Electricity Markets and Policy Group

Energy Analysis & Environmental Impacts Division

Lawrence Berkeley National Laboratory

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E-mail: pacappers@lbl.gov **PETER A. CAPPERS, M.S.**

O: (315) 637-0513, C: (315) 663-5434 Lawrence Berkeley National Laboratory (LBNL)

EDUCATION

**M.S. in Applied Economics, Cornell University. January 2005.**

**B.A. in Mathematics and Economics, Syracuse University. May 1997.**

RESEARCH AND WORK EXPERIENCE

**Research Scientist & Group Leadership Team February 2014 to Present**

Electricity Markets and Policy Group, Energy Analysis and Environmental Impacts Division, Lawrence Berkeley National Laboratory (LBNL)

***Technical analysis and project management***

* Lead technical assistance and evaluation efforts of ~11 SGIG grant recipients who agree to undertake a dynamic pricing and consumer behavior study with a controlled and randomized experimental design approach. Managing a team of ~15 subcontractors and 2 internal staff resources to perform such work.
* Lead conceptualization efforts to develop various future electric utility business models that address impacts of high penetrations of distributed generation resources, energy efficiency, etc.
* Contributed to quantitative analysis of changes to utility profit achievement and profit motivation in a future of increasing distributed energy resources, including modeling changes in utility stock prices
* Provide technical assistance on demand response and utility business model related issues to state and federal policy-makers.
* Contribute to overall management of the Electricity Markets and Policy Group.

**Principal Scientific Engineering Associate October 2010 to January 2014**

Electricity Markets and Policy Group, Energy Analysis Department, Lawrence Berkeley National Laboratory (LBNL)

***Technical analysis and project management***

* Lead technical assistance and evaluation efforts of ~11 SGIG grant recipients who agree to undertake a dynamic pricing and consumer behavior study with a controlled and randomized experimental design approach. Managing a team of ~15 subcontractors and 2 internal staff resources to perform such work.
* Technical modeling lead on projects that involve quantitative financial modeling of alternative shareholder and ratemaking mechanisms under the pursuit of more aggressive energy efficiency savings goals.
* Lead researcher and author for a scoping study to assess the capabilities of demand response to mitigate integration issues associated with large-scale implementation of variable generation technologies
* Provide technical assistance on demand response and utility business model related issues to state and federal policy-makers.

**Senior Scientific Engineering Associate July 2007 to September 2010**

Electricity Markets and Policy Group, Energy Analysis Department, Lawrence Berkeley National Laboratory (LBNL)

***Technical analysis and project management***

* Lead technical assistance and evaluation efforts of SGIG grant recipients who agree to undertake a dynamic pricing and consumer behavior study with a controlled and randomized experimental design approach.
* Technical modeling lead on projects that involve quantitative financial modeling of alternative shareholder and ratemaking mechanisms under the pursuit of more aggressive energy efficiency savings goals.
* Provide technical assistance on demand response and utility business model related issues to state and federal policy-makers.

**Director January 2001 to June 2007**

*Utili*Point International, Inc. / Neenan Associates

* Conducted research and policy analysis on demand response and dynamic pricing for both retail and wholesale clients in the United States and abroad.

**Market Analyst July 2000 to January 2001**

New York Independent System Operator

* Analyzed market data to maintain the existence of a “workably competitive” New York wholesale electricity market.

**Manager August 1997 – July 2000**

Billing Concepts / CommSoft, Inc.

* Developed software for telecommunications billing systems.

WORKING PAPERS, PUBLICATIONS, AND REPORTS

**Peer Reviewed Journals/ Peer Reviewed Conference Proceedings/Archival Journals**

***Peer reviewed journals (published) (18)***

Cappers, P., A. Satchwell, W. Gorman, and J. Reneses (2019). “Financial Impacts of Net-Metered Distributed PV on a Prototypical Western Utility’s Shareholders and Ratepayers.” *Energies* 12(24), 4794. https://doi.org/10.3390/en12244794.

