

Francis E. Wyatt

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Professional Experience

December 2005 – Present

*Co-Founder, **Green Energy Economics Group, Inc.**, Cuttingsville, VT.*

Consultancy specializing in energy-efficiency and renewable resource portfolios investing in electricity and gas savings, co-founded with John Plunkett, a co-worker since 1992. Develop cost-effectiveness screening models for program planning or project-specific analysis. Develop input assumptions for demand-side management programs cost-effectiveness screening. Work on analyses projecting economic and achievable energy-savings potentials. Plan, design and assist with implementation of efficiency programs.

1996 – 2005

*Senior Analyst, **Optimal Energy, Inc.**, Bristol, VT.*

Developed state- or utility-specific cost-effectiveness screening models for program planning or implementation. Provide follow-up on-site training for using screening models. Develop demand-side management programs, including costs, savings, incentive structure and screening for cost-effectiveness. Focus on commercial and industrial programs and energy-saving measures. Review and critique of utility IRP filings in contested regulatory proceedings. Work on electric and gas analyses projecting technical, economic, and achievable energy-savings potentials. Developed electric energy and peak load profiles for a comprehensive list of residential and non-residential efficiency measures.

1992 – 1996

*Analyst, **Resource Insight, Inc.**, Middlebury, VT.*

Reviewed, critiqued, and compared utility demand-side management programs. Analyses included program costs, energy impacts, customer participation, program descriptions, implementation, and comparison with other utility programs.

1989 – 1992

*Civil Engineer, **Enman Engineering**, Clarendon, VT.*

Designed sewage disposal systems, water systems, roads, site grading and storm drainage. Drafted plans using AutoCAD. Conducted preliminary site investigations and construction observations. Assisted clients with obtaining state and local permits.

1987 – 1989

*Civil Engineer, **Nowlan Engineering**, Ludlow, VT.*

Designed and drafted sewage disposal systems and water supply. Assisted clients with obtaining town and state permits for subdivisions, sewage disposal and water supply.

1984 – 1985

Solar Engineer, Environmental Solar Design, N. Hollywood, CA.

Designed solar hot water systems, purchased all parts for installations, obtained city permits, coordinated crews and customers for job installations, and installed solar hot water systems for commercial and residential customers.

Affiliations

Professional Engineer in Civil/Sanitary, State of Vermont, Vermont Society of Professional Engineers.

Highlights of Project Experience

ONGOING AND PAST ASSIGNMENTS (GEEG) – 2006-PRESENT

Massachusetts

Attorney General's Office of Ratepayer Advocacy

- Reviewed pilot district geothermal project (DPU 24-114). November 2024 – Present.
- Provided economic, technical, and policy related consulting services to the AG's office related to Mass Save® 2025 to 2027 Energy Efficiency Plans and other decarbonization issues, such as the Clean Heat Standard. October 2023 - Present.

Ontario

Ontario Energy Board

- Served on the Stakeholder Advisory Group (SAG): provided expert advice on efficiency program design and potential study analysis. 2023 - 2024.

Small Business Utility Alliance

- Reviewed Enbridge DSM plan and participated in fully litigated proceeding, including providing testimony on best practices and program design, coordination with electric programs, cost effectiveness, shareholder incentives, and stakeholder engagement. (Matter No. EB-2021-0002). 2021-2022.

Nova Scotia

Consumer Advocate of Nova Scotia

- Provided review and comments on proposed DSM portfolio and DSM potential study. Member of the DSM Advisory Group (DSMAG). 2019 - Present.

California

Small Business Utility Advocate (2020 to present)

- Provided testimony on the Energy Efficiency Business Plans for the 2024-2027 Portfolio and comments on staff proposal for gas energy efficiency incentives and codes and standards sub-programs and budgets (Do. No. 22-02-005)
- Provided comments for ongoing docket on clean energy financing (Do. No. 20-08-022)
- Provided comments on program design of CleanPowerSF's Food Service Program (Do. No R13-11-05)

Vermont

- Reviewed and analyzed program proposals for the Community Energy & Efficiency Development Fund (CEED Fund), including the development of scoring and rebalancing mechanisms and reviewing and revising cost-effectiveness analyses for consistent comparisons for innovative concepts not already addressed by conventional DSM programs. August 2012 – 2017.
- Cost-effectiveness screening model and analysis for 5-year investment of \$9 million Energy Efficiency Fund, supplementing Efficiency Vermont investment, on behalf of Green Mountain Power. February 2007 – 2010.
- Worked on development of the efficiency portions of the economic model used for assessing the options for meeting the reliability gap in the St. Albans region of Vermont for Green Mountain Power. 2013.
- Providing technical support for program planning, development and implementation for Efficiency Vermont, the world's first Energy Efficiency Utility, as part of multi-organizational enterprise operating under a contract with the Vermont Public Service Board to deliver statewide energy-efficiency programs for the customers of Vermont's twenty-one electric utilities. Cost-effectiveness screening tool development, maintenance and training. Technical support on program planning, including development of technical reference manual for efficiency measures. Developed energy and peak load profiles for residential and non-residential efficiency measures. Forecasting and bidding tool development for ISO New England forward capacity market. 2000 – 2014.
- Assist Vermont Gas Systems with transition to an energy efficiency utility. Represent VGS at multifamily and commercial benchmarking working group meetings. July 2015 – 2017.

New Jersey

- Participated in developing the analysis for electric and natural gas energy efficiency potential in New Jersey for the New Jersey Board of Public Utilities. 2019.

Pennsylvania

- Program design, implementation planning, regulatory support, technical reference manual development and portfolio cost-effectiveness tool for Columbia Gas of Pennsylvania. Assisted

with testimony before the Pennsylvania Public Utility Commission in Docket No. P-2014-2459362. February 2022 – Present.

