

Colton Appendices

Appendix A: Colton vitae

ROGER D. COLTON

BUSINESS ADDRESS: Fisher Sheehan & Colton
Public Finance and General Economics
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EDUCATION:

J.D. (Order of the Coif), University of Florida (1981)

M.A. (Economics), McGregor School, Antioch University (1993)

B.A. Iowa State University (1975) (journalism, political science, speech)

PROFESSIONAL EXPERIENCE:

Fisher, Sheehan and Colton, Public Finance and General Economics: 1985 - present.

As a co-founder of this economics consulting partnership, Colton provides services in a variety of areas, including: regulatory economics, poverty law and economics, public benefits, fair housing, community development, energy efficiency, utility law and economics (energy, telecommunications, water/sewer), government budgeting, and planning and zoning.

Colton has testified in state and federal courts in the United States and Canada, as well as before regulatory and legislative bodies in more than three dozen states. He is particularly noted for creative program design and implementation within tight budget constraints.

Commentator: Belmont Citizen-Herald: 2014 – present

Author of biweekly “Community Conversations” column for Belmont Citizen-Herald, weekly newspaper (June 2014 to present).

Host of biweekly “Community Conversations” podcast, Belmont Citizen-Herald, BMC Podcast Network (October 2016 to present)

National Consumer Law Center (NCLC): 1986 - 1994

As a staff attorney with NCLC, Colton worked on low-income energy and utility issues. He pioneered cost-justifications for low-income affordable energy rates, as well as developing models to quantify the non-energy benefits (*e.g.*, reduced credit and collection costs, reduced working capital) of low-income energy efficiency. He designed and implemented low-income affordable rate and fuel

assistance programs across the country. Colton was charged with developing new practical and theoretical underpinnings for solutions to low-income energy problems.

Community Action Research Group (CARG): 1981 - 1985

As staff attorney for this non-profit research and consulting organization, Colton worked primarily on energy and utility issues. He provided legal representation to low-income persons on public utility issues; provided legal and technical assistance to consumer and labor organizations; and provided legal and technical assistance to a variety of state and local governments nationwide on natural gas, electric, and telecommunications issues. He routinely appeared as an expert witness before regulatory agencies and legislative committees regarding energy and telecommunications issues.

PROFESSIONAL AFFILIATIONS:

Member: Board of Directors, Massachusetts Rivers Alliance
Columnist: Belmont Citizen-Herald
Producer: Belmont Media Center: BMC Podcast Network
Host: Belmont Media Center: Belmont Journal
Member: Belmont Town Meeting
Vice-chair: Belmont Light General Manager Screening Committee
Chair: Belmont Goes Solar
Coordinator: BelmontBudget.org (Belmont's Community Budget Forum)
Coordinator: Belmont Affordable Shelter Fund (BASF)
Chair: Belmont Solar Initiative Oversight Committee
Member: City of Detroit Blue Ribbon Panel on Water Affordability
Chair: Belmont Energy Committee
Member: Massachusetts Municipal Energy Group (Mass Municipal Association)
Past Chair: Housing Work Group, Belmont (MA) Comprehensive Planning Process
Past Member: Board of Directors, Belmont Housing Trust, Inc.
Past Chair: Waverley Square Fire Station Re-use Study Committee (Belmont MA)
Past Member: Belmont (MA) Energy and Facilities Work Group
Past Member: Belmont (MA) Uplands Advisory Committee
Past Member: Advisory Board: Fair Housing Center of Greater Boston.
Past Chair: Fair Housing Committee, Town of Belmont (MA)
Past Member: Aggregation Advisory Committee, New York State Energy Research and Development Authority.
Past Member: Board of Directors, Vermont Energy Investment Corporation.
Past Member: Board of Directors, National Fuel Funds Network
Past Member: Board of Directors, Affordable Comfort, Inc. (ACI)
Past Member: National Advisory Committee, U.S. Department of Health and Human Services, Administration for Children and Families, Performance Goals for Low-Income Home Energy Assistance.
Past Member: Editorial Advisory Board, International Library, *Public Utility Law Anthology*.

- Past Member: ASHRAE Guidelines Committee, GPC-8, *Energy Cost Allocation of Comfort HVAC Systems for Multiple Occupancy Buildings*
- Past Member: National Advisory Committee, U.S. Department of Housing and Urban Development, Calculation of Utility Allowances for Public Housing.
- Past Member: National Advisory Board: Energy Financing Alternatives for Subsidized Housing, New York State Energy Research and Development Authority.

PROFESSIONAL ASSOCIATIONS:

National Association of Housing and Redevelopment Officials (NAHRO)
National Society of Newspaper Columnists (NSNC)
Association for Enterprise Opportunity (AEO)
Iowa State Bar Association
Energy Bar Association
Association for Institutional Thought (AFIT)
Association for Evolutionary Economics (AEE)
Society for the Study of Social Problems (SSSO)
International Society for Policy Studies
Association for Social Economics

BOOKS

- Colton, *et al.*, *Access to Utility Service*, National Consumer Law Center: Boston (4th edition 2008).
- Colton, *et al.*, *Tenants' Rights to Utility Service*, National Consumer Law Center: Boston (1994).
- Colton, *The Regulation of Rural Electric Cooperatives*, National Consumer Law Center: Boston (1992).

JOURNAL PUBLICATIONS

- Colton (March 2015). Quality Assurance: Evaluating Glare from Roof-Mounted PV Arrays, *Solar Professional*.
- Colton (January 2015). "Assessing Solar PV Glare In Dense Residential Neighborhoods." *Solar Industry*.
- Colton (January 2015). "Owning up to the Problem: Limiting the Use of an Assets Test for Determining Home Energy Assistance Eligibility." *Clearinghouse Review*.
- Colton (November 2003). "Winter Weather Payments: The Impact of Iowa's Winter Utility Shutoff Moratorium on Utility Bill Payments by Low-Income Customers." 16(9) *Electricity Journal* 59.
- Colton (March 2002). "Energy Consumption and Expenditures by Low-Income Households," 15(3) *Electricity Journal* 70.

Colton, Roger and Stephen Colton (Spring 2002). "An Alternative to Regulation in the Control of Occupational Exposure to Tuberculosis in Homeless Shelters," *New Solutions: Journal of Environmental and Occupational Health Policy*.

Colton (2001). "The Lawfulness of Utility Actions Seeking to Impose as a Condition of Service Liability for a Roommate's Debt Incurred at a Prior Address," *Clearinghouse Review*.

Colton (2001). "Limiting The "Family Necessaries" Doctrine as a Means of Imposing Third Party Liability for Utility Bills," *Clearinghouse Review*.

Colton (2001). "Prepayment Utility Meters and the Low-Income Consumer." *Journal of Housing and Community Development Law* (American Bar Association).

Colton, Brown and Ackermann (June 2000). "Mergers and the Public Interest: Saving the Savings for the Poorest Customers." *Public Utilities Fortnightly*.

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Colton. (1998). "Supportive Housing Facilities as "Low-Income Residential" Customers for Energy Efficiency Purposes," 7 *Journal of Housing and Community Development Law* 406 (American Bar Association).

Colton, Frisof and King. (1998). "Lessons for the Health Care Industry from America's Experience with Public Utilities." 18 *Journal of Public Health Policy* 389.

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Colton, (1997). "Competition Comes to Electricity: Industry Gains, People and the Environment Lose," *Dollars and Sense*.

Colton (1996). "The Road Oft Taken: Unaffordable Home Energy Bills, Forced Mobility And Childhood Education in Missouri." 2 *Journal on Children and Poverty* 23.

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Colton and Labella. (1995). "Landlord Failure to Resolve Shared Meter Problems Breaches Tenant's Right to Quiet Enjoyment." 29 *Clearinghouse Review* 536.

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Colton. (1995). "The Perverse Incentives of Fair Market Rents." 52 *Journal of Housing and Community Development* 6.

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Colton (1994). "The Use of Consumer Credit Reports in Establishing Creditworthiness for Utility Deposits." *Clearinghouse Review*.

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Colton and Sheehan. (1992). "Mobile Home Rent Control: Protecting Local Regulation," *Land Use Law and Zoning Digest*.

Colton and Smith. (1992 - 1993). "Co-op Membership and Utility Shutoffs: Service Protections that Arise as an Incident of REC `Membership.'" 29 *Idaho Law Review* 1, reprinted, XV *Public Utilities Law Anthology* 451.

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Colton. (1991). "Protecting Against the Harms of the Mistaken Utility Undercharge." 39 *Washington University Journal of Urban and Contemporary Law* 99, reprinted, XIV *Public Utilities Anthology* 787.

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Colton (1977). "The Case for a Broad Construction of 'Use' in Section 4(f) of the Department of Transportation Act." 21 *St. Louis Law Journal* 113.

Colton (1984). "Prudence, Planning and Principled Ratemaking." 35 *Hastings Law Journal* 721.

Colton (1983). "Excess Capacity: Who Gets the Charge from the Power Plant?" 33 *Hastings Law Journal* 1133.

Colton (1983). "Old McDonald (Inc.) Has a Farm. . . Maybe, or Nebraska's Corporate Farm Ban; Is it Constitutional?" 6 *University of Arkansas at Little Rock Law Review* 247.

OTHER PUBLICATIONS

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Colton (2015). *Re-Sequencing Posting Utility Bill Payments: A Case Study Involving Philadelphia Gas Works*.

Colton (2015). *State Legislative Steps to Implement the Human Right to Water in California*, prepared for the Unitarian Universalist Service Committee (Cambridge MA).

Colton (2014). *The 2014 Home Energy Affordability Gap: Connecticut*, prepared for Operation Fuel, (Bloomfield, CT).

Colton (2014). *The Equity of Efficiency: Distributing Utility Usage Reduction Dollars for Affordable Multi-family Housing*, prepared for the Natural Resources Defense Council (New York, NY).

Colton (2014). *Assessing Rooftop Solar PV Glare in Dense Urban Residential Neighborhoods: Determining Whether and How Much of a Problem*, submitted to American Planning Association: Chicago (IL).

Colton (2013). *White Paper: Utility Communications with Residential Customers and Vulnerable Residential Customers In Response to Severe Weather-Related Outages*, prepared for Pennsylvania Office of Consumer Advocate.

Colton (2013). *Massachusetts Analysis of Impediments to Fair Housing: Fiscal Zoning and the "Childproofing" of a Community*, presented to Massachusetts Department of Housing and Community Development.

Colton (2013). *Home Energy Affordability in New York: The Affordability Gap (2012)*, prepared for New York State Energy Research and Development Authority (NYSERDA).

Colton (2013). *Home Energy Affordability in Connecticut: The Affordability Gap (2012)*, prepared for Operation Fuel (Bloomfield, CT).

Colton (2013). *Owning up to the Problem: Limiting the Use of an Assets Test for Determining Home Energy Assistance Eligibility*.