Todd, A., P. Cappers, C. A. Spurlock, and J. Lin (2019). “Spillover as a cause of bias in baseline evaluation methods for demand response programs.” *Applied Energy* 250: 344-357. https://doi.org/10.1016/j.apenergy.2019.05.050

Kihm, S., P. Cappers, A. Satchwell, and E. Graffy. (2018) “Corporate Finance and Sustainability: The Case of the Electric Utility Industry.” *The Journal of Applied Corporate Finance* 30(1): 106-111. https://doi.org/10.1111/jacf.12283

Satchwell, A., P. Cappers, and C. Goldman (2018) “Customer Bill Impacts of Energy Efficiency and Net-Metered Photovoltaic System Investments.” *Utilities Policy* 50: 144-152. https://doi.org/10.1016/j.jup.2017.12.003

Satchwell, A., and P. Cappers (2018). “Recent Developments in Competition and Innovation for Regulated Electric Utilities.” *Utilities Policy* 55: 110-114. https://doi.org/10.1016/j.jup.2018.09.008

Cappers, P., A. Todd, C.A. Spurlock, and L. Jing. (2018) “Are Vulnerable Customers Any Different Than Their Peers When Exposed to Critical Peak Pricing: Evidence from the U.S.” *Energy Policy* 123: 421-432. https://doi.org/10.1016/j.enpol.2018.09.013

Hoen, B., J.P. Brown, T. Jackson, R. Wiser, M. Thayer, and P. Cappers (2015). “A Spatial Hedonic Analysis of the Effects of U.S. Wind Energy Facilities on Surrounding Property Values.” *Journal of Real Estate Finance and Economics* 51(1): 22-51.

Hoen, B., R. Wiser, M. Thayer, and P. Cappers. (2013). “Residential Photovoltaic Energy Systems in California: The Effect on Home Sales Prices.” *Contemporary Economic Policy* 31(4): 708-718.

Cappers, P., J. MacDonald, C. Goldman, O. Ma (2013) “An Assessment of Market and Policy Barriers for Demand Response Providing Ancillary Services in U.S. Electricity Markets.” *Energy Policy* 62: 1031-1039.

Ma, O., N. Alkadi, P. Cappers, P. Denholm, J. Dudley, S. Goli, M. Hummon, S. Kilicotte, J. MacDonald, N. Matson, D. Olsen, C. Rose, M. D. Sohn, M. Starke, B. Kirby, and M. O’Malley (2013) “Demand Response for Ancillary Services.” *IEEE Transactions on Smart Grid* 4(4): 1988-1995.

Cappers, P., A. Mills, C. Goldman, R. Wiser and J.H. Eto (2012). “An Assessment of the Role Mass Market Demand Response Could Play in Contributing to the Management of Variable Generation Integration Issues”. *Energy Policy* 48: 420-429.

Hoen, B., R. Wiser, M. Thayer, and P. Cappers (2012). “Do PV Systems Increase Residential Selling Prices? If So, How Can Practitioners Estimate This Increase.” *38th IEEE Photovoltaic Specialists Conference (PVSC)*.

Hoen, B., R. Wiser, P. Cappers, M. Thayer, and G. Sethi (2011). “Wind Energy Facilities and Residential Properties: The Effect of Proximity and View on Sales Prices”. *Journal of Real Estate Research* 33(3): 279-316.

Satchwell, A., P. Cappers, and C. Goldman (2011). “Carrots and Sticks: A Comprehensive Business Model for the Successful Achievement of Energy Efficiency Resource Standards”. *Utilities Policy* 19(4): 218-225.

Cappers, P., C. Goldman, and D. Kathan (2010). “Demand response in U.S. electricity markets: empirical evidence”. *Energy: The International Journal* 35(4): 1526-1535.

Cappers, P. and C. Goldman (2010). “Financial impact of energy efficiency under a federal combined efficiency and renewable electricity standard: Case study of a Kansas ‘super-utility’”. *Energy Policy* 38(8): 3998-4010.

Boisvert, R., P. Cappers, C. Goldman, B. Neenan, and N. Hooper (2007). “Customer response to RTP in competitive markets: A Study of Niagara Mohawk’s Standard Offer Tariff”. *Energy Journal* 28(1): 53-74.

Wiser, R., M. Bolinger, P. Cappers, and R. Margolis (2007). “Analyzing Historical Cost Trends in California’s Market for Customer-Sited Photovoltaics”. *Progress in Photovoltaics: Research and Applications* 15(1): 69-85.

***Peer reviewed journals (submitted to the journal - accepted)***

***Peer reviewed journals (submitted to the journal - under review)***

Fowlie, M., C. Wolfram, C.A. Spurlock, A. Todd, P. Baylis, and P. Cappers. “Default Effects and Follow-on Behavior: Evidence from an Electricity Pricing Program.” *Review of Economic Studies*.