- Program design, implementation planning, regulatory support, technical reference manual development and portfolio and project cost-effectiveness tools for Philadelphia Gas Works. Assisted with testimonies before the Pennsylvania Public Utility Commission in Docket R-2009-2139884, December 2009 and April 2010 and Docket P-2014-2459362, 2015. August 2008 – present.
- Program design, implementation planning, regulatory support, technical reference manual development and portfolio and project cost-effectiveness tools for UGI Gas, including a CHP program. July 2015 – present.
- Energy efficiency program design and implementation assistance, including cost-effectiveness analysis and net-to-gross ratios for UGI Electric. July 2016 – present.
- High-level achievable potential analysis and subsequent portfolio design and cost-effectiveness analysis for Peoples Natural Gas of Pennsylvania. June 2017 – 2019.
- Provided energy-efficiency potential analysis and support on preparation of testimony regarding Peoples Gas of Pennsylvania. On behalf of Citizens for Pennsylvania’s Future, July – September 2013.
- Analysis and assistance with direct and surrebuttal testimony for Citizens for Pennsylvania’s Future (Pennfuture) on appropriate levels of efficiency portfolio investment in two rate cases before the Pennsylvania Public Utility Commission: Docket Nos. 00061366 and 00061367 re Metropolitan Edison Company and Pennsylvania Electric Company; and Docket No. R-00061346 re Duquesne Light Company. May - August 2006.

Wisconsin

- Portfolio and project cost-effectiveness calculator development. Cost-effectiveness analysis, assistance with contractor selection and regulatory support for 3-year energy-efficiency portfolio for Focus on Energy in Wisconsin. June 2011 – 2013.

Louisiana

- Empirical costs projections and cost-effectiveness analysis of alternative energy-efficiency resource acquisition scenarios for Entergy New Orleans, prepared for the Alliance for Affordable Energy and submitted as comments to the City Council. April-May 2013.

Minnesota

- Subcontractor to Optimal Energy Inc. for the state of Minnesota electric and gas potential studies for the Minnesota Department of Commerce, Division of Energy Resources. Developed agricultural measure characterizations. June 2017 - January 2018.

Texas

- Cost and savings analysis on proposed Public Utility Commission rules for utilities pursuing statutory DSM savings goals, on behalf of the Sierra Club. May-June 2012.
- Analysis of and report on achievable savings and costs for Austin City Council consumer advocate, "Energy Efficiency Resource Acquisition Options for Austin Energy." April 2012.

District of Columbia

- Developed multi-measure cost-effectiveness screening tool for the District of Columbia Sustainable Energy Utility, as a subcontractor to Vermont Energy Investment Corporation. November 2011 – 2014.

Illinois

- Portfolio and project cost-effectiveness calculator development. Cost-effectiveness analysis, assistance with contractor selection and regulatory support for 3-year energy-efficiency portfolio for Peoples Gas in Illinois. September 2008 – June 2012.

Oklahoma

- Energy efficiency potential analysis in support of comments on PUC rulemaking regarding DSM programs on behalf of the Sierra Club, December 2013 – January 2014.
- Analysis, technical assistance and testimony support on potential for energy-efficiency investment to substitute for fossil generation in proceedings before the Oklahoma Commerce Commission on behalf of the Sierra Club, May - December 2011.

Connecticut

- Analysis and testimony support regarding long-range energy-efficiency procurement plan of the Energy Conservation Management Board, on behalf of the Connecticut Office of Consumer Counsel. Fall 2008.

Florida

- Analysis and assistance with direct testimony on the effect of economically achievable energy efficiency on the need for new coal-fired generation, on behalf of the Sierra Club and other environmental intervenors, Florida Public Service Commission Docket No. 070098-EI. March-April 2007. The PSC denied the requested certificate of public good in June 2007.

British Columbia, Canada

- Analysis and testimony support on FortisBC Gas and FortisBC Electric long-term DSM plans, submitted to the British Columbia Utilities Commission, on behalf of the BC Sustainable Energy Association and Sierra Club (BC Chapter). December 2013 – May 2014.

- Analysis and testimony support on adequacy of BC Hydro's 2012-14 DSM Plan, submitted to the British Columbia Utilities Commission, BCUC Project No. 3698592, on behalf of the BC Sustainable Energy Association and Sierra Club (BC Chapter). August 2011 – May 2012.
- Analysis and testimony support on reasonableness of gas DSM Plan by Fortis Energy Utilities before the British Columbia Utilities Commission, BCUC Project No. 3698627, on behalf of the BC Sustainable Energy Association and Sierra Club (BC Chapter), May – November 2011.
- Analysis and testimony support on assessment of FortisBC Electric's long-term DSM plan, before the BCUC, on behalf of BCSEA/SCBC, August 2011 – March 2012.
- Analysis and support for direct testimony on assessment of BC Hydro's long-term DSM plan, before the BCUC, on behalf of the BC Sustainable Energy Association and Sierra Club Canada. November 2008 – March 2009. October 2011 –present.
- Analysis and support for direct testimony on assessment of Terasen Gas conservation plans before the BCUC, on behalf of the BC Sustainable Energy Association and Sierra Club Canada. October 2008.
- Provided analysis for direct testimony on energy-efficiency investment spending and savings, British Columbia Hydro and Power Authority, 2006 Integrated Electricity Plan and Long Term Acquisition Plan, Project No. 3698419; and F2007/F2008 Revenue Requirements Application, Project No. 3698416, on behalf of the Sierra Club of Canada (British Columbia Chapter), British Columbia Sustainable Energy Association, and Peace Valley Environment Association. September 2006 – January 2007.

People's Republic of China

- Developed portfolio and project economic and financial analysis tools for use in China, and provided remote and in-person training sessions on use. For Natural Resources Defense Council and Institute for Sustainable Communities. August 2008 – September 2010.
- Conducted economic and financial analysis and report for factory efficiency retrofits for Guangdong Economic and Trade Commission, China, on behalf of the Institute for Sustainable Communities October 2007-2008.
- Developed and populated project and portfolio economic and financial models for a pre-feasibility analysis for the Asian Development Bank of a potential loan to support a \$100 million demonstration Efficiency Power Plant (EPP) project in Guangdong province, China, focusing on industrial, commercial and institutional retrofits. June 2006 – December 2007.
- Developed cost-effectiveness screening model and conducted benefit/cost analysis of efficiency program portfolios for Jiangsu province and Shanghai municipality, including assessment of 300-MW Efficiency Power Plants for prospectus by Asian Development Bank. Conducted economic and financial analyses and reports for factory efficiency retrofits Worked on behalf of the Natural Resources Defense Council. (July 2003 – 2008)