Colton (2013). *Privacy Protections for Consumer Information Held by Minnesota Rate-Regulated Utilities*, prepared for Legal Services Advocacy Project (St. Paul, MN).

Colton (2013). *Proposal for the Use of Pervious Pavement for Repaving the Belmont High School Parking Lot*, prepared for Sustainable Belmont: Belmont (MA).

Colton (2012). *Home Energy Affordability in New York: 2011*, prepared for the New York State Energy Research and Development Authority (NYSERDA) (Albany NY).

Colton (2012). *A Fuel Assistance Tracking Mechanism: Measuring the Impact of Changes in Weather and Prices on the Bill Payment Coverage Capacity of LIHEAP*, prepared for Iowa Department of Human Rights: Des Moines (IA).

Colton (2012). *Home Energy Affordability Gap: 2012: Connecticut Legislative Districts*, prepared for Operation Fuel (Bloomfield, CT).

Colton (2012). *Attributes of Massachusetts Gas/Electric Arrearage Management Programs (AMPS): 2011 Program Year*, prepared for Fisher, Sheehan & Colton, Public Finance and General Economics, Belmont (MA).

Colton (2012). *Customer and Housing Unit Characteristics in the Fitchburg Gas and Electric Service Territory*, prepared for Unitil Corporation, d/b/a Fitchburg Gas and Electric Company (Portsmouth, NH).

Colton (2012). *Public Service Company of Colorado's (PSCO) Pilot Energy Assistance Program (PEAP) and Electric Assistance Program (EAP) 2011 Final Evaluation Report*, prepared for Xcel Energy (Denver CO).

Colton (2012). *Home Energy Affordability Gap: 2011: Connecticut Legislative Districts*, prepared for Operation Fuel (Bloomfield, CT).

Colton (2011). *Home Energy Affordability in Idaho: Low-Income Energy Affordability Needs and Resources*, prepared for Community Action Partnership of Idaho (Boise, ID).

Colton (2011). *Home Energy Affordability Gap in New York*, prepared for the New York State Energy Research Development Authority (NYSERDA) (Albany, NY).

Colton (2011). *Home Energy Affordability Gap: 2010: Connecticut Legislative Districts*, prepared for Operation Fuel (Bloomfield, CT).

Colton (2011). *Section 8 Utility Allowances and Changes in Home Energy Prices in Pennsylvania*, prepared for Pennsylvania Utility Law Project: Harrisburg (PA).

Colton (2010). *Interim Report on Xcel Energy's Pilot Energy Assistance Program*, prepared for Xcel Energy (Denver, CO).

Colton (2010). *Home Energy Affordability Gap: 2009: Connecticut Legislative Districts*, prepared for Operation Fuel (Bloomfield, CT).

Colton (2010). *Home Energy Affordability in Manitoba: A Low-Income Affordability Program for Manitoba Hydro*, prepared for Resource Conservation of Manitoba, Winnipeg (MAN).

Colton (2009). *Mirror, Mirror on the Wall: How Well Does Belmont's Town Meeting Reflect the Community at Large*, prepared for Fisher, Sheehan & Colton, Public Finance and General Economics, Belmont (MA).

Colton (2009). *An Outcomes Planning Approach to Serving TPU Low-Income Customers*, prepared for Tacoma Public Utilities, Tacoma (WA).

Colton (2009). *An Outcome Evaluation of Indiana's Low-Income Rate Affordability Programs: 2008 – 2009*, prepared for Citizens Gas and Coke Utility, Northern Indiana Public Service Company, Vectren Energy Delivery Indianapolis (IN).

Roger Colton (2009). *The Earned Income Tax Credit (EITC) as "Energy Assistance" in Pennsylvania*, prepared for Pennsylvania Utility Law Project (PULP).

Colton (2009). *Energy Efficiency as a Homebuyer Affordability Tool in Pennsylvania*, prepared for Pennsylvania Utility Law Project, Harrisburg (PA).

Colton (2009). *Energy Efficient Utility Allowances as a Usage Reduction Tool in Pennsylvania*, prepared for Pennsylvania Utility Law Project, Harrisburg (PA).

Colton (2009). *Home Energy Consumption Expenditures by Income (Pennsylvania)*, prepared for Pennsylvania Utility Law Project, Harrisburg (PA).

Colton (2009). *The Contribution of Utility Bills to the Unaffordability of Low-Income Rental Housing in Pennsylvania*, prepared for Pennsylvania Utility Law Project, Harrisburg (PA).

Colton (2009). *The Integration of Federal LIHEAP Benefits with Ratepayer-Funded Percentage of Income Payment Programs (PIPPs): Legal and Policy Questions Involving the Distribution of Benefits*, prepared for Pennsylvania Office of Consumer Advocate, Harrisburg (PA).

Colton (2008). *Home Energy Affordability in Indiana: Current Needs and Future Potentials*, prepared for Indiana Community Action Association.

Colton (2008). *Public Health Outcomes Associated with Energy Poverty: An Analysis of Behavioral Risk Factor Surveillance System (BRFSS) Data from Iowa*, prepared for Iowa Department of Human Rights.

Colton (2008). *Indiana Billing and Collection Reporting: Natural Gas and Electric Utilities: 2007*, prepared for Coalition to Keep Indiana Warm.

Colton (2008). *Inverted Block Tariffs and Universal Lifeline Rates: Their Use and Usability in Delivering Low-Income Electric Rate Relief*, prepared for Hydro-Quebec.

Colton (2007). *Best Practices: Low-Income Affordability Programs, Articulating and Applying Rating Criteria*, prepared for Hydro-Quebec.

Colton (2007). *An Outcome Evaluation of Indiana's Low-Income Rate Affordability Programs*, performed for Citizens Gas & Coke Utility, Vectren Energy Delivery, Northern Indiana Public Service Company.

Colton (2007). *A Multi-state Study of Low-Income Programs*, in collaboration with Apprise, Inc., prepared for multiple study sponsors.

Colton (2007). *The Law and Economics of Determining Hot Water Energy Use in Calculating Utility Allowances for Public and Assisted Housing*.

Colton (2007). *Comments of Belmont Housing Trust on Energy Conservation Standards for Residential Furnaces and Boilers*, Belmont Housing Trust (Belmont MA).

Colton (2006). *Indiana Billing and Collection Reporting: Natural Gas and Electric Utilities: 2006*, prepared for Coalition to Keep Indiana Warm.

Colton (2006). *Home Energy Affordability in Maryland: Necessary Regulatory and Legislative Actions*, prepared for the Maryland Office of Peoples Counsel.

Colton (2006). *A Ratepayer Funded Home Energy Affordability Program for Low-Income Households: A Universal Service Program for Ontario's Energy Utilities*, prepared for the Low-Income Energy Network (Toronto).

Colton (2006). *Georgia REACH Project Energize: Final Program Evaluation*, prepared for the Georgia Department of Human Resources.

Colton (2006). *Experimental Low-Income Program (ELIP): Empire District Electric Company, Final Program Evaluation*, prepared for Empire District Electric Company.

Colton (2006). *Municipal Aggregation for Retail Natural Gas and Electric Service: Potentials, Pitfalls and Policy Implications*, prepared for Maryland Office of Peoples Counsel.

Colton (2005). *Indiana Billing and Collection Reporting: Natural Gas and Electric Utilities: 2005*, prepared for Coalition to Keep Indiana Warm.

Colton (2005). *Impact Evaluation of NIPSCO Winter Warmth Program*, prepared for Northern Indiana Public Service Company.

Colton (2005). *A Water Affordability Program for the Detroit Water and Sewer Department*, prepared for Michigan Poverty Law Center.

Colton (2004). *Paid but Unaffordable: The Consequences of Energy Poverty in Missouri*, prepared for the National Low-Income Home Energy Consortium.

Sheehan and Colton (2004). *Fair Housing Plan: An Analysis of Impediments and Strategies on How to Address Them: Washington County/Beaverton (OR)*, prepared for Washington County Department of Community Development.

Colton (2004). *Controlling Tuberculosis in Fulton County (GA) Homeless Shelters: A Needs Assessment*, prepared for the Georgia Department of Human Resources, Division of Public Health.

Colton (2003). *The Impact of Missouri Gas Energy's Experimental Low-Income Rate (ELIR) On Utility Bill Payments by Low-Income Customers: Preliminary Assessment*, prepared for Missouri Gas Energy.

Colton (2003). *The Economic Development Impacts of Home Energy Assistance: The Entergy States*, prepared for Entergy Services, Inc.

Colton (2003). *Energy Efficiency as an Affordable Housing Tool in Colorado*, prepared for Colorado Energy Assistance Foundation.

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Colton (2002). *Low-Income Home Energy Affordability in Maryland*, prepared for Office of Peoples Counsel.

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Colton (2001). *In Harm's Way: Home Heating, Fire Hazards, and Low-Income Households*, prepared for National Fuel Funds Network.

Colton (2001). *Structuring Low-income Affordability Programs Funded through System Benefits Charges: A Case Study from New Hampshire*, prepared for Oak Ridge National Laboratory.

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Colton (2001). *Reducing Energy Distress: "Seeing RED" Project Evaluation* (evaluation of Iowa REACH project), prepared for Iowa Department of Human Rights.

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COLTON EXPERIENCE AS EXPERT WITNESS

1988 – PRESENT

| CASE NAME | CLIENT NAME | Docket No. (if available) | TOPIC | JURIS. | YEAR |
|---|---|-------------------------------|--|---------------|------|
| I/M/O Pittsburgh Water and Sewer Authority | Office of Consumer Advocate | R-2018-3002645/3002647 (cons) | Customer service / Low-income cost recovery | Pennsylvania | 18 |
| I/M/O National Grid (electric) | Division of Public Utility Control | Docket No. 4770 | Customer service / Low-income cost recovery | Rhode Island | 18 |
| I/M/O Columbia Gas Company | Office of Consumer Advocate | R-2018-2647577 | Customer service / Low-income cost recovery | Pennsylvania | 18 |
| I/M/O PECO (electric) | Office of Consumer Advocate | R-2018-3000164 | Customer service / Low-income cost recovery | Pennsylvania | 18 |
| i/N/O Duquesne Light Company | Office of Consumer Advocate | R-2018-3000124 | Customer service / Low-income cost recovery | Pennsylvania | 18 |
| I/M/O UGI-Electric | Office of Consumer Advocate | R-2017-2640058 | Customer service / Low-income cost recovery | Pennsylvania | 18 |
| I/M/O Philadelphia Water Department requested rates for 2019 - 2021 | Philadelphia Public Advocate | None | Water rate:: low-income program cost recovery / public fire protection / storm water charge exemptions | Philadelphia | 18 |
| I/M/O Commonwealth Edison Prepayment Meters | Illinois Office of Attorney General | 17-0837 | Electric customer service | Illinois | 18 |
| I/M/O 2018/2020 Statewide Energy Efficiency Plan | The Way Home / New Hampshire Legal Assistance | DE 17-136 | Non-energy impacts / Low-income energy efficiency | New Hampshire | 17 |
| I/M/O DTE (electric) / gas EWR (energy waste reduction) plan | Sierra Club / Natural Resources Defense Council | Case No. U-18262 | Low-income energy efficiency | Michigan | 17 |
| I/M/O DTE (electric) | Sierra Club / Natural Resources Defense Council | Case No. U-18255 | Low-income energy efficiency | Michigan | 17 |
| I/M/O Merger of AltaGas and WGL Holdings | Office of People's Counsel | Case No. 9449 | Low-income / charitable contributions / community impacts | Maryland | 17 |
| I/M/O Philadelphia Gas Works | Office of Consumer Advocate | R-2017-2587783 | Low-income / rate design | Pennsylvania | 17 |