Todd-Blick, A., C.A. Spurlock, L. Jin, P. Cappers, S. Borgeson, D. Fredman, and J. Zuboy. “Segmenting Households via Smart-Meter Data and Machine Learning to Improve the Cost-Effectiveness of Demand Response Programs.” *Energy Research and Social Science*.

***Peer reviewed conference papers (10)***

Kihm, S., P. Cappers and A. Satchwell (2016). “Considering Risk and Investor Value in Energy Efficiency Business Models.” Proceedings from the 2016 ACEEE Summer Study on Energy Efficiency in Buildings. American Council for an Energy Efficient Economy; Washington, D.C.

Baylis, P., P. Cappers, L. Jin, C.A. Spurlock, A. Todd (2016). “Go for the Silver? Evidence From Field Studies Quantifying the Difference in Evaluation Results Between ‘Gold Standard’ Randomized Control Trial Methods versus Quasi-Experimental Methods.” Proceedings from the 2016 ACEEE Summer Study on Energy Efficiency in Buildings. American Council for an Energy Efficient Economy; Washington, D.C.

Barbose, G., A. Satchwell, A. Mills, R. Wiser, P. Cappers, and N. Darghouth (2015). “The Impacts of Net Metering on Utility Profits and Rates: Case Studies of Two Prototypical Utilities.” 2015 IEEE 42nd Photovoltaic Specialists Conference (PVSC): New Orleans, LA.

MacDonald, J., P. Cappers, D. Calloway, S. Kiliccote. (2012). “Demand Response Providing Ancillary Services – A Comparison of Opportunities and Challenges.” Presented at Grid-Interop Forum 2012.

Hoen, B., P. Cappers, R. Wiser, and M. Thayer. (2011). “An Analysis of the Effects of Photovoltaic Energy Systems on Residential Selling Prices in California.” Presented at American Real Estate Society Annual Conference, Seattle, WA.

Hoen, B., R. Wiser, P. Cappers, and M. Thayer. (2011) “Do Photovoltaic Energy Systems Affect Residential Selling Prices? Results from a California Statewide Investigation.” Presented at SOLAR 2011, Raleigh, NC.

Satchwell, A., P. Cappers, and C. Goldman. (2011) “Carrots and Sticks: A Comprehensive Business Model for the Successful Achievement of Energy Efficiency Resource Standards.” Presented at European Council for an Energy Efficient Economy 2011 Summer Study, Giens, France.

Cappers, P., A. Satchwell, C. Goldman, and J. Schelgel (2010). “Benefits and Costs of Aggressive Energy Efficiency Programs and the Impacts of Alternative Sources of Funding: Case Study of Massachusetts”. Proceedings from the 2010 ACEEE Summer Study on Energy Efficiency in Buildings. American Council for an Energy Efficient Economy; Washington, D.C.

Cappers, P., and C. Goldman (2009). “Empirical Assessment of Shareholder Incentive Mechanisms Designs under Aggressive Savings Goals: Case Study of a Kansas ‘Super-Utility’” Proceedings from the 2009 International Energy Program Evaluation Conference. International Energy Program Evaluation Conference; Madison, WI.

Cappers, P., C. Goldman, M. Chait, G. Edgar, J. Schlegel, and W. Shirley (2008). “Quantitative Analysis of Alternative Energy Efficiency Shareholder Incentive Mechanisms”. Proceedings from the 2008 ACEEE Summer Study on Energy Efficiency in Buildings. American Council for an Energy Efficient Economy; Washington, D.C.

***Archival journals (expert review-no peer review) (7)***

Satchwell, A., P. Cappers, and G. Barbose (2020). “Current Developments in Retail Rate Design.” *IEEE Power and Energy Magazine – In My View*, Volume 18, Number 2, March/April 2020 (???).

Satchwell, A., and P. Cappers (2015). “A Framework for Organizing Electric Utility Regulatory and Business Models.” *The Electricity Journal*, Volume 28, Number 8 (119-129).

Cappers, P., and A. Satchwell (2015). “Considerations for State Regulators and Policymakers in a Post-FERC Order 745 World” *ElectricityPolicy.com*. February.

Cappers, P., C. Goldman, J. MacDonald, O. Ma (2013). “Why aren’t smaller DR resources making greater inroads as ancillary service providers?” *ElectricityPolicy.com*. October 7.

Wiser, R., M. Bolinger, P. Cappers, and R. Margolis (2006). “PV Cost Trends: Letting the Sun Shine on Solar Costs”. *REFOCUS*. Volume 7, Number 5 (26-31).

