

Mary Klos

Klos Energy Consulting

W404 County Road K ❖ Brillion, WI, 54110
920-864-2150 ❖ mary.klos@klosenergy.com

Ms. Klos offers consulting services to the electric and gas utility industry, specializing in Big Data Analysis of customer data, as well as Energy Efficiency, Demand Response and Dynamic Pricing planning and evaluation. Klos Energy Consulting is a purposely small shop with extensive experience, ensuring high quality work based on care and attention to each client's unique needs.

QUALIFICATIONS

- Over thirty years experience in the electric and gas utility industry.
- Seven years experience in energy services consulting.
- Proven leader with strong organizational, analytical and communication skills.
- Effective author and presenter with experience testifying in the regulatory arena.

Integrated Resource Planning

- Analyzed twenty years of Residential customer billing data to develop a model which explained changing growth rates. Identified changes in electric and gas usage due to new enduses, energy efficiency improvements and economic conditions specifically for the Wisconsin Public Service Corporation service territory. (2011)
- Created long-term hourly forecast of Demand-side Management Plan impacts for Tucson Electric Power and Unutil for the Arizona Integrated Resource Planning process. (2010)
- Led data-mining analysis of energy efficiency market penetration for the Small Commercial and Industrial customer sector at MidAmerican Energy. (2007)
- Worked with Wisconsin Public Service Corporation (WPSC) generation planners on incorporation of Demand-side Management Plans into Integrated Resource Planning model (EGEAS). Used net present value of revenue requirements to collaborate on optimization of plan. (2004)
- Managed WPSC Home Energy Survey to collect saturation rates and other planning inputs from a statistically valid sample of Residential customers. Combined incentives, multiple mailings and follow-up phone calls to achieve a 70% response rate and minimize sample bias. (2003 to 2004)
- Pioneered data-mining techniques at WPSC to estimate cost-of-service for different customer segments based on combination of survey data with hourly meter data and market prices. (2003)
- Developed best new product options for WPSC Small Business Customer strategic marketing plan using conjoint analysis. (2001)

- Worked with WPSC, regulators and intervenors to develop the innovative Solarwise for Schools program which was recognized by the Department of Energy's National Renewable Energy Laboratory (NREL) as one of the best programs in the country for developing use of renewable energy. (1994)
- Utilized experience with rate design, energy markets and customer energy use as Market Planning Administrator for WPSC. Developed new demand-side programs that would benefit both the utility and customers. Led a team of six professionals tasked with strategic market planning, new program and product development, department-wide budgeting, sales tracking systems, technical product research, competitive intelligence and quality improvement processes. This included monthly regulatory reporting on the net benefits of all existing demand-side management programs, as well as evaluation of net benefits for planned programs. (1992 to 1994)
- Prepared and presented testimony on load forecasts in rate hearings and integrated resource planning hearings. (1990 to 1994)
- Chaired the Wisconsin Load Forecast Task Force during Advance Plan proceedings. Led a group of utilities, regulators and intervenors in the collaborative development of statewide standards for reporting peak and energy forecasts, naturally-occurring conservation, and demand-side management impacts. (1985 to 1992)
- Served as a Load Forecast Analyst and later as Load Forecast Supervisor within the Rates department at WPSC. Responsible for creating electric and gas forecasting models and contributing to the Integrated Resource Planning process. The work included creation and collection of extensive detail on customer end-use activities, modeling of naturally-occurring and program-induced demand-side management impacts, and probability-based risk analysis. Worked with generation planners using ProSim and EGEAS. (1982 to 1992)

Net Benefits Evaluation

- Compared Energy Efficiency net benefits model to Dynamic Pricing net benefits model for Ameren-Illinois' Demand-side Management portfolio evaluation and presented results to Illinois Stakeholder Advisory Group (SAG). (2011)
- Reviewed DSMore inputs and outputs to verify net benefit calculations for all programs in Commonwealth Edison's Energy Efficiency portfolio. (2010)
- Prepared program design recommendations and completed net benefits tests for a statewide Residential Direct Load Control program in New Jersey. In addition to developing a net benefits calculator in Excel, DSMore software was used to make a probabilistic assessment of future market prices for electricity based on the known variability of weather in the region. (2007)
- Initiated and presented analytical information to successfully complete a collaborative ordered by the Public Service Commission of Wisconsin between WPSC and intervenors regarding the value of avoided costs in Demand Response programs. Supplied customer segment hourly load curves to public intervenor for use in DSMore model. (2005)