PRIOR ASSIGNMENTS (OPTIMAL ENERGY) – 1996-2005

- Developed DSM measure and program cost-effectiveness screening tools to be used by Massachusetts utilities and led training sessions for using the tool. Derived measure and program screening inputs for commercial and industrial programs considered by Boston Edison Company and Commonwealth Electric and Gas Company, for the Massachusetts Collaborative Non-Utility Parties. Developed cost-effectiveness protocols for measures to be installed in a small commercial retrofit program. Developed a custom measure cost-effectiveness and rebate-calculating tool. (1999 –2005)
- Developed DSM custom commercial and industrial measure cost-effectiveness and rebate-calculating screening tool for Cape Light Compact and NSTAR and led training sessions for using the tool. Derived measure screening inputs for commercial and industrial programs. (2003 – 2006)
- Developed cost-effectiveness screening model and assisted with analysis for assessment of economically achievable potential for distributed resources to solve a variety of transmission and distribution contingencies in the “southern loop” of Vermont, on behalf of the Vermont Electric Power Company and Central Vermont Public Service. (2005-2006)
- Part of team estimating the economic and achievable efficiency potentials for natural gas savings in New York State. Developed the portfolio cost-effectiveness screening model used in the analysis. Developed input assumptions for the commercial sector. Integrated the residential, commercial and industrial analyses. (July 2005 – March 2006)
- Developed demand-side management portfolio and project cost-effectiveness screening models for New Brunswick, Canada. Provided training on use of models. (2005-2006)
- Consultant to the Long Island Power Authority in developing and analyzing a portfolio of C&I market transformation and retrofit programs. The project included performance of measure and program level quantitative cost-effectiveness analysis and budgeting, relying on both primary and secondary data sources. Involved with follow-up implementation and evaluation planning tasks, including specific rebate levels, efficiency requirements, savings algorithms, and developing a custom measure cost-effectiveness and rebate-calculating tool. (1998 – 2006)
- Performed analysis of economically achievable potential for energy-efficiency resources to offset loss of output in the event of early retirement of the Indian Point nuclear generation station, on behalf of the National Academy of Sciences. (May-October 2005)
- Developed technical reference manual with savings algorithms and performed analysis for written testimony recommending energy-efficiency portfolio investment levels and savings goals in utility merger application before the Pennsylvania Public Utility Commission, Joint Application of PECO Energy Company and Public Service Electric and Gas Company for Approval of the Merger of Public Service Enterprise Group with and into Exelon Corporation, on behalf of the Pennfuture Parties. (June 2005)
- Consultant to the Northeast Energy Efficiency Partnerships, a regional nonprofit pursuing market transformation in efficiency markets. Developed demand-side management program cost-effectiveness screening model. Economic analysis and report on cost-effectiveness of

NEEP initiatives involving C&I motors, C&I lighting, C&I HVAC, C&I New Construction, performance of existing C&I buildings, industrial efficiency, clothes washers, and residential lighting. Cost-effectiveness of codes and standards analyses. Estimated potential electricity savings for New England. (1998 – 2005)

- Provided review and advice on development of demand-side management project, program and portfolio cost-effectiveness software for BC Hydro (Canada). (2004)
- Contributed to commercial and industrial analysis for report on Opportunities for Accelerated Electrical Energy Efficiency in Quebec 2005 – 2012, on behalf of Regroupement National des Conseils Regionaux de L'environnement du Quebec, Regroupement des Organismes Environnementaux en Energie and Regroupement pour la Responsabilite Sociale des Entreprises. (April – May 2004)
- Developed cost-effectiveness screening model and screened agricultural efficiency measures for EnSave Energy Performance, Inc. (2004)
- Provided support for report on performance incentives for administrators of conservation and load management programs in Connecticut, on behalf of Connecticut Office of Consumer Counsel. (November – December 2003)
- Integration of industrial, commercial, residential, and renewable results; cost-effectiveness screening tool creation; and commercial analyses assessing technical, achievable and economic potential for energy-efficiency and renewable resources in New York State and five sub regions over 5, 10 and 20 years, on behalf of New York State Research and Development Authority. (January 2002 – August 2003)
- Integration of industrial, commercial, and residential results; cost-effectiveness screening tool creation; and commercial and industrial analyses projecting potential for demand-side resources to defer the need for major transmission upgrades, on behalf of Vermont Electric Power Company. (November 2001 – April 2003)
- Integration of industrial, commercial, and residential results; cost-effectiveness screening tool creation; and commercial and industrial analyses updating statewide projection of economically achievable efficiency potential for state of Vermont, on behalf of the Vermont Department of Public Service. (October 2001 – February 2003)
- Contributed to commercial and industrial analysis for report on potential for energy efficiency in Michigan, on behalf of the American Council for an Energy-Efficient Economy. (September – December 2002)
- Contributed to commercial and industrial analysis for report on potential for electrical efficiency savings in Maine, on behalf of the Maine Public Advocate. (July – October 2002)
- Consultant to the New Jersey Clean Energy Collaborative – developed the program cost-effectiveness screening model used for planning purposes, developed the commercial custom cost-effectiveness measure screening tool used in program implementation, and conducted

program cost-effectiveness screening for the commercial and industrial efficiency programs (2000 – 2001)

- Provided support for the assessment of Centra/Union Gas (Canada) DSM programs, for the Green Energy Coalition. (1996)
- Provided technical support to the United Illuminating Company with its cost-effectiveness screening of proposed DSM programs. Developed cost-effectiveness screening tool and provided training on its use. Reviewed inputs and assured proper use of the screening tool. (1999)
- Characterization of efficiency resources, DSM program design, evaluation of program design and implementation procedures for Citizens Utilities Company. Developed commercial and industrial measure characterizations and savings algorithms. (1998 – 1999)
- Support to the Burlington (VT) Electric Department in development of its 1997 Energy Efficiency Plan. Services included program planning, measure characterization and program design. (1997)
- Contributed to the design, analysis and negotiation of commercial, industrial and residential core DSM programs for the state of Vermont, for the Vermont Department of Public Service. These core programs became the basis for Vermont's Efficiency Utility. Work included establishing baseline efficiencies; estimates of energy-efficient measure costs, savings and participation; cost-effectiveness screening of measures and programs. (1995 – 1999)
- Developed rebate-calculating and cost-effectiveness spreadsheet for commercial comprehensive early HVAC retirement, for Potomac Electric Power Company. (1997)
- Reviewed measure and program screening of commercial, industrial and residential DSM programs, for the Maryland Office of People's Counsel. Offering suggestions for more accurate screening assumptions and improvements in program designs to increase cost-effectiveness. (1997)