Boisvert, R., P. Cappers, and B. Neenan (2002). “The Benefits of Customer Participation in Wholesale Electricity Markets.” *The Electricity Journal*, Volume 15, Number 3 (41-51).

Neenan, B., R. Boisvert, and P. Cappers (2002). “What Makes a Customer Price Responsive?” *The Electricity Journal*, Volume 15, Number 3 (52-59).

**Reports (49)**

Satchwell, A., P. Cappers, J. Reneses, W. Gorman, G. Leventis (2019). *Financial Impacts of Net-Metered Distributed PV on a Prototypical Western Utility’s Shareholders and Ratepayers.* Berkeley, CA: Lawrence Berkeley National Laboratory. Forthcoming.

P. Cappers, S. Murphy (2019). *Unpacking the Disconnect Between Wholesale and Retail Electric Rates.* Berkeley, CA: Lawrence Berkeley National Laboratory. Forthcoming.

Satchwell, A., P. Cappers, G. Barbose (2019). *Current Developments in Retail Rate Design: Implications for Solar and Other Distributed Energy Resources.* Berkeley, CA: Lawrence Berkeley National Laboratory. July.

Satchwell, A., P. Cappers (2018). *Evolving Grid Services, Products, and Market Opportunities for Regulated Electric Utilities.* Berkeley, CA: Lawrence Berkeley National Laboratory. April.

Satchwell, A., P. Cappers (2018). *Policy Brief:* *Evolving Grid Services, Products, and Market Opportunities for Regulated Electric Utilities.* Berkeley, CA: Lawrence Berkeley National Laboratory. April.

Potter, J., E. Stuart, P. Cappers (2018). *Barrier and Opportunities to Broader Adoption of Integrated Demand Side Management at Electric Utilities: A Scoping Study*. LBNL-2001110. Berkeley, CA: Lawrence Berkeley National Laboratory. February.

Potter, J., P. Cappers (2017). *Demand Response Advanced Controls Framework and Assessment of Enabling Technology*. LBNL-2001044. Berkeley, CA: Lawrence Berkeley National Laboratory. August.

Satchwell, A., P. Cappers, C. Goldman (2017). *Financial Impacts of a Combined Energy Efficiency and Net-Metered PV Portfolio on a Prototypical Northeast Utility*. LBNL-1007280. Berkeley, CA: Lawrence Berkeley National Laboratory. April.

Cappers, P., R. Scheer (2016). *American Recovery and Reinvestment Act of 2009: Final Report on Customer Acceptance, Retention, and Response to Time-Based Rates from Consumer Behavior Studies.*  LBNL-1007279. Berkeley, CA: Lawrence Berkeley National Laboratory. November.

Cappers, P., C.A. Spurlock, A. Todd, L. Jin (2016). *Experiences of Vulnerable Residential Customer Subpopulations with Critical Peak Pricing.* LBNL-1006294. Berkeley, CA: Lawrence Berkeley National Laboratory. September.

Kihm, S., A. Satchwell, P. Cappers (2016). *The Financial Impacts of Declining Investment Opportunities on Electric Utility Shareholders*. LBNL-1005828. Berkeley, CA: Lawrence Berkeley National Laboratory. July.

Cappers, P., C.A. Spurlock, A. Todd, P. Baylis, M. Fowlie, and C. Wolfram (2016). *Time-of-Use as a Default Rate for Residential Customers: Issues and Insights*. LBNL-1005704. Berkeley, CA: Lawrence Berkeley National Laboratory. June.

Cappers, P., J. MacDonald, J. Page, J. Potter and E. Stewart (2016). *Future Opportunities and Challenges with Using Demand Response as a Resource in Distribution System Operation and Planning Activities*. LBNL-1003951. Berkeley, CA: Lawrence Berkeley National Laboratory. January.

Kihm, S., A. Satchwell, and P. Cappers (2015). *The Effects of Rising Interest Rates on Electric Utility Stock Prices: Regulatory Considerations and Approaches*. LBNL-1003952. Berkeley, CA: Lawrence Berkeley National Laboratory. December

Cappers, P., L. Hans, and R. Scheer (2015). *Interim Report on Customer Acceptance, Retention and Response to Time-Based Rates from the Consumer Behavior Studies*. LBNL-183029. Berkeley, CA: Lawrence Berkeley National Laboratory. June.