| CASE NAME | CLIENT NAME | Docket No. (if available) | TOPIC | JURIS. | YEAR |
|---|---------------------------------------|---|---|-----------------------|------|
| I/M/O UGI-Peoples Natural Gas | Office of Consumer Advocate | R-2016-2580030 | Low-income | Pennsylvania | 17 |
| I/M/O Peoples Natural Gas | Office of Attorney General | 16-0376 | Low-income | Illinois | 17 |
| I/M/O UGI-PNG | Office of Consumer Advocate | R-2016-2580030 | Rate design/EE&CP/Low-Income | Pennsylvania | 17 |
| I/M/O Pacific Gas and Electric Company | TURN | 15-09-001 | Electric bill affordability | California | 16 |
| I/M/O FirstEnergy Companies (Met Ed, Penelec, PennPower, West Penn Power) | Office of Consumer Advocate | R-2016-2537349, R-2016-2537352, R-2016-2537355, R-2016-2537359 (consolidated) | Rate design / low-income program cost recovery | Pennsylvania | 16 |
| I/M/O PGW Demand Side Management | Office of Consumer Advocate | P-2014-2459362 | Demand Side Management | Pennsylvania | 16 |
| I/M/O Columbia Gas of Pennsylvania | Office of Consumer Advocate | R-2016-2529660 | Rate design / customer service / Low-income program cost recovery | Pennsylvania | 16 |
| I/M/O Philadelphia Water Department | Public Advocate, City of Philadelphia | N/A | Low-income program design | Philadelphia | 16 |
| I/M/O UGI Gas | Office of Consumer Advocate | M-2015-2518438 | Rate design, energy efficiency, customer service | Pennsylvania | 16 |
| Keener v. Consumers Energy | Keener (plaintiff) | 15-146908-NO | Collections | State District Ct--MI | 16 |
| I/M/O Energy Efficiency and Conservation Plan, Phase III, PECO Energy | Office of Consumer Advocate | M-2015-2515691 | Multi-Family Energy Efficiency | Pennsylvania | 16 |
| I/M/O Energy Efficiency and Conservation Plan, Phase III, Duquesne Light Company | Office of Consumer Advocate | M-2015-2515375 | Multi-Family Energy Efficiency | Pennsylvania | 16 |
| I/M/O Energy Efficiency and Conservation Plan, Phase III, FirstEnergy Companies (Metropolitan Edison, Penelec, Penn Power, West Penn Power) | Office of Consumer Advocate | M-2015-2514767; M-2015-2514768; M-2015-2514769; M-2015-2514772 | Multi-Family Energy Efficiency | Pennsylvania | 16 |
| I/M/O Energy Efficiency and Conservation Plan, Phase III, PPL | Office of Consumer Advocate | M-2015-251-2515642 | Multi-Family Energy Efficiency | Pennsylvania | 16 |

| CASE NAME | CLIENT NAME | Docket No. (if available) | TOPIC | JURIS. | YEAR |
|--|-------------------------------|-----------------------------------|--|-------------------------------|---------|
| Electric Corporation | | | | | |
| I/M/O BC Hydro | Public Interest Action Centre | N/A | Rate design / terms and conditions / energy efficiency | British Columbia | 15 - 16 |
| Augustin v. Philadelphia Gas Works | Augustin (Plaintiffs) | 2:14—cv-04238 | Constitutional notice issues | U.S. District Court (E.D. PA) | 15 |
| I/M/O PPL Utilities | Office of Consumer Advocate | R-2015-2469275 | Rate design / customer service | Pennsylvania | 15 |
| I/M/O Columbia Gas Company | Office of Consumer Advocate | R-2015-2468056 | Rate design / customer service | Pennsylvania | 15 |
| I/M/O PECO Energy Company | Office of Consumer Advocate | R-2015-2468981 | Rate design / customer service | Pennsylvania | 15 |
| I/M/O Philadelphia Gas Works | Office of Consumer Advocate | P-2014-2459362 | Demand Side Management | Pennsylvania | 15 |
| I/M/O SBG Management v. Philadelphia Gas Works | SBG Management | C-2012-2308454 | Customer service | Pennsylvania | 15 |
| I/M/O Manitoba Hydro | Resource Action Centre | | Low-income affordability | Manitoba | 15 |
| I/M/O FirstEnergy Companies (Met Ed, WPP, Penelec, Penn Power) | Office of Consumer Advocate | R-2014-2428742 (8743, 8744, 8745) | Rate design / customer service / storm communications | Pennsylvania | 14 |
| I/M/O Xcel Energy Company | Energy CENTS Coalition | E002/GR-13-868 | Rate design / energy conservation | Minnesota | 14 |
| I/M/O Peoples Gas Light and Coke Company / North Shore Gas | Office of Attorney General | 14-0224 / 14--0225 | Rate design / customer service | Illinois | 14 |
| I/M/O Columbia Gas of Pennsylvania | Office of Consumer Advocate | R-2014-2406274 | Rate design / customer service | Pennsylvania | 14 |
| I/M/O Duquesne Light Company Rates | Office of Consumer Advocate | R-2013-2372129 | Rate design / customer service / storm communications | Pennsylvania | 13 |
| I/M/O Duquesne Light Company Universal Service | Office of Consumer Advocate | M-2013-2350946 | Low-income program design | Pennsylvania | 13 |
| I/M/O Peoples-TWP | Office of Consumer Advocate | P-2013-2355886 | Low-income program design / rate design | Pennsylvania | 13 |

| CASE NAME | CLIENT NAME | Docket No. (if available) | TOPIC | JURIS. | YEAR |
|--|---------------------------------|---------------------------|--|-----------------|------|
| I/M/O PECO CAP Shopping Plan | Office of Consumer Advocate | P-2013-2283641 | Retail shopping | Pennsylvania | 13 |
| I/M/O PECO Universal Service Programs | Office of Consumer Advocate | M-201202290911 | Low-income program design | Pennsylvania | 13 |
| I/M/O Privacy of Consumer Information | Legal Services Advocacy Project | CI-12-1344 | Privacy of SSNs & consumer information | Minnesota | 13 |
| I/M/O Atlantic City Electric Company | Division of Rate Counsel | BPU-12121071 | Customer service / Storm communications | New Jersey | 13 |
| I/M/O Jersey Central Power and Light Company | Division of Rate counsel | BPU-12111052 | Customer service / Storm communications | New Jersey | 13 |
| I/M/O Columbia Gas Company | Office of Consumer Advocate | R-2012-2321748 | Universal service | Pennsylvania | 13 |
| I/M/O Public Service Company of Colorado Low-Income Program Design | Xcel Energy d/b/a PSCo | 12A--EG | Low-income program design / cost recovery | Colorado | 12 |
| I/M/O Philadelphia Water Department. | Philadelphia Public Advocate | No. Docket No. | Customer service | Philadelphia | 12 |
| I/M/O PPL Electric Power Corporation | Office of Consumer Advocate | R-2012-2290597 | Rate design / low-income programs | Pennsylvania | 12 |
| I/M/O Peoples Natural Gas Company | Office of Consumer Advocate | R-2012-2285985 | Rate design / low-income programs | Pennsylvania | 12 |
| I/M/O Merger of Constellation/Exelon | Office of Peoples Counsel | CASE 9271 | Customer Service | Maryland | 11 |
| I/M/O Duke Energy Carolinas | North Carolina Justice Center | E-7, SUB-989 | Customer service/low-income rates | North Carolina | 11 |
| Re. Duke Energy/Progress Energy merger | NC Equal Justice foundation | E-2, SUB 998 | Low-income merger impacts | North Carolina | 11 |
| Re. Atlantic City Electric Company | Division of Rate Counsel | ER1186469 | Customer Service | New Jersey | 11 |
| Re. Camelot Utilities | Office of Attorney General | 11-0549 | Rate shock | Illinois | 11 |
| Re. UGI—Central Penn Gas | Office of Consumer Advocate | R-2010-2214415 | Low-income program design/cost recovery | Pennsylvania | 11 |
| Re. National Fuel Gas | Office of Consumer Advocate | M-2010-2192210 | Low-income program cost recovery | Pennsylvania | 11 |
| Re. Philadelphia Gas Works | Office of Consumer Advocate | P-2010-2178610 | Program design | Pennsylvania | 11 |
| Re. PPL | Office of Consumer Advocate | M-2010-2179796 | Low-income program cost recovery | Pennsylvania | 11 |
| Re. Columbia Gas Company | Office of Consumer Advocate | R-2010-2215623 | Rate design/Low-income program cost recovery | Pennsylvania | 11 |
| Crowder et al. v. Village of Kauffman | Crowder (plaintiffs) | 3:09-CV-02181-M | Section 8 utility allowances | Texas Fed Court | 11 |