Energy Efficiency Evaluation

- Managed multi-faceted impact and process evaluation of Commonwealth Edison's Community Energy Challenge pilot. (2010 to 2011)

- Prepared first independent third-party review of Opower's comparative neighbor energy use reports. (2009) http://opower.com/uploads/library/file/13/summit_blue_june_2009.pdf
- Contributed impact analysis to evaluation of Bonneville Power Authority's EnergySmart Grocer's Program. (2009)
- Estimated impacts of Small Business Services energy efficiency programs for a consortium of five Massachusetts utilities. Billing analysis was done using a fixed effects statistically-adjusted engineering model and a joint report was prepared to meet the needs of all the clients and external parties interested in the results of the study. (2009)
- Measured savings for National Grid's Residential Gas Weatherization program. (2009)
- Managed multi-sector energy efficiency portfolio evaluation for Wisconsin Public Power, Incorporated, a cooperative for over twenty municipal utilities in the Midwest. The evaluations included free-ridership estimation. (2009)
- Used billing analysis to evaluate impacts from City of Palo Alto Utility's Residential Gas Rebate program. (2009)
- Led impact evaluations of Residential In-home Energy Displays and Compact Fluorescent Light Buydown pilots for Progress Energy-Carolinas. (2008 to 2009)
- Performed impact evaluation for Kansas City Power & Light's Low Income Weatherization program. (2008)
- Developed statistical method to quantify impacts of energy efficiency recommendations given to participants in Northwestern Energy's Home Energy Audit program. (2008)
- Performed impact evaluation of Residential Low Income Rebate program at Wisconsin Public Service Corporation. (2003 to 2004)
- Helped develop community-based Energy Efficiency pilot for WPSC. One community, the city of Merrill in Wisconsin, was chosen as the focus of this pilot. Community leaders were supported in the development of their own incentive structure to promote energy efficiency in their city. (1993)

Demand Response Evaluation

- Led many impact and process evaluations for Direct Load Control programs in Wisconsin, North Carolina, Texas, Missouri, Kansas, Pennsylvania, Maryland, New Jersey and Delaware. (2004 through 2011)
- Evaluated annual impacts from the Large Customer MPower Curtailment Program for Kansas City Power and Light for three years. (2009 to 2011)
- Performed data-mining and statistical analysis for performance investigation into California's Self-Generation Incentive Program for combined heat and power facilities. (2010)
- Contributed to development and application of innovative method for evaluating impacts from a Voltage Reduction Program for Philadelphia Electric Company (PECO). (2010)

- Managed evaluation of Puget Sound Energy's Commercial and Industrial Demand Response Pilot which included both impact and process evaluation of two seasons of load curtailment – summer and winter – since PSE is a winter-peaking utility. (2009-2010)
- Provided analytical support for the California Public Utilities Commission proceeding R.07-01-041 to develop protocols for demand response load impact evaluation. This included thorough review of all documents related to the development of the protocols that were filed by the utilities and other parties, preparing summaries of issues and differences between parties, and helping prepare staff reports. (2007)
- Had previous Direct Load Control program evaluation work cited in a California regulatory proceeding as being one of a set of “good examples of the application of various evaluation methods.”¹ for demand response programs. (2007)