Satchwell, A., P. Cappers, L. Schwartz, and E. Martin Fadrhonc (2015). *A Framework for Organizing Current and Future Electric Utility Regulatory and Business Models*. LBNL-181246. Berkeley, CA: Lawrence Berkeley National Laboratory. June.

Todd, A., M. Perry, B. Smith, M. Sullivan, P. Cappers, and C. Goldman (2015). *Insights from Smart Meters: Ramp-up, Dependability, and Short-term Persistence of Savings from Home Energy Reports*. LBNL-182265. Berkeley, CA: Lawrence Berkeley National Laboratory. April.

Todd, A., M. Perry, B. Smith, M. Sullivan, P. Cappers, and C. Goldman (2014). *Insights from Smart Meters: Identifying Specific Actions, Behaviors and Characteristics that Drive Savings in Behavior-Based Programs*. LBNL-182263. Berkeley, CA: Lawrence Berkeley National Laboratory. December.

Cappers, P., and R. Scheer (2014). *Experience from the Consumer Behavior Studies on Engaging Customers*. LBNL-182975. Berkeley, CA: Lawrence Berkeley National Laboratory. September.

Satchwell, A., A. Mills, G. Barbose, R. Wiser, P. Cappers, and N. Darghouth (2014). *Financial Impacts of Net-Metered PV on Utilities and Ratepayers: A Scoping Study of Two Prototypical U.S. Utilities*. LBNL-6913E. Berkeley, CA: Lawrence Berkeley National Laboratory. September.

Todd, A., M. Perry, B. Smith, M. Sullivan, P. Cappers, and C. Goldman (2014). *Insights from Smart Meters: The Potential for Peak-Hour Savings from Behavior-Based Programs*. LBNL-6598E. Berkeley, CA: Lawrence Berkeley National Laboratory. March.

Hoen, B., J.P. Brown, T. Jackson, R. Wiser, M. Thayer, and P. Cappers (2013). *A Spatial Hedonic Analysis of the Effects of Wind Energy Facilities on Surrounding Property Values in the United States*. LBNL-6362E. Berkeley, CA: Lawrence Berkeley National Laboratory. August.

Cappers, P., A. Todd, M. Perry, B. Neenan and R. Boisvert (2013). *Quantifying the Impacts of Time-based Rates, Enabling Technology and Other Treatments in Consumer Behavior Studies: Protocols and Guidelines*. LBNL-6301E. Berkeley, CA: Lawrence Berkeley National Laboratory. July.

Cappers, P., A. Todd, and C. Goldman (2013). *Summary of Utility Studies: Smart Grid Investment Grant Consumer Behavior Study Analysis.* LBNL-6248E. Berkeley, CA: Lawrence Berkeley National Laboratory. June.

Todd, A., P. Cappers, and C. Goldman (2013). *Residential Customer Enrollment in Time-based Rate and Enabling Technology Programs: Smart Grid Investment Grant Consumer Behavior Study Analysis.* LBNL-6247E. Berkeley, CA: Lawrence Berkeley National Laboratory. June.

Cappers, P., J. MacDonald, and C. Goldman (2013). *Market and Policy Barriers for Demand Response Providing Ancillary Services in U.S. Markets*. LBNL-6155E. Berkeley, CA: Lawrence Berkeley National Laboratory. March.

Cappers, P., A. Mills, C. Goldman, R. Wiser, and J.H. Eto (2011). *Mass Market Demand Response and Variable Generation Integration Issues: A Scoping Study*. LBNL-5063E. Berkeley, CA: Lawrence Berkeley National Laboratory. October.

Hoen, B., R. Wiser, P. Cappers, and M. Thayer (2011). *An Analysis of the Effects of Photovoltaic Energy Systems on Residential Selling Prices in California.* LBNL-4476E. Berkeley, CA: Lawrence Berkeley National Laboratory. April

Cappers, P., A. Satchwell, C. Goldman, and J. Schelgel (2010). *Benefits and Costs of Aggressive Energy Efficiency Programs and the Impacts of Alternative Sources of Funding: Case Study of Massachusetts*. LBNL-3833E. Berkeley, CA: Lawrence Berkeley National Laboratory. August.

Hoen, B., R. Wiser, P. Cappers, M. Thayer, and G. Sethi (2009). *The Impact of Wind Power Projects on Residential Property Values in the United States: A Multi-Site Hedonic Analysis.* LBNL-2829E. Berkeley, CA: Lawrence Berkeley National Laboratory. December.