| CASE NAME | CLIENT NAME | Docket No. (if available) | TOPIC | JURIS. | YEAR |
|---|--------------------------------------|---------------------------|---|---------------|------|
| I/M/O Peoples Natural Gas Company. | Office of Consumer Advocate | T-2010-220172 | Low-income program design/cost recovery | Pennsylvania | 11 |
| I/M/O Commonwealth Edison | Office of Attorney General | 10-0467 | Rate design/revenue requirement | Illinois | 10 |
| I/M/O National Grid d/b/a Energy North | NH Legal Assistance | DG-10-017 | Rate design/revenue requirement | New Hampshire | 10 |
| I/M/O Duquesne Light Company | Office of Consumer Advocate | R-2010-2179522 | Low-income program cost recovery | Pennsylvania | 10 |
| I/M/O Avista Natural Gas Corporation | The Opportunity Council | UE-100467 | Low-income assistance/rate design | Washington | 10 |
| I/M/O Manitoba Hydro | Resource Conservation Manitoba (RCM) | CASE NO. 17/10 | Low-income program design | Manitoba | 10 |
| I/M/O TW Phillips | Office of Consumer Advocate | R-2010-2167797 | Low-income program cost recovery | Pennsylvania | 10 |
| I/M/O PECO Energy—Gas Division | Office of Consumer Advocate | R-2010-2161592 | Low-income program cost recovery | Pennsylvania | 10 |
| I/M/O PECO Energy—Electric Division | Office of Consumer Advocate | R-2010-2161575 | Low-income program cost recovery | Pennsylvania | 10 |
| I/M/O PPL Energy | Office of Consumer Advocate | R-2010-2161694 | Low-income program cost recovery | Pennsylvania | 10 |
| I/M/O Columbia Gas Company | Office of Consumer Advocate | R-2009-2149262 | Low-income program design/cost recovery | Pennsylvania | 10 |
| I/M/O Atlantic City Electric Company | Office of Rate Council | R09080664 | Customer service | New Jersey | 10 |
| I/M/O Philadelphia Gas Works | Office of Consumer Advocate | R-2009-2139884 | Low-income program cost recovery | Pennsylvania | 10 |
| I/M/O Philadelphia Gas Works | Office of Consumer Advocates | R-2009-2097639 | Low-income program design | Pennsylvania | 10 |
| I/M/O Xcel Energy Company | Xcel Energy Company (PSCo) | 085-146G | Low-income program design | Colorado | 09 |
| I/M/O Atmos Energy Company | Atmos Energy Company | 09AL-507G | Low-income program funding | Colorado | 09 |
| I/M/O New Hampshire CORE Energy Efficiency Programs | New Hampshire Legal Assistance | D-09-170 | Low-income efficiency funding | New Hampshire | 09 |
| I/M/O Public Service Company of New Mexico (electric) | Community Action of New Mexico | 08-00273-UT | Rate Design | New Mexico | 09 |
| I/M/O UGI Pennsylvania Natural Gas Company (PNG) | Office of Consumer Advocate | R-2008-2079675 | Low-income program | Pennsylvania | 09 |
| I/M/O UGI Central Penn Gas Company (CPG) | Office of Consumer Advocate | R-2008-2079660 | Low-income program | Pennsylvania | 09 |
| I/M/O PECO Electric (provider of last resort) | Office of Consumer Advocate | R-2008-2028394 | Low-income program | Pennsylvania | 08 |

| CASE NAME | CLIENT NAME | Docket No. (if available) | TOPIC | JURIS. | YEAR |
|--|-----------------------------------|---------------------------|------------------------------------|----------------|------|
| I/M/O Equitable Gas Company | Office of Consumer Advocate | R-2008-2029325 | Low-income program | Pennsylvania | 08 |
| I/M/O Columbia Gas Company | Office of Ohio Consumers' Counsel | 08-072-GA-AIR | Rate design | Ohio | 08 |
| I/M/O Dominion East Ohio Gas Company | Office of Ohio Consumers' Counsel | 07-829-GA-AIR | Rate design | Ohio | 08 |
| I/M/O Vectren Energy Delivery Company | Office of Ohio Consumers' Counsel | 07-1080-GA-AIR | Rate design | Ohio | 08 |
| I/M/O Public Service Company of North Carolina | NC Department of Justice | G-5, SUB 495 | Rate design | North Carolina | 08 |
| I/M/O Piedmont Natural Gas Company | NC Department of Justice | G-9, SUB 550 | Rate design | North Carolina | 08 |
| I/M/O National Grid | New Hampshire Legal Assistance | DG-08-009 | Low-income rate assistance | New Hampshire | 08 |
| I/M/O EmPower Maryland | Office of Peoples Counsel | PC-12 | Low-income energy efficiency | Maryland | 08 |
| I/M/O Duke Energy Carolinas Save-a-Watt Program | NC Equal Justice Foundation | E-7, SUB 831 | Low-income energy efficiency | North Carolina | 08 |
| I/M/O Zia Natural Gas Company | Community Action New Mexico | 08-00036-UT | Low-income/low-use rate design | New Mexico | 08 |
| I/M/O Universal Service Fund Support for the Affordability of Local Rural Telecomm Service | Office of Consumer Advocate | I-0004010 | Telecomm service affordability | Pennsylvania | 08 |
| I/M/O Philadelphia Water Department | Public Advocate | No Docket No. | Credit and Collections | Philadelphia | 08 |
| I/M/O Portland General Electric Company | Community Action--Oregon | UE-197 | General rate case | Oregon | 08 |
| I/M/O Philadelphia Electric Company (electric) | Office of Consumer Advocate | M-00061945 | Low-income program | Pennsylvania | 08 |
| I/M/O Philadelphia Electric Company (gas) | Office of Consumer Advocate | R-2008-2028394 | Low-income program | Pennsylvania | 08 |
| I/M/O Columbia Gas Company | Office of Consumer Advocate | R-2008-2011621 | Low-income program | Pennsylvania | 08 |
| I/M/O Public Service Company of New Mexico | Community Action New Mexico | 08-00092-UT | Fuel adjustment clause | New Mexico | 08 |
| I/M/O Petition of Direct Energy for Low-Income Aggregation | Office of Peoples Counsel | CASE 9117 | Low-income electricity aggregation | Maryland | 07 |
| I/M/O Office of Consumer Advocate et al. v. Verizon and Verizon North | Office of Consumer Advocate | C-20077197 | Lifeline telecommunications rates | Pennsylvania | 07 |
| I/M/O Pennsylvania Power Company | Office of Consumer Advocate | P-00072437 | Low-income program | Pennsylvania | 07 |

| CASE NAME | CLIENT NAME | Docket No. (if available) | TOPIC | JURIS. | YEAR |
|---|--|---------------------------|---|----------------|------|
| I/M/O National Fuel Gas Distribution Corporation | Office of Consumer Advocate | M-00072019 | Low-income program | Pennsylvania | 07 |
| I/M/O Public Service of New Mexico--Electric | Community Action New Mexico | 07-00077-UT | Low-income programs | New Mexico | 07 |
| I/M/O Citizens Gas/NIPSCO/Vectren for Universal Service Program | Citizens Gas & Coke Utility/Northern Indiana Public Service/Vectren Energy | CASE 43077 | Low-income program design | Indiana | 07 |
| I/M/O PPL Electric | Office of Consumer Advocate | R-00072155 | Low-income program | Pennsylvania | 07 |
| I/M/O Section 15 Challenge to NSPI Rates | Energy Affordability Coalition | P-886 | Discrimination in utility regulation | Nova Scotia | 07 |
| I/M/O Philadelphia Gas Works | Office of Consumer Advocate | R-00061931 | Low-income programs / credit and collections | Pennsylvania | 07 |
| I/M/O Equitable Gas Company | Office of Consumer Advocate | M-00061959 | Low-income program | Pennsylvania | 07 |
| I/M/O Public Service Company of New Mexico | Community Action of New Mexico | Case No. 06-000210-UT | Late charges / winter moratorium / decoupling | New Mexico | 06 |
| I/M?O Verizon Massachusetts | ABCD | Case NO. DTE 06-26 | Late charges | Massachusetts | 06 |
| I/M/O Section 11 Proceeding, Energy Restructuring | Office of Peoples Counsel | PC9074 | Low-income needs and responses | Maryland | 06 |
| I/M/O Citizens Gas/NIPSCO/Vectren for Univ. Svc. Program | Citizens Gas & Coke Utility/Northern Indiana Public Service/Vectren Energy | Case No. 43077 | Low-income program design | Indiana | 06 |
| I/M/O Public Service Co. of North Carolina | North Carolina Attorney General/Dept. of Justice | G-5, Sub 481 | Low-income energy usage | North Carolina | 06 |
| I/M/O Electric Assistance Program | New Hampshire Legal Assistance | DE 06-079 | Electric low-income program design | New Hampshire | 06 |
| I/M/O Verizon Petition for Alternative Regulation | New Hampshire Legal Assistance | DM-06-072 | Basic local telephone service | New Hampshire | 06 |
| I/M/O Pennsylvania Electric Co/Metropolitan Edison Co. | Office of Consumer Advocate | N/A | Universal service cost recovery | Pennsylvania | 06 |
| I/M/O Duquesne Light Company | Office of Consumer Advocates | R-00061346 | Universal service cost recovery | Pennsylvania | 06 |
| I/M/O Natural Gas DSM Planning | Low-Income Energy Network | EB-2006-0021 | Low-income gas DSM program. | Ontario | 06 |
| I/M/O Union Gas Co. | Action Centre for Tenants Ontario (ACTO) | EB-2005-0520 | Low-income program design | Ontario | 06 |

| CASE NAME | CLIENT NAME | Docket No. (if available) | TOPIC | JURIS. | YEAR |
|---|--|---------------------------|--|----------------|------|
| I/M/O Public Service of New Mexico merchant plant | Community Action New Mexico | 05-00275-UT | Low-income energy usage | New Mexico | 06 |
| I/M/O Customer Assistance Program design and cost recovery | Office of Consumer Advocate | M-00051923 | Low-income program design | Pennsylvania | 06 |
| I/M/O NIPSCO Proposal to Extend Winter Warmth Program | Northern Indiana Public Service Company | Case 42927 | Low-income energy program evaluation | Indiana | 05 |
| I/M/O Piedmont Natural Gas | North Carolina Attorney General/Dept. of Justice | G-9, Sub 499 | Low-income energy usage | North Carolina | 05 |
| I/M/O PSEG merger with Exelon Corp. | Division of Ratepayer Advocate | EM05020106 | Low-income issues | New Jersey | 05 |
| Re. Philadelphia Water Department | Public Advocate | No docket number | Water collection factors | Philadelphia | 05 |
| I/M/O statewide natural gas universal service program | New Hampshire Legal Assistance | N/A | Universal service | New Hampshire | 05 |
| I/M/O Sub-metering requirements for residential rental properties | Tenants Advocacy Centre of Ontario | EB-2005-0252 | Sub-metering consumer protections | Ontario | 05 |
| I/M/O National Fuel Gas Distribution Corp. | Office of Consumer Advocate | R-00049656 | Universal service | Pennsylvania | 05 |
| I/M/O Philadelphia Gas Works (PGW) | Office of Consumer Advocate | R-00049157 | Low-income and residential collections | Pennsylvania | 04 |
| I/M/O Nova Scotia Power, Inc. | Dalhousie Legal Aid Service | NSUARB-P-881 | Universal service | Nova Scotia | 04 |
| I/M/O Lifeline Telephone Service | National Ass'n State Consumer Advocates (NASUCA) | WC 03-109 | Lifeline rate eligibility | FCC | 04 |
| Mackay v. Verizon North | Office of Consumer Advocate | C20042544 | Lifeline rates—vertical services | Pennsylvania | 04 |
| I/M/O PECO Energy | Office of Consumer Advocate | N/A | Low-income rates | Pennsylvania | 04 |
| I/M/O Philadelphia Gas Works | Office of Consumer Advocate | P00042090 | Credit and collections | Pennsylvania | 04 |
| I/M/O Citizens Gas & Coke/Vectren | Citizens Action Coalition of Indiana | Case 42590 | Universal service | Indiana | 04 |
| I/M/O PPL Electric Corporation | Office of Consumer Advocate | R00049255 | Universal service | Pennsylvania | 04 |
| I/M/O Consumers New Jersey Water Company | Division of Ratepayer Advocate | N/A | Low-income water rate | New Jersey | 04 |
| I/M/O Washington Gas Light Company | Office of Peoples Counsel | Case 8982 | Low-income gas rate | Maryland | 04 |

