HISTORY AND FUNCTIONS OF THE STATE UTILITY FORECASTING GROUP

Presented by:
Douglas J. Gotham
State Utility Forecasting Group
Energy Center
Purdue University

Presented to:
Institute of Public Utilities
6th Commission Executive Management Forum

October 7, 2008

State Utility Forecasting Group

- Executive Order 3-84, which was issued in January 1984 by Indiana's Governor Robert D. Orr, created a special committee designated to address Indiana's utility future. In December 1984, that committee produced a report providing options and specific recommendations.
- The committee recommended four alternatives models for a forecasting system
  - utilities produce their own forecasts independently
  - utilities work together to produce forecasts as a group
  - the Utility Regulatory Commission produces the forecasts
  - another public or quasi-public entity produces the forecasts
- The 4th option was chosen and Purdue was chosen to house the Indiana State Utility Forecasting Group.

Indiana Code 8-1 TO 8-5 (Amended in 1985)

"The commission shall establish a permanent forecasting group to be located at a state-supported college or university within Indiana … This group shall develop and keep current a methodology for forecasting the probable future growth of electricity within Indiana and within this region of the nation."

History of SUFG

- Marble Hill and Bailly – early 1980s
- Public Law 85.5 – 1985
- SUFG forecasts – 1987, 1988, 1990, 1993, 1994, 1996, 1999, 2001, 2003, 2005, 2007
- Regulatory and legislative testimony
- Air emissions studies – 1989, 2000, 2001, 2006, 2008
- Demand-side management – since early 1990s
- Electricity deregulation – 1996-2001
- Annual renewable resources studies – 2003-present
- Natural gas modeling – 2003-present
- Involvement with RTO/FERC issues

Statewide Electricity Projections

- Long-term (20 year) statewide projections
  - Electricity requirements
  - Peak demand
  - Retail prices
  - Resource needs
  - Sectoral (residential, commercial, industrial) detail

Air Emissions Regulations

- 1990 Clean Air Act controls on SO2 and NOx emissions expected to cost Indiana electricity utilities 1.0-1.5 billion dollars and lead to rate increases of 10-15 percent to recover cost of compliance.
- Additional restrictions on NOx emissions that began in 2004 expected to lead to rate increases of 6 to 8 percent.
- Restrictions on SO2, NOx, and mercury associated with CAIR/CAMR expected to lead to rate increases of 7 to 15 percent.
- Proposed CO2 restrictions (Lieberman-Warner) could raise electricity rates by 45 percent by 2025.