PRIOR ASSIGNMENTS (RESOURCE INSIGHT) – 1992-1996

- Technical assistance on DSM program development in the Potomac Electric Power Company collaborative, for the Maryland Office of People's Counsel. Work included characterizing new energy-efficiency measures and screening for cost-effectiveness, primarily in the commercial sector. Contributed toward the development of baseline and minimum-qualifying efficiencies, and incentive structures. (1992 – 1997)
- Developed costs and savings of commercial and industrial DSM program enhancements for Florida Power Corporation, for the Legal Environmental Assistance Fund and Florida Power Corporation. (1996)
- Reviewed Jersey Central Power and Light's proposed commercial and industrial DSM programs, for the Mid-Atlantic Energy Project. Suggested specific improvements to programs. (1995 – 1996)

- Provided analysis used in negotiations with MidAmerican Energy Company on IRP and DSM program design issues, on behalf of the Iowa Office of Consumer Advocate. Contributed toward the development of innovative Comprehensive Early HVAC Retirement programs for the commercial market. Quantified all program impacts and costs, and performed economic analysis of the program. (1995)
- Contributed to development of commercial and industrial new construction and HVAC retirement programs for Interstate Power, on behalf of the Iowa Office of Consumer Advocate. Quantified measure and program projected impacts and costs. Support for revisions to Interstate Power's IRP filing to include the above programs. (1995)
- Provided analysis for a critical review of Florida Power and Light's integrated resource plan. This project involved assessing the completeness and appropriateness of FPL's IRP process and outcomes, focusing on the development, analysis and screening of its proposed commercial and industrial DSM programs, for the Legal Environmental Assistance Fund. (1995)
- Analysis and testimony regarding fuel-switching and other DSM program options. Before the Vermont Public Service Board Investigation into Least-Cost Investments, Energy Efficiency, Conservation and Management of Demand for Energy In Re: Fuel-Switching Issues Specific to CVPS Docket 5270-CV-1 In Re: CVPS program designs Docket 5270-CV-3, for the Vermont Department of Public Service, (November 1994 – October 1995)
- Technical assistance analyzing need for power and DSM program changes. Delmarva Power & Light Company Dorchester Power Plant Certificate of Public Convenience and Necessity. Maryland PSC Case No. 8489, for the Maryland Office of People's Counsel. (January 1993)
- Estimated the economically achievable electrical efficiency savings for residential, commercial/industrial, lost-opportunity and retrofit markets in the United Kingdom, for the Conservation Law Foundation. (1993)
- Support for the quantification of costs, savings and cost effectiveness screening of a full portfolio of proposed demand-management programs for Ontario Hydro (Canada), for the Coalition of Environmental Groups. (1992)
- Provided technical assistance for determining DSM potential savings. In the matter of the application of the Detroit Edison Company for authority to amend its rate schedules governing the supply of electric energy and to amend other miscellaneous rates, for the Michigan United Conservation Clubs. Michigan PSC Case No. U-10102. (November 1992)

PRIOR ASSIGNMENTS (ENVIRONMENTAL SOLAR DESIGN) – 1984-1985

- Designed, permitted and installed solar hot water systems for commercial and residential customers. (1984-1985)

Education

B.S., Agricultural Engineering, University of Missouri, Columbia, Missouri, 1982.

B.S., Agriculture, Agricultural Mechanization, University of Missouri, Columbia, Missouri, 1982.

Member, Tau Beta Pi, an honorary engineering society.

Theodore Love

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Professional Experience

Green Energy Economics Group, Inc. – Cuttingsville, VT

<i>President</i>	<i>2024 to Present</i>
<i>Partner</i>	<i>2017 to 2024</i>
<i>Senior Associate and Data Scientist</i>	<i>2013 to 2017</i>
<i>Associate</i>	<i>2010 to 2013</i>
<i>Analyst</i>	<i>2007 to 2010</i>

For over 15 years, Theodore “Theo” Love has been providing insights into the design, analysis, and implementation of energy efficiency and distributed energy resource programs and portfolios in twelve states, three Canadian provinces, and China. He has a particular focus on EE/DER policy analysis, program design and implementation, cost-effectiveness testing, financing, and building scalable tools to analyze everything from individual projects to programs to portfolios. Some recent project experience includes:

- Providing regulatory support to the Massachusetts Office of the Attorney General on the Mass Save portfolio of programs and review of Eversource’s geothermal network pilot.
- Providing regulatory and policy analysis assistance to the Small business Utility Advocate in California and Ontario on various energy efficiency dockets.
- Ongoing review and analysis of EfficiencyOne’s energy efficiency portfolio in Nova Scotia on behalf of the Consumer Advocate of Nova Scotia.
- Design, regulatory, and implementation support for voluntary electric and gas energy efficiency programs in Pennsylvania for UGI, PGW, and Columbia Gas.
- Working with PSE&G in New Jersey on forecasting and scaling their internally managed commercial and industrial programs.

2007 – 2010

Consultant, Alter & Rosen, LLP, New York, NY

2006 – 2007

Client Reporting Analyst, AllianceBernstein LP, White Plains, NY

Affiliations

Association of Energy Service Professionals (AESP) - Business Issues and Regulatory Models Topic Committee Co-Chair 2023 - present

AESP Gas Topic Committee Co-Chair 2019-2023

AESP National Conference Planning Committee 2021, 2022, 2023

Energy Efficiency Alliance (EEA) of Pennsylvania / New Jersey - Policy Conference Planning Committee 2022, 2023

Recent Project Experience

Green Energy Economics Group, Inc.

Economic and Policy Analysis

Attorney General's Office of Ratepayer Advocacy- Massachusetts (October 2023 – Present)

- Provides economic, technical, and policy related consulting services to the AG's office related to MA's 2025 to 2027 Energy Efficiency Plans and other decarbonization issues, such as the Clean Heat Standard, HEAT Loans, performance incentives, program design, and cost-effectiveness testing.
- Lead consultant on review of Eversource's \$27 million network geothermal demonstration project.
- Expert assisting with the review and testimony on the natural gas utility Climate Compliance Plan (CCP) filings (D.P.U. 25-50 to 45) regarding energy efficiency and Mass Save.
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Economic, Policy, and Technical Analysis

Office of People's Counsel - Maryland (June 2025 – Present)

- Lead consulting team that assisted OPC in Matter No. 9749 and provided economic and technical analysis of Baltimore Gas and Electric's and Washington Gas and Light's Thermal Energy Networks System (TENS) pilot projects, including a review of site selection, engineering approach, rate design, cost-effectiveness, and policy alignment.