| CASE NAME | CLIENT NAME | Docket No. (if available) | TOPIC | JURIS. | YEAR |
|---|---------------------------------------|---------------------------|---|---------------|------|
| I/M/O National Fuel Gas | Office of Consumer Advocate | R-00038168 | Low-income program design | Pennsylvania | 03 |
| I/M/O Washington Gas Light Company | Office of Peoples Counsel | Case 8959 | Low-income gas rate | Maryland | 03 |
| Golden v. City of Columbus | Helen Golden | C2-01-710 | ECOA disparate impacts | Ohio | 02 |
| Huegel v. City of Easton | Phyllis Huegel | 00-CV-5077 | Credit and collection | Pennsylvania | 02 |
| I/M/O Universal Service Fund | Public Utility Commission staff | N/A | Universal service funding | New Hampshire | 02 |
| I/M/O Philadelphia Gas Works | Office of Consumer Advocate | M-00021612 | Universal service | Pennsylvania | 02 |
| I/M/O Washington Gas Light Company | Office of Peoples Counsel | Case 8920 | Rate design | Maryland | 02 |
| I/M/O Consumers Illinois Water Company | Illinois Citizens Utility Board | 02-155 | Credit and collection | Illinois | 02 |
| I/M/O Public Service Electric & Gas Rates | Division of Ratepayer Advocate | GR01050328 | Universal service | New Jersey | 01 |
| I/M/O Pennsylvania-American Water Company | Office of Consumer Advocate | R-00016339 | Low-income rates and water conservation | Pennsylvania | 01 |
| I/M/O Louisville Gas & Electric Prepayment Meters | Kentucky Community Action Association | 200-548 | Low-income energy | Kentucky | 01 |
| I/M/O NICOR Budget Billing Plan Interest Charge | Cook County State's Attorney | 01-0175 | Rate Design | Illinois | 01 |
| I/M/O Rules Re. Payment Plans for High Natural Gas Prices | Cook County State's Attorney | 01-0789 | Budget Billing Plans | Illinois | 01 |
| I/M/O Philadelphia Water Department | Office of Public Advocate | No docket number | Credit and collections | Philadelphia | 01 |
| I/M/O Missouri Gas Energy | Office of Peoples Counsel | GR-2001-292 | Low-income rate relief | Missouri | 01 |
| I/M/O Bell Atlantic--New Jersey Alternative Regulation | Division of Ratepayer Advocate | T001020095 | Telecommunications universal service | New Jersey | 01 |
| I/M/O Entergy Merger | Low-Income Intervenors | 2000-UA925 | Consumer protections | Mississippi | 01 |
| I/M/O T.W. Phillips Gas and Oil Co. | Office of Consumer Advocate | R00994790 | Ratemaking of universal service costs. | Pennsylvania | 00 |
| I/M/O Peoples Natural Gas Company | Office of Consumer Advocate | R-00994782 | Ratemaking of universal service costs. | Pennsylvania | 00 |
| I/M/O UGI Gas Company | Office of Consumer Advocate | R-00994786 | Ratemaking of universal service costs. | Pennsylvania | 00 |
| I/M/O PFG Gas Company | Office of Consumer Advocate | R00994788 | Ratemaking of universal service costs. | Pennsylvania | 00 |

| CASE NAME | CLIENT NAME | Docket No. (if available) | TOPIC | JURIS. | YEAR |
|---|---------------------------------------|---------------------------|---|---------------|---------|
| Armstrong v. Gallia Metropolitan Housing Authority | Equal Justice Foundation | 2:98-CV-373 | Public housing utility allowances | Ohio | 00 |
| I/M/O Bell Atlantic--New Jersey Alternative Regulation | Division of Ratepayer Advocate | T099120934 | Telecommunications universal service | New Jersey | 00 |
| I/M/O Universal Service Fund for Gas and Electric Utilities | Division of Ratepayer Advocate | EX00200091 | Design and funding of low-income programs | New Jersey | 00 |
| I/M/O Consolidated Edison Merger with Northeast Utilities | Save Our Homes Organization | DE 00-009 | Merger impacts on low-income | New Hampshire | 00 |
| I/M/O UtiliCorp Merger with St. Joseph Light & Power | Missouri Dept. of Natural Resources | EM2000-292 | Merger impacts on low-income | Missouri | 00 |
| I/M/O UtiliCorp Merger with Empire District Electric | Missouri Dept. of Natural Resources | EM2000-369 | Merger impacts on low-income | Missouri | 00 |
| I/M/O PacifiCorp | The Opportunity Council | UE-991832 | Low-income energy affordability | Washington | 00 |
| I/M/O Public Service Co. of Colorado | Colorado Energy Assistance Foundation | 99S-609G | Natural gas rate design | Colorado | 00 |
| I/M/O Avista Energy Corp. | Spokane Neighborhood Action Program | UE9911606 | Low-income energy affordability | Washington | 00 |
| I/M/O TW Phillips Energy Co. | Office of Consumer Advocate | R-00994790 | Universal service | Pennsylvania | 00 |
| I/M/O PECO Energy Company | Office of Consumer Advocate | R-00994787 | Universal service | Pennsylvania | 00 |
| I/M/O National Fuel Gas Distribution Corp. | Office of Consumer Advocate | R-00994785 | Universal service | Pennsylvania | 00 |
| I/M/O PFG Gas Company/Northern Penn Gas | Office of Consumer Advocate | R-00005277 | Universal service | Pennsylvania | 00 |
| I/M/O UGI Energy Company | Office of Consumer Advocate | R-00994786 | Universal service | Pennsylvania | 00 |
| Re. PSCO/NSP Merger | Colorado Energy Assistance Foundation | 99A-377EG | Merger impacts on low-income | Colorado | 99 - 00 |
| I/M/O Peoples Gas Company | Office of Consumer Advocate | R-00994782 | Universal service | Pennsylvania | 99 |
| I/M/O Columbia Gas Company | Office of Consumer Advocate | R-00994781 | Universal service | Pennsylvania | 99 |
| I/M/O PG Energy Company | Office of Consumer Advocate | R-00994783 | Universal service | Pennsylvania | 99 |
| I/M/O Equitable Gas Company | Office of Consumer Advocate | R-00994784 | Universal service | Pennsylvania | 99 |

| CASE NAME | CLIENT NAME | Docket No. (if available) | TOPIC | JURIS. | YEAR |
|---|---|---------------------------|--|--------------------|---------|
| Allerruzzo v. Klarchek | Barlow Allerruzzo | N/A | Mobile home fees and sales | Illinois | 99 |
| I/M/O Restructuring New Jersey's Natural Gas Industry | Division of Ratepayer Advocate | GO99030123 | Universal service | New Jersey | 99 |
| I/M/O Bell Atlantic Local Competition | Public Utility Law Project | P-00991648 | Lifeline telecommunications rates | Pennsylvania | 99 |
| I/M/O Merger Application for SBC and Ameritech Ohio | Edgemont Neighborhood Association | N/A | Merger impacts on low-income consumers | Ohio | 98 - 99 |
| Davis v. American General Finance | Thomas Davis | N/A | Damages in "loan flipping" case | Ohio | 98 - 99 |
| Griffin v. Associates Financial Service Corp. | Earlie Griffin | N/A | Damages in "loan flipping" case | Ohio | 98 - 99 |
| I/M/O Baltimore Gas and Electric Restructuring Plan | Maryland Office of Peoples Counsel | Case No. 8794 | Consumer protection/basic generation service | Maryland | 98 - 99 |
| I/M/O Delmarva Power and Light Restructuring Plan | Maryland Office of Peoples Counsel | Case No. 8795 | Consumer protection/basic generation service | Maryland | 98 - 99 |
| I/M/O Potomac Electric Power Co. Restructuring Plan | Maryland Office of Peoples Counsel | Case No. 8796 | Consumer protection/basic generation service | Maryland | 98 - 99 |
| I/M/O Potomac Edison Restructuring Plan | Maryland Office of Peoples Counsel | Case No. 8797 | Consumer protection/basic generation service | Maryland | 98 - 99 |
| VMHOA v. LaPierre | Vermont Mobile Home Owners Association | N/A | Mobile home tying | Vermont | 98 |
| Re. Restructuring Plan of Virginia Electric Power | VMH Energy Services, Inc. | PUE960296 | Consumer protection/basic generation service | Virginia | 98 |
| Mackey v. Spring Lake Mobile Home Estates | Timothy Mackey | N/A | Mobile home fees | State ct: Illinois | 98 |
| Re. Restructuring Plan of Atlantic City Electric | New Jersey Division of Ratepayer Advocate | E097070457 | Low-income issues | New Jersey | 97-98 |
| Re. Restructuring Plan of Jersey Central Power & Light | New Jersey Division of Ratepayer Advocate | E097070466 | Low-income issues | New Jersey | 97-98 |
| Re. Restructuring Plan of Public Service Electric & Gas | New Jersey Division of Ratepayer Advocate | E097070463 | Low-income issues | New Jersey | 97-98 |

| CASE NAME | CLIENT NAME | Docket No. (if available) | TOPIC | JURIS. | YEAR |
|--|--|---------------------------|--|-------------------------|---------|
| Re. Restructuring Plan of Rockland Electric | New Jersey Division of Ratepayer Advocate | E09707466 | Low-income issues | New Jersey | 97-98 |
| Appleby v. Metropolitan Dade County Housing Agency | Legal Services of Greater Miami | N/A | HUD utility allowances | Fed. court: So. Florida | 97 - 98 |
| Re. Restructuring Plan of PECO Energy Company | Energy Coordinating Agency of Philadelphia | R-00973953 | Universal service | Pennsylvania | 97 |
| Re. IES Industries Merger | Iowa Community Action Association | SPU-96-6 | Low-income issues | Iowa | 97 |
| Re. New Hampshire Electric Restructuring | NH Comm. Action Ass'n | N/A | Wires charge | New Hampshire | 97 |
| Re. Merger of Atlantic City Electric and Connectiv | Division of Ratepayer Advocate | EM97020103 | Low-income | New Jersey | 97 |
| Re. Connecticut Power and Light | City of Hartford | 92-11-11 | Low-income | Connecticut | 97 |
| Re. Comprehensive Review of RI Telecomm Industry | Consumer Intervenors | 1997 | Consumer protections | Rhode Island | 97 |
| Re. Natural Gas Competition in Wisconsin | Wisconsin Community Action Association | N/A | Universal service | Wisconsin | 96 |
| Re. Baltimore Gas and Electric Merger | Maryland Office of Peoples Counsel | CASE NO. 8725 | Low-income issues | Maryland | 96 |
| Re. Northern States Power Merger | Energy Cents Coalition | E-002/PA-95-500 | Low-income issues | Minnesota | 96 |
| Re. Public Service Co. of Colorado Merger | Colorado Energy Assistance Foundation | N/A | Low-income issues | Colorado | 96 |
| Re. Massachusetts Restructuring Regulations | Fisher, Sheehan & Colton | DPU-96-100 | Low-income issues/energy efficiency | Massachusetts | 96 |
| I/M/O PGW FY1996 Tariff Revisions | Philadelphia Public Advocate | No Docket No. | Credit and collection / customer service | Philadelphia | 96 |
| Re. FERC Merger Guidelines | National Coalition of Low-Income Groups | RM-96-6-000 | Low-income interests in mergers | Washington D.C. | 96 |
| Re. Joseph Keliikuli III | Joseph Keliikuli III | N/A | Damages from lack of homestead | Honolulu | 96 |

