

**The Essential Role for Energy Systems Analysis in a Dynamic Environment: The Many Opportunities for the State Utility Forecasting Group and Purdue University to Serve Indiana and Beyond**

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Economic development and a high standard of living are strongly correlated to energy usage. Rapid economic development around the world promises to lift populations out of poverty, but will result in a substantial increase in energy usage. As a result the next few decades will be a time of rapid change in energy production, distribution, and consumption. Recent events such as Hurricane Katrina and many political incidents clearly illustrate the complexity and intertwined nature of the Indiana Energy System (IES), U. S. National Energy System (NES), and Worldwide Energy System (WES). Because of the many interactions and high economic stakes there is tremendous potential value in further developing a systems based approach to understanding the current state, possible future states, and the research, development, and investment path for moving from today's energy system to the future based on a market driven, detailed, technically sound, and comprehensive perspective. The Indiana State Utility Forecasting Group (SUFG) provides especially valuable insight and capability in developing that perspective because of its long standing contributions to the modeling and analysis of IES and regional energy environments around the world. Discovery Park offers new opportunities for realizing synergy among SUFG, deep Purdue expertise in energy policy, research in many areas related to alternative energy sources, and integrated consideration of the environment and energy system. The Regenstrief Center for Healthcare Engineering (RCHE) provides a template for balancing a mix of education, research, and engagement activities and developing a campus wide approach to applying systems analysis to a complex societal challenge. Close SUFG interaction with both the Energy Center and e-Enterprise Center will greatly increase the mutual learning and cross-fertilization among large scale system analysis efforts on campus. The new opportunities available to SUFG will complement its traditional and primary role of providing electricity forecasting and energy analysis to the IURC and allow SUFG to influence and be influenced by many members of the Purdue academic community.