Economic and Policy Analysis

Small Business Utility Advocate - California (June 2020 – Present)

- Provided testimony and analysis on cost recovery for wildfire management and grid hardening efforts for Southern California Edison (Docket No. A23-05-010)
- Reviewed plans and provided testimony on codes and standards, program budgets, and non-energy benefits (Docket No. A22-02-005)
- Provided assistance on comments and testimony regarding phase out of gas incentives (Docket No. A22-02-005)
- Reviewed plans and provided testimony on cost-effectiveness test and application of Automated Response Technology (ART) Program. (Docket No. A22-05-002)
- Assisted SBUA with analysis of claims and provided feedback on potential areas of mismanagement of funds (Docket No. A22-06-003)
- Reviewed plan and worked with SBUA to draft advice letter on program design related to small business, measures selection, and reporting requirements. (Docket No. R08-16-021)
- Participated in working group to examine the definition of underserved customers. Authored report on participation rates for small and microbusinesses in CA energy efficiency programs. (Docket No. R13-11-005)

- Provided comments on cost-effectiveness tools and reporting databases for Energy Efficiency programs (Docket No. R13-11-005)
- Reviewed third-party evaluation plans (Docket No. R13-11-005)
- Participated in workshops and developed comments and testimony supporting small business access to clean energy financing (Docket No. R20-08-022).

Economic and Policy Analysis

Small Business Utility Alliance – Ontario, CA

(June 2021 – Present)

- Reviewed plan and participated in fully litigated proceeding, including providing testimony on best practices and program design, coordination with electric programs, cost-effectiveness, shareholder incentives, and stakeholder engagement. (Matter No. EB-2021-0002)

Economic and Policy Analysis

Consumer Advocate – Nova Scotia

(March 2019 – Present)

- Member of DSM Advisory Group (DSMAG) on behalf of the Consumer Advocate of Nova Scotia to provide ongoing support for design and implementation of programs.
- Participated in stakeholder process to develop a new cost-effectiveness test in 2024.
- Provided analysis and written testimony on Efficiency One's (E1) 2023 – 2025 DSM Plan (Matter No. M10473) as it relates to historical spending, affordability, underserved communities, and avoided costs.
- Provided analysis and written testimony on Efficiency One's (E1) 2020 – 2022 DSM Plan (Matter No. M10473) as it relates to spending and savings levels, affordability, and allocation of funds.
- Provided comments on the 2019 DSM Potential Study's economic analysis and projection assumptions and approach
- Provided testimony on the 2026 DSM Plan extension by E1 (Matter No. 12249)
- Provided comments on NSP's proposed approach to modifying time varying pricing tariffs based on service interruption due to a cyberattack (Matter No. 12249)

Development and Implementation of Energy Efficiency and Conservation Plans

UGI Utilities, Inc. – Pennsylvania

(June 2015 – Present)

Assist UGI Utilities, Inc. and PNG with the development and approval of Energy Efficiency and Conservation (EE&C) Plans for their UGI Gas PNG Gas, and UGI Electric divisions, including:

- Ongoing evaluation and portfolio planning activities for both UGI Gas and UGI Electric energy efficiency portfolios.
- Developing an achievable efficiency scenarios for UGI Gas and PNG Gas.
- Designing a five-year, \$27 million energy efficiency and conservation plan for UGI Gas. Submitting direct testimony on behalf of UGI Gas, Inc. on the design and implementation of the proposed plan (Docket No. R-2015-2518438)
- Designing Phase II of the energy efficiency and conservation plan for UGI Gas. Submitting direct testimony on behalf of UGI Gas, Inc. on the design and implementation of the proposed plan (Docket No. M-2024-3048418)

- Designing a five-year \$15 million energy efficiency and conservation plan for PNG Gas. Submitting direct testimony on behalf of PNG Gas, Inc. on the design and implementation of the proposed plan (Docket No. R-2016-2580030)
- Assisting with the design and implementation and reporting of the UGI Electric's voluntary EE programs. Designing and assisting with approval for a five-year \$7.2 million electric energy efficiency and conservation plan (Docket No. M-2018-3004144)

Strategic Planning and Implementation of DSM Portfolio

Philadelphia Gas Work's (PGW) - Philadelphia, Pennsylvania (August 2008 – Present)

- Assisting with ongoing program planning and implementation of both the Low-Income Usage Reduction Plan (LIURP) and the market-rate DSM portfolio.
- Provided supporting testimony and analysis for the Phase III market-rate DSM plan under Docket No. P-2014-2459362.
- Designed Phase II plan with PGW and submitted direct testimony supporting the plan on behalf of PGW (Docket No. P-2014-2459362)
- Member of lead consulting team that aided in the design and approval of PGW's five-year, \$54 million portfolio of DSM programs;
- Providing ongoing technical assistance in the development of PGW's \$35 million Phase II five year plan.
- Providing ongoing technical support in program design and implementation, including the roll-out of six programs that, combined since inception, have saved 120,000 MMBtus at a cost of approximately \$17 million;
- Developed specifications for and currently collaborating with internal PGW staff on database system to track weatherization projects, rebate applications, and other information pertaining to PGW's DSM portfolio;
- Developed multiple Excel-based tools used by contractors to perform field audits, provide QA/QC, and track ongoing progress for contractors, programs, and the portfolio as a whole;
- Provided research and analysis support for multiple rounds of expert testimony before the Pennsylvania Public Utility Commission (Docket R-2009—2149884);
- Aided in the issuance of RFPs and selection of candidates for over \$40 million in contracts;
- Major contributor to PGW's ongoing formal reporting and evaluation process, including the issuance of five implementation plans, three annual reports, and two impact evaluations.

Program Management and Benefit Cost Analysis Expert

Public Service Enterprise Group (PSE&G) – New Jersey. (Oct 2021 – Apr 2023, Feb 2024 - present)

- Consulted on tracking, forecasting and management of PSE&G's internally run commercial Engineered Solutions and Direct Install programs.
- Assisted with rollout of tracking system for PSE&G DSM portfolio of internally managed program.
- Assisted with the design and deployment of the NJ Comfort Partners tracking system across seven utilities, including the transfer and review of two previous legacy databases.

- Developed training materials and reference documents for Engineered Solutions program.
- Provided assistance with calculation of six economic tests for PSE&G's energy efficiency and conservation portfolio, including development of calculation engine and launch as a subcontractor to ANB Enterprises.