| CASE NAME | CLIENT NAME | Docket No. (if available) | TOPIC | JURIS. | YEAR |
|---|---|---------------------------|--------------------------------------|-----------------|------|
| Re. Theresa Mahaulu | Theresa Mahaulu | N/A | Damages from lack of homestead | Honolulu | 95 |
| Re. Joseph Ching, Sr. | Re. Joseph Ching, Sr. | N/A | Damages from lack of homestead | Honolulu | 95 |
| Joseph Keaulana, Jr. | Joseph Keaulana, Jr. | N/A | Damages from lack of homestead | Honolulu | 95 |
| Re. Utility Allowances for Section 8 Housing | National Coalition of Low-Income Groups | N/A | Fair Market Rent Setting | Washington D.C. | 95 |
| Re. PGW Customer Service Tariff Revisions | Philadelphia Public Advocate | No Docket No. | Credit and collection | Philadelphia | 95 |
| Re. Customer Responsibility Program | Philadelphia Public Advocate | No Docket No. | Low-income rates | Philadelphia | 95 |
| Re. Houston Lighting and Power Co. | Gulf Coast Legal Services | 12065 | Low-Income Rates | Texas | 95 |
| I/M/O Petition to Stay PGW's Suspension of CRP customers who did Not Assign LIHEAP Grant to PGW | Philadelphia Public Advocate | No Docket No. | Low-Income rates | Philadelphia | 95 |
| Re. PGW Tariff Changes, Programs and Information Systems | Philadelphia Public Advocate | No Docket No. | Credit and collection | Philadelphia | 95 |
| Re. Request for Modification of Winter Moratorium | Philadelphia Public Advocate | No Docket No. | Credit and collection | Philadelphia | 95 |
| Re. Dept of Hawaii Homelands Trust Homestead Production | Native Hawaiian Legal Corporation | N/A | Prudence of trust management | Honolulu | 94 |
| Re. SNET Request for Modified Shutoff Procedures | Office of Consumer Counsel | 94-06-73 | Credit and collection | Connecticut | 94 |
| Re. Central Light and Power Co. | United Farm Workers | 128280 | Low-income rates/DSM | Texas | 94 |
| Blackwell v. Philadelphia Electric Co. | Gloria Blackwell | N/A | Role of shutoff regulations | Penn. courts | 94 |
| U.S. West Request for Waiver of Rules | Wash. Util. & Transp. Comm'n Staff | UT-930482 | Telecommunications regulation | Washington | 94 |
| Re. U.S. West Request for Full Toll Denial | Colorado Office of Consumer Counsel | 93A-6113 | Telecommunications regulation | Colorado | 94 |
| Washington Gas Light Company | Community Family Life Services | Case 934 | Low-income rates & energy efficiency | Washington D.C. | 94 |
| Clark v. Peterborough Electric Utility | Peterborough Community Legal Centre | 6900/91 | Discrimination of tenant deposits | Ontario, Canada | 94 |

| CASE NAME | CLIENT NAME | Docket No. (if available) | TOPIC | JURIS. | YEAR |
|---|--|---------------------------|-----------------------------------|------------------------|------|
| Dorsey v. Housing Auth. of Baltimore | Baltimore Legal Aide | N/A | Public housing utility allowances | Federal district court | 93 |
| Penn Bell Telephone Co. | Penn. Utility Law Project | P00930715 | Low-income phone rates | Pennsylvania | 93 |
| Philadelphia Gas Works | Philadelphia Public Advocate | No Docket No. | Low-income rates | Philadelphia | 93 |
| Central Maine Power Co. | Maine Assn Ind. Neighborhoods | Docket No. 91-151-C | Low-income rates | Maine | 92 |
| New England Telephone Company | Mass Attorney General | 92-100 | Low-income phone rates | Massachusetts | 92 |
| Philadelphia Gas Works | Philadelphia Public Advocate | No Docket No. | Low-income DSM | Philadelphia | 92 |
| Philadelphia Water Dept. | Philadelphia Public Advocate | No Docket No. | Low-income rates | Philadelphia | 92 |
| Public Service Co. of Colorado | Land and Water Fund | 91A-783EG | Low-income DSM | Colorado | 92 |
| Sierra Pacific Power Co. | Washoe Legal Services | N/A | Low-income DSM | Nevada | 92 |
| Consumers Power Co. | Michigan Legal Services | No Docket No. | Low-income rates | Michigan | 92 |
| Columbia Gas | Office of Consumer Advocate (OCA) | R9013873 | Energy Assurance Program | Pennsylvania | 91 |
| Mass. Elec. Co. | Mass Elec Co. | N/A | Percentage of Income Plan | Massachusetts | 91 |
| AT&T | TURN | 90-07-5015 | Inter-LATA competition | California | 91 |
| Generic Investigation into Uncollectibles | Office of Consumer Advocate | I-900002 | Controlling uncollectibles | Pennsylvania | 91 |
| Union Heat Light & Power | Kentucky Legal Services (KLS) | 90-041 | Energy Assurance Program | Kentucky | 90 |
| Philadelphia Water | Philadelphia Public Advocate (PPA) | No Docket No. | Controlling accounts receivable | Philadelphia | 90 |
| Philadelphia Gas Works | PPA | No Docket No. | Controlling accounts receivable | Philadelphia | 90 |
| Mississippi Power Co. | Southeast Mississippi Legal Services Corp. | 90-UN-0287 | Formula ratemaking | Mississippi | 90 |
| West Kentucky Gas | KLS | 90-013 | Energy Assurance Program | Kentucky | 90 |
| Philadelphia Electric Co. | PPA | N/A | Low-income rate program | Philadelphia | 90 |

| CASE NAME | CLIENT NAME | Docket No. (if available) | TOPIC | JURIS. | YEAR |
|--|--|---------------------------|--|--------------|------|
| Montana Power Co. | Montana Ass'n of Human Res. Council Directors | N/A | Low-income rate proposals | Montana | 90 |
| Columbia Gas Co. | Office of Consumer Advocate | R-891468 | Energy Assurance Program | Pennsylvania | 90 |
| Philadelphia Gas Works | PPA | No Docket No. | Energy Assurance Program | Philadelphia | 89 |
| Southwestern Bell Telephone Co. | SEMLSC | NF-89749 | Formula ratemaking | Mississippi | 90 |
| Generic Investigation into Low-income Programs | Vermont State Department of Public Service | Case No. 5308 | Low-income rate proposals | Vermont | 89 |
| Generic Investigation into Dmnd Side Management Measures | Vermont DPS | N/A | Low-income conservation programs | Vermont | 89 |
| National Fuel Gas | Office of Consumer Advocate | N/A | Low-income fuel funds | Pennsylvania | 89 |
| Montana Power Co. | Human Resource Develop. Council District XI | N/A | Low-income conservation | Montana | 88 |
| Washington Water Power Co. | Idaho Legal Service Corp. | N/A | Rate base, rate design, cost-allocations | Idaho | 88 |

Appendix B: PUC Staff Legal Opinion (09-23-13)

THE STATE OF NEW HAMPSHIRE



PUBLIC UTILITIES COMMISSION

21 S. Fruit Street, Suite 10
Concord, N.H. 03301-2429

September 23, 2013

TDD Access: Relay NH
1-800-735-2964

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CHAIRMAN
Amy L. Ignatius

COMMISSIONERS
Michael D. Harrington
Robert R. Scott

EXECUTIVE DIRECTOR
Debra A. Howland

Debra A. Howland, Executive Director
New Hampshire Public Utilities Commission
21 South Fruit Street, Suite 10
Concord, NH 03301

Re: DE 12-262 Carryover of Liberty Utilities NH Gas HEA Energy Efficiency
Program Funds from 2012 to 2013

Dear Ms. Howland:

On July 23, 2013, EnergyNorth Natural Gas d/b/a/Liberty Utilities NH notified the Commission that the Company intends to carry forward unused funds amounting to \$189,576 from its 2012 gas energy efficiency budget to its 2013 program year. On July 23, 2013, Staff asked the Company for additional information to update the benchmark for the 2013 programs to incorporate the carry forward of 2012 Home Energy Assistance (HEA) funds. Subsequently, in response to informal data requests, EnergyNorth provided the requested information showing that the carryover is expected to increase the participant goal for the HEA program by 51 customers in 2013, from 156 to 207. Also, the program will continue to be cost effective, with a benefit to cost ratio of 1.1. Staff has requested that EnergyNorth file this information with the Commission so the the benchmark for purposes of calculating 2013 performance incentives can be updated. The Company has agreed to file this information. Finally, Staff is of the opinion that the proposed carry forward of the low income HEA program monies is consistent with Commission Order No. 24,109 dated December 31, 2002 wherein it states, in part, that EnergyNorth's low income program budgets were "dedicated" – i.e., such budgets could not be siphoned away to other programs.

Based on the above, Staff believes that the carry forward of 2012 HEA program funds to 2013 HEA program funds is reasonable. The Company will be filing information updating the benchmark for purposes of calculating performance incentives for 2013. Because, the carry over is permitted in the CORE program, Staff believes no further action is necessary.

Sincerely,

A handwritten signature in cursive script that reads "Marcia A. Brown".

Marcia A. Brown
Staff Attorney

cc: Service List

Appendix C:
Joint Utilities Response to OCA-2-001

Public Service of New Hampshire d/b/a Eversource Energy
Docket No. DE 17-136

Date Request Received: 10/05/2018

Request No. OCA 2-001

Request from: Office of Consumer Advocate

Date of Response: 10/19/2018

Page 1 of 3

Witness: Thomas R. Belair, Katherine W. Peters

Request:

Reference New Hampshire Statewide Energy Efficiency Plan 2019 Update, at Bates 10-11, stating "The proposed SBC rate is 17 percent lower than the estimated 2019 SBC energy efficiency program rate...included in the [17-136] Settlement Agreement [and approved in]...the Commission's Order No. 25,932 in the EERS proceeding," and 374-F:3, VI stating "Legislative approval of the New Hampshire general court shall be required to increase the system benefits charge. This requirement of prior approval of the New Hampshire general court shall not apply to the full implementation of Order No. 25,932 issued by the commission, dated August 2, 2016," and Order No. 26,095 stating "The three-year level of funding for the electric programs is \$154,142,000. Exhibit 2 at 31, Table 4.9. The 2018 funding level is \$38,635,000; the 2019 funding level is \$49,488,000; and the 2020 funding level is 66,019,000."