Cappers, P. and C. Goldman (2009). *Empirical Assessment of Shareholder Incentive Mechanisms Designs under Aggressive Savings Goals: Case Study of a Kansas ‘Super-Utility’*. LBNL-2492E. Berkeley, CA: Lawrence Berkeley National Laboratory. August.

Cappers, P., C. Goldman, and D. Kathan (2009). *Demand Response in U.S. Electricity Markets: Empirical Evidence*. LBNL-2124E. Berkeley, CA: Lawrence Berkeley National Laboratory. June.

Cappers, P., C. Goldman, M. Chait, G. Edgar, J. Schlegel, and W. Shirley (2008). *Financial Analysis of Incentive Mechanisms to Promote Energy Efficiency: Case Study of a Prototypical Southwest Utility*. LBNL-1598E. Berkeley, CA: Lawrence Berkeley National Laboratory. March.

Cappers, P., C. Goldman, M. Chait, G. Edgar, J. Schlegel, and W. Shirley (2008). *Quantitative Analysis of Alternative Energy Efficiency Shareholder Incentive Mechanisms.* LBNL-2590E. Berkeley, CA: Lawrence Berkeley National Laboratory. August.

Goldman, C., N. Hopper, R. Bharvirkar, B. Neenan, P. Cappers (2007). *A Methodology for Estimating Large-Customer Demand Response Market Potential.* LBNL-63346. Berkeley, CA: Lawrence Berkeley National Laboratory. August.

Goldman, C., N. Hopper, R. Bharvirkar, B. Neenan and P. Cappers (2007). *Estimating Demand Response Market Potential among Large Commercial and Industrial Customers: A Scoping Study.* LBNL-61498. Berkeley, CA: Lawrence Berkeley National Laboratory. January.

Wiser, R., M. Bolinger, P. Cappers, and R. Margolis (2006). *Letting the Sun Shine on Solar Costs: An Empirical Investigation of Photovoltaic Cost Trends in California*. LBNL-59282, NREL/TP-620-39300. Berkeley, CA: Lawrence Berkeley National Laboratory. January.

Neenan, B., P. Cappers, D. Pratt, and J. Anderson (2005). *Improving Linkages Between Wholesale and Retail Markets Through Dynamic Retail Pricing: Preliminary Results*. Report prepared for New England ISO. December.

RLW Analytics, Neenan Associates (2005). *An Evaluation of the Performance of the Demand Response Programs Implemented by ISO-NE in 2005*. Annual Demand Response Program Evaluation submitted to FERC. December.

Goldman, C., N. Hopper, R. Bharvirkar, B. Neenan, R. Boisvert, P. Cappers, D. Pratt, and K. Butkins (2005). *Customer Strategies for Responding to Day-Ahead Market Hourly Electricity Pricing.* LBNL-57128. Berkeley, CA: Lawrence Berkeley National Laboratory. August.

Neenan, B., D. Pratt, P. Cappers, J. Anderson, L. Scholle-Cotton, K. Butkins (2005). *2004 NYISO Demand Response Program Evaluation*. Report prepared for New York Independent System Operator. February.

Boisvert, R., P. Cappers, B. Neenan and B. Scott (2004). *Industrial and Commercial Industrial Response to Real Time Electricity Prices*. Berkeley, CA: Lawrence Berkeley National Laboratory. December.

RLW Analytics, Neenan Associates (2004). *An Evaluation of the Performance of the Demand Response Programs Implemented by ISO-NE in 2004*. Annual Demand Response Program Evaluation submitted to FERC. December.

Goldman, C., N. Hopper, O. Sezgen, M. Moezzi, R. Bharvirkar , B. Neenan, D. Pratt, P. Cappers, and R. Boisvert (2004). *Does Real-Time Pricing Deliver Demand Response? A Case Study of Niagara Mohawk's Large Customer RTP Tariff.* LBNL-54974. Berkeley, CA: Lawrence Berkeley National Laboratory. August.

Goldman, C., N. Hopper, O. Sezgen, M. Moezzi, R. Bharvirkar, B. Neenan, R. Boisvert, P. Cappers, and D. Pratt (2004). *Customer Response to Day-ahead Wholesale Market Electricity Prices: Case Study of RTP Program Experience in New York*. LBNL-54761. Berkeley, CA: Lawrence Berkeley National Laboratory. June.

Neenan, B., D. Pratt, P. Cappers, J. Doane, J. Anderson, L. Scholle-Cotton, K. Butkins, R. Boisvert (2004). *A Study of NYISO 2003 PRL Program Performance*. Report prepared for New York Independent System Operator. January.