Development and Regulatory Support for DSM Portfolio

Columbia Gas of Pennsylvania - Pittsburgh, Pennsylvania (February 2022 – Present)

- Successfully developed, provided regulatory support for, and got approval of a three-year voluntary gas energy efficiency plan and provided supporting testimony under Docket No. P-2014-2459362.
- Developed plan updated and successfully received PA PUC approval for plan update in 2024 under Columbia's 2024 Rate Case proceeding (Docket No. R-2024-3046519)
- Lead consultant on evaluation of Columbia's online audit kit program and residential prescriptive program (2023 and 2024 calendar years)
- Ongoing assistance with the launch and implementation of the first three-year voluntary gas energy efficiency plan.

Technical Assistance Provider

U.S. Department of Housing and Urban Development (HUD) (January 2025 – Present)

- Worked as part of a team with Capital Access Inc. to provide a Multi-State Needs Assessment for a "Program-in-a-box" concept to leverage CDBG funding with additional sources of federal, state, and local funding.
- Contributing expert to a team lead by Capital Access Inc. to launch a pilot Whole Home Performance program in Pennsylvania, Michigan, and South Carolina.

Program Implementer Subject Matter Expert Consulting

The JPI Group – Philadelphia, PA (September 2024 – Present)

- Building workforce development processes specific to the energy efficiency industry
- Conduct market assessments to assist business development strategy efforts

Home Performance Contractor Business Growth Consulting

MT Building Services, Inc. – Harrisburg, PA (July 2023 – Present)

- Provided consulting to a mid-sized home performance contractor on new client ramp-up.
- Analyzed job data and helped develop crew and auditor KPIs and bonus structure.

DSM Potential Studies in New York, New Jersey, and Pennsylvania

Optimal Energy, Inc. - Vermont (December 2018 – December 2019)

- Assisted Optimal Energy, Inc. with the development of measure assumptions and characterizations for statewide, electric and gas DSM potential studies.

Natural Gas Efficiency Options and EE&C Plan for Peoples Natural Gas

Peoples Natural Gas, Inc. – Pennsylvania (September 2017 – February 2019)

- Prepared report on program, sector, and portfolio-level cost and savings for 29 natural gas administrators in 11 States, and provided recommendations for potential natural gas DSM opportunities for Peoples Natural Gas and assist with stakeholder process.
- Developed five year \$42 million Energy Efficiency and Conservation (EE&C) Plan, and provided testimony to support the adoption of the Plan (ongoing).

Analytic and Technical Support for DSM Tracking Systems

PECO Energy Company – Pennsylvania

(September 2016 – December 2017)

Commonwealth Edison Company – Illinois

(August 2017 – August 2018)

Companywide

(September 2020 – December 2023)

- Subcontractor to ANB Systems Inc. to provide domain expertise and analytic support to rollout of enhanced tracking system.
- Developed dashboards and internal reports used by PECO's EM&V team, business planning, and various program and portfolio managers.
- Guided automation of PECO's six-month and annual reporting process.
- Provided expert guidance on the development of cost effectiveness calculation modules for clients in Pennsylvania and New Jersey
- Oversaw project development of audit tool for ComEd's Carbon Free School Assessment Program.

Technical Assistance for Energy Efficiency Program Planning

Green Mountain Power - Vermont

(August 2012 – July 2017)

- Developed multivariable regression model and framework to estimate the cost per kW to address a reliability gap in the St. Albans region with targeted energy efficiency.
- Reviewed and analyzed program proposals for the \$20 million Community Energy & Efficiency Development Fund (CEED Fund), including the development of scoring and rebalancing mechanisms;
- Analyzed dataset of 5,000 custom business projects to establish models used for future planning exercises.
- Prepared report on uncounted benefits of renewable generation sources for Vermont.

Analysis of Energy Efficiency in British Columbia

BC Sustainable Energy Association & Sierra Club BC, British Columbia (May 2011 – June 2014)

- Provided comments and energy efficiency opportunities report for proceedings on FortisBC Gas and Electric's long-term DSM plans in December of 2013.
- Assisted on research for direct testimony on reasonableness of gas DSM Plan by Fortis Energy Utilities before the British Columbia Utilities Commission, BCUC Project No. 3698627;
- Technical support on assessment of FortisBC Electric's long-term DSM plan and corresponding expert testimony;
- Assistance with direct testimony and technical support on assessment of BC Hydro's long-term DSM plan, before the BCUC.

Energy Efficiency Potential in Oklahoma

Sierra Club, *Oklahoma* (April 2011 – November 2011, December 2013 – January 2014)

- Provided updated report for energy efficiency in Oklahoma and additional comments on PUC rulemaking for electric and gas utility programs.
- Preparation of report on energy efficiency potential for Oklahoma;
- Assistance with research and drafting comments on the US regional haze Federal Implementation Plan for the State of Oklahoma;
- Research and formulation of energy efficiency potential projections provided as part of expert testimony for Oklahoma Gas & Electric's rate case before the Corporation Commission of Oklahoma, Cause No. PUD 201100087.

Technical Assistance for Energy Efficiency Programs

Focus on Energy - *Wisconsin*

(June 2011 – August 2013)

- Developed and customized cost-effectiveness calculators for Wisconsin's Focus on Energy portfolio of energy efficiency programs;
- Trained staff and other consultants on usage of tools and general economic analysis of energy efficiency programs;
- Provided QA/QC on cost-effectiveness analysis of 14 programs spending over \$160 million in two years.

Chicagoland Energy Efficiency Portfolio

People's Gas - *Chicago, Illinois*

(September 2008 – January 2013)

- Providing ongoing regulatory support;
- Provided cost-benefit analysis of various program scenarios and aided in the analysis of contractor bids;
- Customized excel-based portfolio and project cost-effectiveness tools to client's specifications.

Testimony Support for Expanding Gas Energy Efficiency in Pennsylvania

Citizens for Pennsylvania's Future, *Pennsylvania*

(July 2013 – September 2013)

- Provided support on preparation of testimony regarding Peoples Gas of Pennsylvania's DSM plans, including preparation of benchmarking report and alternative scenario projections.

Energy Efficiency Potential in Texas

Sierra Club, *Texas*

(May 2012 – August 2012)

- Research and development of alternative energy efficiency potential scenarios for the ten investor owned utilities (IOUs) in Texas;
- Development of comments for the Public Utility Commission of Texas;
- Development of presentation before the Energy Efficiency Incentive Program Committee.