- a. Please explain why the funding rate which was approved in either Order No. 25,932 or Order No. 26,095 is not the current rate used for the planned budget for 2019.
- b. If it is the joint utilities' position that adjustment of the proposed SBC below the level established in Order No 25,932 complies with that Order and the directive provided to the Commission by the recent passage of HB 317, please explain why.
- c. Is it the joint utilities' position that adjustment of the proposed SBC above the level established in Order No. 25,932 would comply with that Order and the directive provided to the Commission by the recent passage of HB 317. If not, please explain why.
- d. Assuming the joint utilities can achieve the 2019 savings as a percent of retail sales approved in Order No. 25,932 with less funding than was assumed in the 2018-20 Plan, would the joint utilities object to leaving the SBC rate at the level approved in Order No 25.932 and utilizing any excess collections as a means of capitalizing a loan loss reserve or similar credit enhancement facility, therefore alleviating the current and future program costs associated with interest rate buy-downs? If so, please explain why.

Response:

- a) As an initial matter, the question appears to be based upon the premise that the purpose of the EERS is to reach a specific spending target. Instead, the purpose of the EERS is to reach certain savings goals. In the DE 15-137 settlement it states, at page 7, that in developing the EERS plan "the Utilities **shall** incorporate the following statewide savings goals for the first three-year period" (emphasis added). The role of the utilities is to propose and use the funding amounts needed to cost-effectively reach the agreed upon, and required, savings goals, not simply to assure that a specific amount of money is spent or collected in any particular year.
 - The SBC Rates presented in the DE 15-137 Settlement Agreement and Order were estimates to be further refined in the 2018-2020 Plan and the PUC did not issue approval for future rate

changes with Order No. 25,932. Page 8 of the Settlement Agreement states: "The Settling Parties agree that the savings goals balance the goals of capturing more cost effective energy efficiency and benefits to ratepayers with the goal of gradually increasing funding for efficiency while minimizing the impacts on all ratepayers. The Utilities' **estimated** costs to achieve the identified savings goals are shown in Electric Attachment A, Page 10 and Gas Attachment B, Page 7. The Utilities will provide to the parties and the planning expert referred to in this Section II.C for review and comment updated estimated costs for achieving these savings levels as part of the comprehensive EERS Plan..." Additionally, "annual update filings shall be submitted for review by the Commission in an abbreviated process substantially similar to the mid-period submission presently used in the Core dockets."

- The Commission specifically approved an SBC Rate for the 2018 programs, effective January 1, 2018. See the Secretarial Letter issued on December 29, 2017.
http://www.puc.state.nh.us/Regulatory/Docketbk/2017/17-136/LETTERS-MEMOS-TARIFFS/17-136_2017-12-29_SEC_LTR_APP_SYSTEM_BENEFIT_CHARGE.PDF. Page 19 of Order No. 26,095 also specifically approves the SBC rates for the 2018 programs. "The System Benefits Charge rates presented by the Utilities in Exhibit 2 at 434 are hereby approved for effect January 1, 2018." The Commission did not issue similar approvals for SBC rates for 2019 or 2020 in Order No 26,095.
- The funding and budgets presented for 2019 and 2020 in the 2018-2020 Plan were based on a set of assumptions for SBC amounts (assumed sales forecasts and an assumed SBC Rate), RGGI funding amounts, FCM amounts and carryover amounts, as well as program costs and savings assumptions. However, the specific SBC rates for 2019 and 2020 were not proposed or approved in the 3-Year Plan because the process includes annual updates for these years. The annual update incorporates actual carryover amounts from 2017 as well as more current estimates of forecasted sales, RGGI funding, FCM revenues, savings assumptions, programs costs and also therefore, an updated SBC rate.
- b) Order No. 25,932 did not approve an SBC rate for 2019 or any other year. The SBC rate for 2017 was approved in Order No. 25,976. The SBC rate for 2018 was approved in the Secretarial Letter dated 12-29-17 and Order No. 26,095. SBC rates for 2019 and 2020 will be approved during the annual update process for those program years. If the funding and budgets needed to achieve the approved savings target result in a proposed SBC rate lower than the estimates provided in the DE 15-137 Settlement, the proposal complies with Order No 25,932. Moreover, the SBC rates for 2017 and 2018 were both lower than their DE 15-137 Settlement estimates and received no objection from any party.
- c) If the revised estimates for RGGI funding, FCM amounts, carryover amounts, program costs, and savings assumptions led to a need for an SBC amount above the estimates provided in Order No. 25,932 in order to reach the agreed upon savings targets then proposal of that higher SBC amount would comply with the Order.
- d) If all parties agreed that the SBC rate should be set in order to achieve the budget amounts indicated for 2019 in the 2018-2020 Plan, the utilities would be open to discussing with parties the optimal use for those additional funds. We are not convinced at this time that a loan loss reserve would be the optimal use for theoretical additional funds. The program costs associated with interest rate buy-downs are currently minimal. The buy-downs provide residential customers with

a 2% interest loan intended to remove barriers to implementing energy efficiency projects. A small percentage of completed projects utilize the offering. If the buy-down were removed and a loan loss reserve were put into place with lenders, we have no evidence that lenders would offer a 2% rate or lower without the buy-down. Assuming the rate would be higher, and thus potentially more of a barrier for customers, we have no evidence that a loan loss reserve would lead to greater uptake of loans or additional energy savings.

(Joint Utility Response)

Appendix D: 2017 Low-Income NEI Review

A Review of the Valuation of Non-Energy Impacts (NEIs) in Four Selected States Presented to New Hampshire PUC

Prepared by: Roger Colton

October 2017

1. Colorado.

A 2010 Colorado study examined the existing Xcel Energy (d/b/a Public Service Company of Colorado) “adder” adopted to account for NEIs. At the time of the study, Xcel used a 20% adder for its electric programs. The Xcel study concluded:

If the deemed multipliers or adders are meant to “scale up” the simple energy savings to represent the full value of the impacts of the low-income programs to the utility, society and to low income participants, the multipliers are considerably under-valued. To reflect these impacts, the electric multiplier would need to be increased by multiple times its current value depending on the program.¹

The table below sets forth the electric NEIs as a percentage of energy savings for the Energy Savings Kits and for the single family weatherization programs.² Only the NEIs from the utility’s perspective and from the participant’s perspective are presented.³ The Colorado report stated that the valuation methods “have been honed and demonstrated over a period of about 15 years.”⁴

| Colorado NEIs as Percentage of Energy Savings (electric only) (2010) | | |
|--|---------------------|-------------------------|
| | Utility Perspective | Participant Perspective |
| Energy Saving Kits | 14% | 107% |
| One-Family Home Weatherization | 18% | 126% |

The Colorado report noted that:

¹ Lisa Skumatz (2010). *Non-Energy Benefits Analysis for Xcel Energy’s Low Income Energy Efficiency Programs*, at 8.

² In this table, I have excluded the NEIs for gas programs and the NEIs for the combined gas/electric programs. I have also excluded the multi-family housing and nonprofit NEIs calculated for Colorado simply as being beyond the scope of my testimony.

³ In other words, I have excluded the societal NEIs.

⁴ Skumatz Colorado, at 10.

The work found that virtually all NEBs seemed to fit the pattern of being related fairly closely to units of energy (and on a related note for the financial metrics, dollars) saved. As the energy savings and/or dollars saved increased, the NEB values increase. For that reason, the use of a proxy multiplier for NEBs on a kWh or therm basis, with only a few exceptions, can be reasonably justified.⁵

I discuss this 2010 Colorado NEI assessment simply to document that a 10% New Hampshire adder for a low-income program does not adequately reflect the full value of low-income NEIs. In Colorado, which at the time used a 20% adder, the NEI valuation study found that the then-existing adder “considerably under-valued” NEIs and that to reflect the NEI impacts, “the electric multiplier would need to be increased by multiple times its current value. . .”

Notwithstanding its finding that a 20% adder “considerably under-valued” NEIs, there were several instances in which the Colorado study under-stated either utility-related impacts or participant-related impacts. For example (and this is not intended to be a comprehensive list):

- The reduction in utility carrying costs on arrears was calculated using the utility’s short-term interest rate. In Colorado, however, working capital is a rate base item for the public utility. Accordingly, working capital should have been valued based on the weighted cost of capital (including the tax effect on the equity portion of the return).
- The reduction in participant reconnection expenses was limited to the value of the reconnect fee. No value was assigned to the time a household is required to devote to arranging the repayment of the underlying arrearages that gave risk to the disconnection of service in the first instance.
- The reduction in participant shutoff expenses was limited to households whose power is eventually restored. No value was included for households who did not have power restored, nor was value assigned to the time households devote to responding to a service disconnection.

Based on this discussion, I do not conclude that a specific adjustment to the NEI analysis should have been made. Rather, the conclusion is that despite the understatement of the participant and utility NEIs, the Colorado valuation *still* found that Xcel’s “electric multiplier would need to increase multiple times. . .” in order to accurately reflect the value of NEIs. A 20% adder does

⁵ Skumatz Colorado, at 9 (internal notes omitted). The “exceptions” referenced in the report are not applicable here.

not represent a reasonably proxy for the full value of participant-perspective NEIs let alone the combination of utility-perspective and participant-perspective NEIs.

2. Massachusetts.

In 2016, Three³ (read “Three-Cubed”) prepared a report for the Massachusetts Program Administrators (“MPA”) on low-income single family health- and safety-related non-energy impacts.⁶ The findings of the 2016 study were reviewed, and largely accepted, by the NMR Group, a consulting firm that had authored a similar (but more comprehensive) study⁷ five years earlier for the MPA.⁸ The 2016 Massachusetts study found the following monetized participant NEIs regarding health and safety.

| Health and Safety NEI Being Valued | Present Value (\$s) | Page cite to study |
|--|--------------------------|--------------------|
| Reduced asthma-related costs | \$190.92 | p.18 |
| Reduced medical treatment (without avoided death) (cold) | \$89.30 | p.27 |
| Reduced medical treatment (without avoided death) (hot) | \$158.19 | p.27 |
| Fewer missed days of work | \$2,855.12 | p.30 |
| Reduced use of short-term, high interest loans | \$90.18 | p.34 |
| Increased productivity / improved sleep | \$721.26 | p.36 |
| Reduced fire and fire-related property damages | \$186.68 | p.45 |
| Sub-total ⁹ | \$4,291.65 ¹⁰ | Summed |

As can be seen, the Massachusetts study documents nearly \$4,300 only in participant health and safety benefits as NEIs. It excludes participant benefits not involving health and safety (not because they were unimportant, but rather because they were beyond the scope of this particular study).