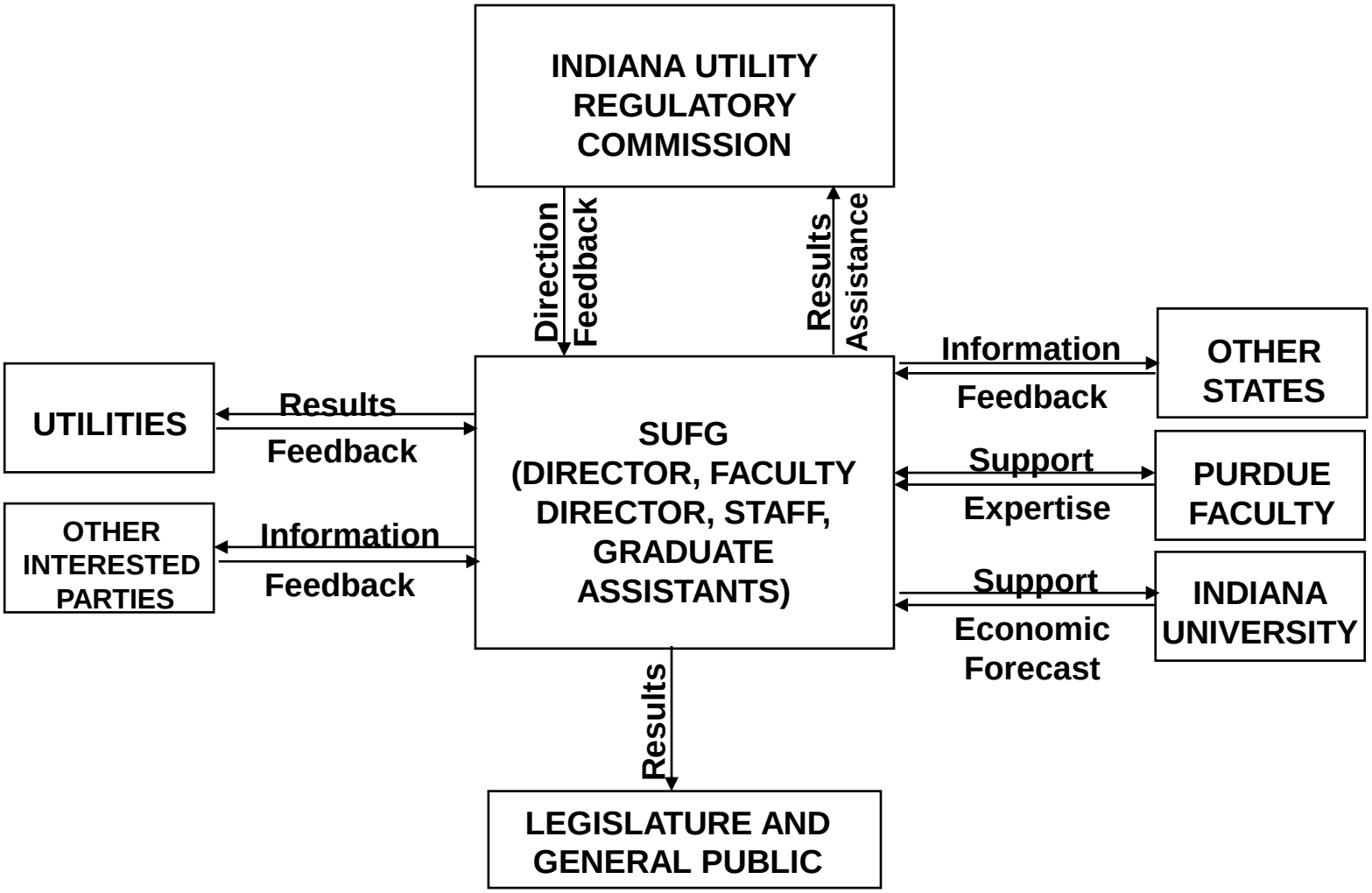
Demand-Side Management

- Cautioned against impact of one class of ratepayers subsidizing another
  - Programs that benefit society should be encouraged with compensation structured such that both participants and non-participants benefit or at least are unharmed.
- Member of utility conservation program oversight board

Other Studies

- Deregulation
  - Deregulation would decrease Indiana electricity prices in the short run, but increase them in the long run because of increased exports to more expensive jurisdictions and because of higher cost of capital with riskier investments. If suppliers could exercise market power, prices would rise further.
- Natural gas
  - Construction of new natural gas-fired electricity generators were not expected to increase overall demand enough to result in an inability of the natural gas system to deliver its product, but could result in increased costs.

Interactions with other Entities



SUFG Structure

- Director, staff, and students at Purdue University
- Under contract with Indiana Utility Regulatory Commission (IURC)
- Subcontract with Indiana University:
  - Economic forecasts
  - Special topic studies
- Access to faculty expertise through Energy Center
- Feedback from utilities and other interested parties

Relationship with IURC

- Cooperative
  - SUFG takes direction from the Commission as to what topics need to be addressed
  - The Commission provides feedback and constructive criticism to SUFG
- Independent
  - While SUFG works under contract with the Commission, it is part of the university
  - SUFG has developed working relationships with the utilities that are separate from the regulator-utility relationship
  - SUFG is responsible for the quality of its models and reports

Relationship with Utilities and Other Interested Parties

- Cooperative
  - SUFG operates under a “no surprises” policy
  - Access to sensitive data
  - Constructive feedback
- Independent
  - SUFG has no financial connection to any of the parties
  - Independence is crucial to SUFG’s credibility

Education

- Workshops, short courses, and tutorials
  - For IURC
    - SUFG's models
    - Electric power systems
    - Risk management
  - Regional interest
    - Market power workshop
- Presentations to the legislature and general public
- Graduate student support

Graduate Research Assistants

- In its history, SUFG has supported a number of graduate students
  - 20 Ph.D. dissertations
  - 18 M.S. theses
- Typically, between 3 and 6 GRAs at any given time

Recent Publications

- *2008 Indiana Renewable Energy Resources Study* September 2008
- *The Projected Impacts of Carbon Dioxide Emissions Reduction Legislation on Electricity Prices in Indiana* February 2008 (with Purdue Climate Change Research Center)
- *Indiana Electricity Projections: The 2007 Forecast* December 2007
- *2007 Indiana Renewable Energy Resources Study* September 2007
- *Clean Coal Technologies* July 2007
- *Energy Trends Report* July 2007