Austin Energy's Energy Efficiency Potential

Austin City Council Consumer Advocate, *Austin, Texas*

(April 2012)

- Research and development of alternative energy efficiency potential scenarios for Austin Energy.

Nevada Power's Energy Efficiency Potential

Sierra Club, *Nevada*

(November 2011 – June 2012)

- Research on Nevada Power's Integrated Resource Plan (IRP) and development of alternative energy efficiency potential projections.

Comments on EmPower Maryland Programs

Sierra Club, *Maryland*

(September 2011 – October 2011)

- Research for and development of comments on EmPower Maryland's energy efficiency programs, including the development of alternative energy efficiency potential projections.

Ontario Power Authority Field Audit Support Tool

Green Communities Canada - *Ontario, Canada*

(January 2011 – May 2011)

- Collected and implemented specifications for updating the tool used by Ontario Power Authority's low-income program field agents to collect data and determine project net present values;
- Added custom features including customer input forms, saving and closing routines, and database file importing.

Energy Efficiency Potential in Arkansas

Sierra Club/Audubon Society, *Arkansas*

(September 2009 – March 2010)

- Research and drafting assistance for expert testimony on energy efficiency' as an alternative to the White Bluff Steam Electric Station before the Public Service Commission of Arkansas, Docket No. 09-024-U.

Training for NGOs Working on Energy Efficiency Projects in China

ISC and NRDC – *United States and China*

(August 2008 – September 2010)

- Developed training materials and provided remote and in-person training sessions on the economic and financial analysis of industrial retrofit projects for structuring and negotiating financial incentive offers to customers;
 - o Worked with the Institute for Sustainable Communities (ISC) to aid its efforts to promote energy efficiency in the Guangdong and Jiangsu Provinces (February 2009 – September 2010);
 - o Worked with the National Resource Defense Council (NRDC) to aid in its efforts in China, especially in conjunction with a \$100 million revolving loan fund from the Asia Development Bank (August 2008- January 2009).

Incentive Calculations for the Project Cost-effectiveness Analysis Tool (CAT)

Efficiency Vermont – *Burlington, Vermont*

(November 2008 – June 2010)

- Aided in the design of a new approach to calculating incentives for custom energy efficiency projects based on financing and reaching a desired rate of return;
- Modified CAT's cash-flow projection engine, an Excel VBA system, to accommodate the new approach to incentives.

Vermont's 20-year Forecast of Electricity Savings from Sustained Investment

Efficiency Vermont – Burlington, Vermont

(December 2008 – October 2009)

- Provided components of final report relating to long-term trends for the environment (climate change, land-use, and water-use), population growth, and governmental regulation;
- Provided additional technical support on electric demand-side savings potential.

Connecticut's Long Term Acquisition Plan

Connecticut Office of the Consumer Council – Connecticut

(August – October 2008)

- Provided research and support for expert testimony regarding long-range energy-efficiency procurement plan of the Energy Conservation Management Board, on behalf of the Connecticut Office of Consumer Counsel.

Energy Efficiency Plans of BC Hydro and Terasen Gas

BC Sustainable Energy Association and

The Sierra Club - British Columbia, Canada

(October 2008 – March 2009)

- Provided research and support for expert testimony and technical support on assessment of BC Hydro's long-term DSM plan, before the BCUC, on behalf of the BC Sustainable Energy Association and Sierra Club Canada (November 2008 – March 2009);
- Provided research and support for expert testimony on assessment of Terasen Gas conservation plans before the BCUC, on behalf of the BC Sustainable Energy Association and Sierra Club Canada (October 2008).

Testimony and Proceeding Participation

Forum	On Behalf Of	Docket/Matter	Date	Issues Addressed
Nova Scotia Utility and Review Board	The Consumer Advocate of Nova Scotia	Matter No. 12499 - NSP Application for 2025/26 Time Varying Pricing Tariff	October-25	Comments on design of interim TVP rate given service interruption
Maryland Public Service Commission	Maryland Office of Peoples Counsel	Case No. 9749 - Gas Company Pilot Thermal Energy Network System Proposals	August-25	Comments regarding rate design, cost-effectiveness, and technical aspects of pilot thermal energy networks. Benchmarking of program
Nova Scotia Utility and Review Board	The Consumer Advocate of Nova Scotia	Matter No. M10473 An Application by EfficiencyOne for Approval of a 2023 – 2025 Demand Side Management ("DSM") Resource Plan	May-25	Extension filing. Historic performance, affordability, addressing underserved communities, program design, and avoided costs

Forum	On Behalf Of	Docket/Matter	Date	Issues Addressed
Massachusetts Department of Public Utilities	Massachusetts Office of the Attorney General	D.P.U. 24-114 - Eversource Energy Geothermal Energy Provision Cost Recovery Filing	May-25	Review of costs and reasonableness of pilot project approach.
Massachusetts Department of Public Utilities	Massachusetts Office of the Attorney General	D.P.U. 24-140 through D.P.U. 24-149 - 2025-2027 Three-Year Energy Efficiency Plan	November-24	Policy, program and plan design. Heat pumps. Incentive design. Cost-effectiveness. Rate design.
California Public Utility Commission	Small Business Utility Advocates	Application 23-12-001 - PG&E Recovery of Expenditures for Wildfire Mitigation, Catastrophic Events, and other Recorded Costs (U 39 3)	November-24	Costs and reasonableness of wildfire mitigation approach.
Pennsylvania Public Utility Commission	UGI Gas Utilities Inc. – Gas Division	Docket No. M-2024-3048418 - Petition of UGI Gas for Approval of Phase II of its Energy Efficiency and Conservation Plan	April-24	Energy Efficiency & Conservation Plan Design Development and History.
Pennsylvania Public Utility Commission	Columbia Gas of Pennsylvania	Docket No. R-2024-3046519 - 2024 Rate Case Proceeding	March-24	Updates to Three-Year Energy Efficiency Plan
California Public Utility Commission	Small Business Utility Advocates	Application 23-05-010. Southern California Edison Company 2025 General Rate Case	February-24	Small Business Customer Engagement; Cost Recovery of Grid Hardening, Vegetation Management, Targeted Undergrounding; Environmental and Social Justice
Pennsylvania Public Utility Commission	Philadelphia Gas Works	Docket No. P-2014-2495362. Approval of Demand-Side Management Plan for FY 2024-2026	September-23	Historical performance. Plan design and cost-effectiveness.
Pennsylvania Public Utility Commission	UGI Utilities Inc. - Electric Division	Docket No.M-2023-3043230 . Petition of UGI Utilities, Inc. – Electric Division for Approval of Phase IV of its Energy Efficiency and Conservation Plan	September-23	Energy efficiency plan proposal, including projections for costs, savings, and cost-effectiveness.