⁶Bruce Hawkins et al. (2016). *Massachusetts Special and Cross Cutting Research Area: Low-Income Single-Family Health and Safety-Related Non-Energy Impacts (NEIs) Study*. Prepared for Massachusetts Program Administrators.

⁷ By “more comprehensive, I mean to reference the fact that the NMR Group’s study of NEIs considered more than health and safety issues.

⁸ TetraTech and NMR Group (2011). *Massachusetts Special and Cross-Sector Studies Area, Residential and Low-Income Non-Energy Impacts (NEI) Evaluation: Final*. Prepared for Massachusetts Program Administrators.

⁹ The lower valued NEIs discussed in the Three³ report have been omitted here.

¹⁰ The study noted that participants would need the “full complement of major weatherization measures” to generate the identified NEIs.

Like Colorado above, the Massachusetts Three³ report under-stated some of the specific NEIs that it studied. Unlike Colorado, the Massachusetts report *acknowledged* in the text of the analysis the ways and places where under-valuation was likely to have occurred:

- The value of reduced asthma costs was under-stated since it assumed only one admittance per year, “despite the possibility that these events may have occurred multiple times.” (page 19).
- The value of reduced asthma costs was under-stated since it was based solely on the asthma of the head of household, “which may be an underestimate of the percent of adults and children with asthma in WAP eligible homes.” (page 19).
- The value of reducing thermal stress was under-stated since “it was assumed that extreme temperatures impact only one person per household.” (page 26).
- The value of reducing thermal stress was under-stated since it was based on the general population, even though “the WAP demographic consists of individuals that are more at-risk for cold- and heat-related medical conditions.” (page 26).
- The value of reducing missed days at work was under-stated since it was based only on the head of household rather than on all employed workers in the home. (page 29).
- The value of improved home productivity was understated since “only one home worker per household was included in the benefit calculation.” (page 36).

Aside from this 2016 study in Massachusetts, and the health and safety non-energy impacts it considered, other participant perspective NEIs have been documented for Massachusetts as well. In particular, the 2011 NEI study for the MPA reported that increased comfort was an important NEI. That 2011 study found:

Participants in energy efficiency programs that include HVAC components and weatherization measures commonly experience greater perceived comfort, due to fewer drafts and more even temperatures throughout the home. The literature provides strong evidence that participants experience increased thermal comfort as a result of programs that affect the heating and cooling of the home, and that they consider these increased comfort levels to be a very important program benefit, both in general terms and in relation to other perception-based NEIs.¹¹

¹¹ NMR Massachusetts, at 5-9.

NMR recommended a non-low-income *annual* value of \$125 per year for shell and weatherization measures or heating and cooling equipment to reflect the NEI involving increased comfort. In addition, NMR reported that noise suppression is a valuable NEI. “Energy efficiency programs can reduce noise in participants’ homes by installing insulation and sealing doors and windows, thus reduce the extent to which outside noise can be heard inside the home.”¹² NMR recommended an *annual* noise reduction value of \$31/year for non-low-income homes.¹³

The NMR Massachusetts report does have one significant shortcoming. In Massachusetts, NMR declined to include any benefits derived from energy bill savings.¹⁴ According to NMR, these benefits would have been already accounted for in the utility’s determination of Avoided Energy Supply Costs (“AESC”). The AESC, however, only considers traditional avoided energy and capacity costs associated with usage reduction.¹⁵ The AESC, however, does not even account for bill savings to customers at retail rates. NMR’s narrow approach to the treatment of bill savings is unique and artificially limits participant perspective NEIs. To argue that participant perspective NEIs are incorporated into a quantification of avoided energy, capacity transportation and distribution, and environmental compliance costs is in error.

To summarize, using a discount rate of 4% and a 20-year life span for the benefits, the comfort impacts would have a Net Present Value of \$1,699 while the noise reduction impacts would have an additional Net Present Value of \$421. These two impacts, alone, add \$2,120 in net present value NEIs to non-low-income energy efficiency investments. When added to the health and

¹² NMR Massachusetts, at 5-11.

¹³ Rhode Island, too, has “used a readily measured test/program screen for low income; quantify utility, societal; health and safety, equipment, prop, and comfort.” Samantha Caputo, (June 2017). *Non-Energy Impacts Approaches and Values: An Examination of the Northeast, Mid-Atlantic, and Beyond*, at 38, Northeast Energy Efficiency Partnerships, prepared for New Hampshire PUC. According to NEEP, “NEIs are considered an integral part to the Rhode Island [Technical Reference Manual]. NEIs attributable to electric and gas energy efficiency programs are considered [in] its cost-effectiveness framework.” NEEP 2017, at 38. Since, however, Rhode Island uses Massachusetts as its source for NEI values, Rhode Island is not separately considered in my discussion here.

¹⁴ See generally, NMR Massachusetts, at 1-4. “NMR does not recommend including any NEIs that are derived from participant bill savings because it would amount to double counting of benefits. To count benefits that derive from bill savings would amount to valuing the additional disposable income (i.e., bill savings) and the ways in which the participants spend the disposable income. . .But to count both the bill savings and the health benefits. . .that are derived entirely from the way bill savings are spent is to count the same benefit twice.” NMR Massachusetts, at 1-5, 2-6.

¹⁵ “For example, avoided costs of electricity to retail customers includes avoided energy costs, avoided capacity costs, avoided environmental regulation compliance costs, demand reduction induced price effects, and avoided costs of local transmission and distribution infrastructure. . .” NMR Massachusetts, at 1-4 (internal citations omitted).

safety NEIs previously documented by Three³, we find more than \$6,400 of NEIs in this limited set of participant perspective NEIs alone.¹⁶

3. Connecticut.

In 2016, the NMR Group completed an evaluation of Connecticut’s ratepayer-funded energy efficiency programs.¹⁷ NMR reported:

Participants experienced positive net impacts –household and other effects beyond energy savings—from the program. These positive NEIs far outweighed any negative NEIs. The analysis found overall NEI values of 0.8 for HES end-users [and] 0.90 for HES-IE end-users. . .Adding the NEIS derived from this study to current estimates of total program benefits relative to costs increases [Benefit Cost Ratios] for all fuels and Companies. . .¹⁸

NMR concluded that “in other words, the NEI values can be considered as multipliers that are applied to energy savings.”¹⁹ NMR reported that “the vast majorities of HES (83%) and HES-IE (79%), and rebate-only (93%) end-user participants observed positive net impacts from NEIs. “Comfort” carried the “greatest importance” for both low-income and non-low-income participants.²⁰

4. Maryland.

Two reports from Maryland contribute to an understanding of what an appropriate NEI adder might be in New Hampshire. In March 2014, Skumatz completed an assessment of non-energy impacts in Maryland for the Natural Resources Defense Council. In August 2014, ITRON completed a similar study for the EMPOWER Cost-Effectiveness Working Group.²¹

¹⁶ Moreover, there would be a need to bring these values to current year dollars. The \$4,292 was in 2011 dollars while the \$2,120 was in 2014 dollars.

¹⁷ The Home Energy Solutions (HES) program was the non-low-income program studied. The Home Energy Solutions—Income Eligible (HES-IE) was the low-income program.

¹⁸ NMR Connecticut, at XL11.

¹⁹ NMR Connecticut, at 138.

²⁰ NMR Connecticut, at 142.

²¹ The Working Group draws on the expertise of a diverse group of stakeholders, including Commission Staff, the Maryland Energy Administration, the Office of Peoples’ Counsel, environmental organizations, and EmPOWER utilities.

ITRON reports in its Maryland study that “four states in the Northeast (MA, RI, DC and VT) include comfort benefits in their cost-effectiveness tests.”²² ITRON recommended that Maryland use “the comfort benefit in future ex ante and/or ex post cost-effectiveness analysis.”²³ In its assessment of the comfort benefit, ITRON used the Massachusetts quantification of the dollar value of the benefit. ITRON reported that while the comfort NEI would not, *unto itself*, make either the non-low-income or low-income cost effective, “the comfort benefits would have increased the statewide TRC B/C ratio for the [non-low-income] programs from 0.6 to 0.79.” Similarly, the “comfort benefits would have increased the statewide TRC B/C ratio for the [low-income] programs from 0.55 to 0.69.”

The 2014 Maryland study by Skumatz undertook a broader review of NEIs in Maryland. The Skumatz study concluded, a conclusion which I reiterate and with which I agree:

Twenty years of research and measurement of traditionally-omitted program impacts, or non-energy benefits (NEBs), have provided increasingly robust and consistent results. The regulatory tests are designed to assess costs and benefits, but protocols omitted some benefits, presumably because reliable values were not available. This leads to computational bias in benefit-cost ratios (from the omission of net benefit categories, but not omission of costs), and as a result, bias in decision-making using these ratios. Zero is the wrong proxy value.²⁴

The Skumatz study examines NEI values, both in percentage and dollar terms, and provided summaries of “the ranges and typical values for the NEB categories.” “Typical values” were defined to be “defensible values selected based on a review of mean, median, and clustering of results from multiple studies.”²⁵

In dollar terms, Skumatz found that the “typical value” of participant-related NEIs reached 193% of the expected bill savings from Maryland’s residential weatherization programs. In percentage terms, Skumatz found that the “typical value” of participant-related NEIs reached 144% of expected energy savings.²⁶

²² ITRON (2014). *Development and Application of Select Non-Energy Benefits for the EmPOWER Maryland Energy Efficiency Programs*, at 3-1. Prepared for EmPOWER Cost-Effectiveness Working Group.

²³ ITRON, at 3-5.

²⁴ Skumatz (March 2014). *Non-Energy Benefits / Non-Energy Impacts (NEBs/NEIs) and their Role & Values in Cost-Effectiveness Tests: State of Maryland, Final Report*, at 1.

²⁵ Skumatz Maryland, at 2.

²⁶ Skumatz Maryland, at 4. Skumatz explains that “the percentage and dollar values are derived independently, and in some cases, include different numbers of studies (translations weren’t possible for all studies included). Therefore, the numbers in the two sets of columns are not merely translations of each other.” Skumatz Maryland, at 27.

One value that the 2014 Skumatz Maryland study importantly introduces into the NEI quantification involves the value that customers attribute to their increased “knowledge” and “control over bills” by a weatherization program. In Maryland a typical percentage adder that would capture this customer benefit would be set at 15.7% unto itself.²⁷ Skumatz reported that this value was a “high value NEB” which exhibited little variation within a program or between measure types.²⁸ Indeed, Skumatz notes, imparting knowledge to participants so that they know how to “control their bills” is sometimes one of the primary objectives of an energy efficiency program.²⁹

²⁷ Skumatz reports in Maryland that her values have been discounted to one-half to one-fifth of the full value that would be supported by current research. In other words, these values have already been discounted by between 50% and 80%.

²⁸ Skumatz Maryland, at 31.

²⁹ Skumatz Maryland, at 42.