RLW Analytics, Neenan Associates (2003). *An Evaluation of the Performance of the Demand Response Programs Implemented by ISO-NE in 2003*. Annual Demand Response Program Evaluation submitted to FERC. December.

Neenan, B., D. Pratt, P. Cappers, J. Doane, J. Anderson, R. Boisvert, C. Goldman, O. Sezgen, G. Barbose, R. Bharvirkar, M. Kinter-Meyer, S. Shankle and D. Bates (2003). *How and Why Customers Respond to Electricity Price Variability: A Study of NYISO and NYSERDA 2002 PRL Program Performance*. LBNL-52209/PNNL#14220. Berkeley, CA: Lawrence Berkeley National Laboratory. January.

Neenan, B., D. Pratt, P. Cappers, R. Boisvert, and K. Deal (2002). *NYISO Price-Responsive Load Program Evaluation Final Report*. Report prepared for New York Independent System Operator. January.

PRESENTATIONS & INVITED TALKS (47)

Cappers P. 2019. “Planning & Implementing Pilot Programs”. *IPU’s Advanced Studies Program: Accounting, Finance, and Evaluation*, October 3.

Cappers P. 2019. “Data and Scorecards and PIMs - Oh My! Ways to Drive Utility Performance Improvements”. *NARUC Center for Partnership & Innovation Webinar Series*, April 11.

Cappers, P., A. Todd. 2018. “Topic #3: Customer Segmentation Applications in Existing Rates and Programs.” *Uses for Smart Meter Data Webinar Series*, December 15.

Cappers, P., A. Todd. 2018. “Topic #2: Advanced Customer Segmentation.” *Uses for Smart Meter Data Webinar Series*, November 29.

Cappers, P., A. Todd. 2018. “Topic #1: Basic Customer Segmentation.” *Uses for Smart Meter Data Webinar Series*, November 15.

Cappers P., A. Satchwell, and S. Kihm. 2018. “Assessing the Financial Impacts of Performance Based Compensation”. *e21 Collaborative*, June 11.

Cappers, P. and A. Todd. 2018. “Taking Advantage of Smart Meter Data: Combining Behavioral Economics with Data Science Analytics.” *Indiana Integrated Resource Plan Contemporary Issues Technical Conference*, April 25.

Cappers, P. 2018. “Recent Industry Experience with and Results from Residential Pricing Pilots.” *Colorado Commission Information Meeting*, January 30.

Satchwell A., P. Cappers, & S. Kihm. 2018. “Understanding Utility Financial Impacts”. *e21 Collaborative Technical Advisory Group*, January 10.

Cappers, P., and A, Todd. 2017. “Stretch It Out: Heterogeneity in Estimated Demand Elasticities under Residential Time-Based Rates.” *Behavior, Energy & Climate Change Conference*, October 16.

Cappers, P. 2017. “Impacts of SGIG Consumer Behavior Studies of Time-Based Rates on Customer Acceptance, Retention, and Response.” *IEEE Smart Grid Webinar*, January 19.

Cappers, P., C.A. Spurlock, A. Todd, P. Baylis, M. Fowlie, and C. Wolfram. 2016. “Time-of-Use as a Default Rate for Residential Customers: Issues and Insights.” *Syracuse Center of Excellence Symposium*, September 22.

Cappers, P. 2016. Panelist on “Latest Developments and Success Stories in Time Varying Rates.” *A National Town Meeting on Demand Response*, July 13.

Cappers, P. 2016. “Issues and Insights from Analysis of Time-of-Use as a Default Rate.” *Mid-Atlantic Demand Response Initiative*, March 22.

Cappers, P., J. MacDonald, J. Page, J. Potter, and E. Stewart. 2016. “Future Opportunities and Challenges with Using Demand Response as a Resource in Distribution System Operations and Planning Activities”. *Solar Electric Power Alliance Drop-In Call*, March 2.

Cappers, P. 2015. “How DR Can and Cannot Help Manage the Distribution System.” *Syracuse Center of Excellence Symposium*, November 9.

Cappers, P. 2015. “Understanding At-Risk Subpopulations under Default Time-of-Use.” *Peak Load Management Alliance 16th Annual Fall Conference*, November 3.

Cappers, P. 2015. “How DR Can and Cannot Help Manage the Distribution System.” A *National Summit on Smart Grid and Climate Change*, October 13.

Cappers, P. 2015. “Preliminary Results of SGIG Consumer Behavior Studies by Income Level.” *A National Town Meeting on Demand Response*, May 28.