Forum	On Behalf Of	Docket/Matter	Date	Issues Addressed
California Public Utility Commission	Small Business Utility Advocates	R. 22-02-005. Application of Pacific Gas and Electric Company for Approval of 2024-2031 Energy Efficiency Business Plan and 2024-2027 Portfolio Plan (U 39 M) and associated Matters.	October-22	Issues related to 3-year Energy Efficiency Business Plan
California Public Utility Commission	Small Business Utility Advocates	R. 22-02-005. Application of Pacific Gas and Electric Company for Approval of 2024-2031 Energy Efficiency Business Plan and 2024-2027 Portfolio Plan (U 39 M) and associated Matters.	September-22	Comments on the phase out of gas incentives.
Nova Scotia Utility and Review Board	The Consumer Advocate of Nova Scotia	Matter No. M10473 An Application by EfficiencyOne for Approval of a 2023 – 2025 Demand Side Management (“DSM”) Resource Plan	May-22	Historical performance of portfolio, proposed scenarios, affordability, addressing underserved communities, program design, and avoided costs.
Pennsylvania Public Utility Commission	Columbia Gas of Pennsylvania	Docket No. R-2022-3031211. Columbia Gas of Pennsylvania, Inc. 2022 Rate Case Proceeding	March-22	Three-year energy efficiency plan proposal, including projections for costs, savings, and cost-effectiveness.
Ontario Energy Board	Small Business utility Alliance	EB-2021-0002. Enbridge Gas Inc. – Multi Year Demand Side Management Plan (2022 – 2027)	December-21	Analysis of commercial program goals and program design
California Public Utility Commission	Small Business Utility Advocates	R. 21-02-014. Rulemaking to Address Energy Utility Customer Bill Debt Accumulated During the COVID-19 Pandemic.	April-21	Report on Analysis of Small Business Utility Bill Arrearages in California during COVID-19
Pennsylvania Public Utility Commission	Philadelphia Gas Works	P-2014-2459362, Petition of Philadelphia Gas Works for Approval of Demand-Side Management Plan for FY 2016-2020	October-20	Historical performance of PGW’s DSM Phase II Plan and modifications to program design.

Forum	On Behalf Of	Docket/Matter	Date	Issues Addressed
California Public Utility Commission	Small Business Utility Advocates	R. 20-08-022 to Investigate and Design Clean Energy Financing Options for Electricity and Natural Gas Customers	July-20	Comments to address options for small business customer
Nova Scotia Utility and Review Board	The Consumer Advocate of Nova Scotia	Matter No. M09096, Efficiency 1 (E1) Application for Approval of 2020 – 2022 Demand Side Management (DSM) Resource Plan	May-19	DSM Investment Levels and Affordability, Usage of Unspent Ratepayer Funding, Rate and Bill Impacts, Target Setting.
Pennsylvania Public Utility Commission	UGI Gas Utilities Inc. – Gas Division	R-2018-3006814, UGI Gas Utilities Inc. – Gas Division, Rate Case	January-19	Energy Efficiency & Conservation Plan and Total Resource Cost Implementation.
Pennsylvania Public Utility Commission	UGI Utilities, Inc. – Electric Division	M-2018-3004144, Petition of UGI Utilities, Inc. – Electric Division for Approval of Phase III of Its Energy Efficiency and Conservation Plan	August-18	Electric energy efficiency and conservation plan development, projections, implementation, and EM&V.
Pennsylvania Public Utility Commission	Peoples Natural Gas Company	M-2017-2640306, Petition of Peoples Natural Gas Company LLC for Approval of its Energy Efficiency and Conservation Plan	January-18	Energy efficiency study, energy efficiency & conservation plan, and total resource cost implementation.
Pennsylvania Public Utility Commission	UGI Penn Natural Gas, Inc	P-2016-2580030, UGI Penn Natural Gas, Inc. Rate Case	January-17	Energy efficiency & conservation plan and total resource cost implementation.
Pennsylvania Public Utility Commission	UGI Utilities, Inc.	P-2015-2518438, UGI Utilities, Inc.- Gas Division Rate Case	January-16	Energy efficiency & conservation plan and total resource cost implementation.
Pennsylvania Public Utility Commission	Philadelphia Gas Works	P-2014-2459362, Philadelphia Gas Works Demand-Side Management Plan for FY 2016-2021	May-15	Analysis of Phase I DSM Plan and design of Phase II DSM Plan.

Publications

Love, Theodore. J. Nunley. “Using Smart Thermostats to Engage Residential Customers and Drive Comprehensive Retrofit Projects” In *Proceedings of the ACEEE 2020 Summer Study*

on Energy Efficiency in Buildings, Washington, D.C.: American Council for an Energy Efficient Economy.

Love, Theodore. "The Future for Residential Gas Efficiency is Combined". *Strategies*. Association of Energy Service Professionals. January 11, 2019.

Love, Theodore. "Using Open Data to Predict Energy Usage: What tax lot data can tell us about energy usage intensity in New York City". *Behavior Energy, and Climate Change Conference 2015*. Sacramento, CA

Plunkett, John, Theodore Love, Francis Wyatt. "An Empirical Model for Predicting Electric Energy Efficiency Acquisition Costs in North America: Analysis and Application". In *Proceedings of the ACEEE 2012 Summer Study on Energy Efficiency in Buildings*, #906, Washington, D.C.: American Council for an Energy Efficient Economy.

Gold, Elliott, Marie-Claire Munnely, Theodore Love, John Plunkett, Francis Wyatt. "Comprehensive and Cost-Effective: A Natural Gas Utility's Approach to Deep Natural Gas Retrofits for Low Income Customers." In *Proceedings of the ACEEE 2012 Summer Study on Energy Efficiency in Buildings*, #442, Washington, D.C.: American Council for an Energy Efficient Economy.

Education

Clark University – Worcester, MA

B.A. Magna cum Laude, *Mathematics and Computer Science*, 2006.

Study Abroad Program, Spring Semester 2005 (Kansai Gaidai University: Osaka Japan)

General Assembly: New York City, NY

Data Science Intensive Course, 2015