL, 1991. • Analyzed the effect on electric utilities of under utilization regulations under Section 408(c) of the Clean Air Act Amendments of 1990. The project was funded by the Utility Air Regulatory Group (UARG) and presented at the Acid Rain Advisory Committee Meeting by the Ohio Office of Consumer Counsel, Columbus, OH, 1991.
Education	MBA, Finance and Marketing, March, 2006 University of California, Davis, CA Ph. D. in Systems Engineering, May, 1992 Case Western Reserve University, Cleveland, OH Dissertation: *Optimization of Emission Controls for Electric Utilities Using Probabilistic Production Costing and Generalized Benders Decomposition* M. S. in Systems Engineering, January, 1990 Case Western Reserve University, Cleveland, OH Thesis: *Solving the Redundancy Allocation Problem by the Frequency and Duration Method and Nonlinear Integer Programming* B. S. in Applied Mathematics, May, 1985 Xiamen University, Xiamen, China
Professional and Honorary Associations	Member of Beta Gamma Sigma, Business Honor Society Member of IEEE
Publications and Presentation	W. Huang and B. F. Hobbs, "Optimal SO_2 Compliance Planning Using Probabilistic Production Costing and Generalized Benders Decomposition," *IEEE Transactions on Power System*, Vol. 9, No. 1, pp. 174-180, February 1994.

	W. Huang and B. F. Hobbs, "Estimation of Marginal System Costs and Emissions of Changes in Generating Unit Characteristics," *IEEE Transactions on Power System*, Vol. 7, No. 3, pp. 1251-1258, August 1992. B. F. Hobbs, J. S. Heslin, and W. Huang, "Screening Emissions Control Measures,", in B. F. Hobbs, ed. *Energy in the 90's*, American Society of Civil Engineers, NY, pp. 185-190, 1991. B. F. Hobbs, W. Huang, and S. K. Nelson, "A Production Costing Analysis of Under utilization Accounting Policies," Report, Prepared for the Ohio Office of Consumer Counsel and the Utility Air Regulatory Group, April 1991.