Cappers, P. 2015. “Default Bias, Follow-on Behavior and Welfare in Electricity Pricing Programs.” *A National Town Meeting on Demand Response*, May 28.

Cappers, P. 2014. “Insights on Home Energy Reports from Smart Meter Data Analytics.” *A National Summit on Smart Grid and Climate Change*, December 2.

Cappers, P. 2014. “Overview and Preliminary Results of ARRA-Funded SGIG Consumer Behavior Studies.” *IEEE Power & Energy Society General Meeting*, July 30.

Cappers, P. 2014. “National Perspectives on Customers’ Interest and Ability to Provide Power System Services”. *New York DPS Symposium: An Energy Agenda for the Future*, May 22.

Cappers, P. 2014. “Overview and Preliminary Results of ARRA-Funded SGIG Consumer Behavior Studies.” *State and Local Energy Efficiency Action Network – Customer Information and Behavior Working Group*, April 23.

Cappers, P. 2013. “Overview of ARRA-Funded SGIG Consumer Behavior Studies.” *National Town Meeting on Demand Response*, July 11.

Cappers, P. 2013. “Overview of ARRA-Funded SGIG Consumer Behavior Studies.” *Federal Smart Grid Task Force*, July 9.

Cappers, P. 2013. “Overview of ARRA-Funded SGIG Consumer Behavior Studies.” *DOE EERE SunShot Discussion Club*, June 25.

Cappers, P. 2013. “Design, Deployment, and Implementation Experiences of ARRA-Funded SGIG Consumer Behavior Studies.” *Mid-America Regulatory Conference*, July 11.

Cappers, P. 2013. “Market and Policy Barriers for Demand Response Providing Ancillary Services in U.S. Electricity Markets.” *Cornell University e3rg Meeting*, May 9.

Cappers, P. 2013. “Smart Grid Investment Grant Consumer Behavior Study Update.” *EEI Smart Grid Value Group*, May 8.

Cappers, P. 2013. “Market and Policy Barriers for Demand Response Providing Ancillary Services in U.S. Electricity Markets.” *NARUC ERE Subcommittee*, May 1.

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Cappers, P. 2011. Pricing Panel Discussant. *Center for Research in Regulated Industries Eastern Conference: Advanced Workshop in Regulation and Competition*, May 22.

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Cappers, P. and C. Goldman. 2009. “Financial Impact of Energy Efficiency at a Kansas ‘Super-Utility’ under a Federal Renewable Portfolio Standard.” *Advanced Workshop in Regulation and Competition: Eastern Conference*, May 14.

Cappers, P. and C. Goldman. 2009. “Financial Impact of Energy Efficiency at a Kansas ‘Super-Utility’.” *Midwest Energy Solutions Conference*, January 8.

Goldman, C. and P. Cappers. 2009. “Empirical Assessment of Shareholder Incentive Mechanisms Designs under Aggressive Savings Goals: Case Study of a Kansas ‘Super-Utility’.” *International Energy Program Evaluation Conference*, August 14.

Cappers, P. 2008. “Financial Analysis of Incentive Approaches to Promote Energy Efficiency for a Prototypical Southwest Utility.” *5th Annual Southwest Regional Energy Efficiency Workshop*, November 14.

Cappers, P. 2008. “Quantitative Financial Analysis of Alternative Utility Incentive Mechanisms for Energy Efficiency Programs.” *American Council for an Energy Efficient Economy: Summer Study on Energy Efficiency in Buildings*, September 28.

Cappers, P. and B. Neenan. 2007. “Benefits of Time-Differentiated Default Electricity Services – a Case Study.” *Advanced Workshop in Regulation and Competition: Eastern Conference*, May 18.

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AWARDS

Winner of Grid-Interop Forum’s Outstanding Technical Paper on Business and Policy (2012).

Winner of American Real Estate Society Manuscript Prize for Best Paper on Real Estate Sustainability (2010)

Northeastern Agricultural and Resource Economics Association Master’s Thesis Award (2005).

LANGUAGE SKILLS

French (conversational).

PROFESSIONAL ACTIVITIES

Reviewer: Sloan Foundation, New Zealand Ministry of Business, Innovation & Employment; The Energy Journal; Energy Policy; Energy: The International Journal; IEEE Transactions on Power Systems; IET Generation, Transmission & Distribution; Energy Efficiency; Applied Energy; and Utilities Policy.

REFERENCES

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