Dynamic Pricing Evaluation

- Estimated impacts for on-going Residential dynamic pricing programs compared to iCanConserve controlled experiment results for a variety of Time of Use and Critical Peak rates offered by Wisconsin Public Service Corporation. (2012)
- Estimated impacts for on-going Small Business Critical Peak rate, Response Rewards, for Wisconsin Public Service Corporation. (2012)
- Project leader for evaluation of Ameren-Illinois Power Smart Pricing program, a real-time pricing program for Residential customers. Included impact analysis, net benefits evaluation and presentation of testimony. Three annual reports were filed with the Illinois Commerce Commission and results were presented at annual public meetings. (2008 to 2011)
<http://www.icc.illinois.gov/downloads/public/edocket/292827.pdf>
<http://www.icc.illinois.gov/downloads/public/edocket/292828.pdf>
<http://www.icc.illinois.gov/downloads/public/edocket/292829.pdf>
- Prepared benefit-cost analysis for Commonwealth Edison Residential Real-Time Pricing rate. (2010 to 2011) <http://www.icc.illinois.gov/downloads/public/edocket/296671.pdf>
- <http://www.icc.illinois.gov/downloads/public/edocket/296673.pdf>
- Analyzed impacts of Time-of-Use and Critical Peak Pricing rates, both with and without programmable thermostats, for Public Service Electric and Gas' myPower residential Demand Response pilot in New Jersey. (2006 to 2007)
http://www.energetics.com/madri/toolbox/pdfs/pricing/mypower_pricing_final_report_2007.pdf
- Provided load and market analysis for development of Response Rewards Critical Peak Pricing rates for commercial and industrial customers at WPSC. (2004)
http://psc.wi.gov/apps/erf_share/view/viewdoc.aspx?docid=46002
- Managed WPSC pilot to evaluate residential Critical Peak Pricing rates in combination with two-way communicating thermostats and color-changing orbs as price period indicators. (2003)

¹Joint IOU Straw Proposal on Load Impact Estimation for Demand Response, Appendix A, submitted by Pacific Gas & Electric Co., Southern California Edison Co., and San Diego Gas & Electric Co., July 16, 2007, Before the Public Utilities Commission of the State of California, Rulemaking 07-01-041. http://www.calmac.org/events/FinalDecision_AttachmentA.pdf

PUBLICATIONS

- “Why Real-Time Pricing is Better than Other Dynamic Pricing Rates”**
Association of Energy Services Professionals (AESP) National Conference January 2013
- “Using Social Nudges to Reduce Energy Demand: Evidence for the Long Term”**
Behavior, Energy and Climate Change (BECC) Conference November 2010
- “Residential Energy Demand in a Real Time Pricing Program”**
Behavior, Energy and Climate Change (BECC) Conference November 2010
- “Free Ridership: Arbitrary Algorithms vs. Consistent Calculations”**
International Energy Program Evaluator’s Conference (IEPEC) August 2008
- “Communicating Thermostats for Residential Time-of-Use Rates: They Do Make a Difference”**
American Council for an Energy-Efficient Economy (ACEEE) Summer Study August 2008
- “Switches vs. Stats: Who Wants What? A Comparison of Load Control Switches and Web-enabled Programmable Thermostats”**
Association of Energy Services Professionals (AESP) Annual Conference February 2007

INVITED PRESENTATIONS

- Behavior, Energy & Climate Change Conference**
“Creating Habits that Last with Real-Time Pricing” November 2012
- Illinois Smart Grid Collaborative Working Group**
“Valuation Methods for Power Smart Pricing” April 2010
- Association of Energy Services Professionals (AESP) Brown Bag Seminar**
“A Regional Look at Residential DLC Impacts” February 2008

EDUCATION

- University of Wisconsin**
Masters in Business Administration (MBA) 1986
- Beloit College**
Bachelor of Arts in Economics (BA) 1980

CERTIFICATIONS

Statistical Analysis System (SAS)

Certified Base Programmer

EMPLOYMENT HISTORY

Klos Energy Consulting

Principal

Brillion, WI

2011 to present

Navigant

Associate Director

Madison, WI

2010 to 2011

Summit Blue Consulting

Senior Consultant

Madison, WI

2006 to 2009

Wisconsin Public Service Corporation

Customer Research Analyst and Data Consultant

Interim Market Research Administrator

DSM Evaluation Consultant

Marketing Planning Administrator

Load Forecast Supervisor

Load Forecast Analyst

Green Bay, WI

2001 to 2006

1999

1997 to 2000

1992 to 1994

1990 to 1992

1982 to 1990

Abalux Computers

Co-proprietor

Brillion, WI

1994 to 2000

Wisconsin Power and Light

Rate Analyst

Madison, WI

1980 to 1981

References available upon request.