OCC EXHIBIT ________ 77

FILE

BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of The East Ohio Gas Company d/b/a Dominion East Ohio for Authority to Increase Rates for its Gas Distribution Service.	)	Case No. 07-829-GA-AIR
In the Matter of the Application of The East Ohio Gas Company d/b/a Dominion East Ohio for Approval of an Alternative Rate Plan for its Gas Distribution Service.	)	Case No. 07-830-GA-ALT
In the Matter of the Application of The East Ohio Gas Company d/b/a Dominion East Ohio for Approval to Change Accounting Methods.	)	Case No. 07-831-GA-AAM
In the Matter of the Application of The East Ohio Gas Company d/b/a Dominion East Ohio for Approval of Tariffs to Recover Certain Costs Associated with a Pipeline Infrastructure Replacement Program Through an Automatic Adjustment Clause and for Certain Accounting Treatment.	)	Case No. 08-169-GA-ALT
In the Matter of the Application of The East Ohio Gas Company d/b/a Dominion East Ohio for Approval of Tariffs to Recover Certain Costs Associated with Automated Meter Reading and for Certain Accounting Treatment.	)	Case No. 06-1453-GA-UNC

REBUTTAL TESTIMONY AND EXHIBITS OF
OF
ROGER D. COLTON

ON BEHALF OF THE
OFFICE OF THE OHIO CONSUMERS' COUNSEL
10 West Broad St., Suite 1800
Columbus, OH 43215

August 26, 2008

OCC EXHIBIT ________

TABLE OF CONTENTS

I. INTRODUCTION

Q1. PLEASE STATE YOUR NAME AND ADDRESS.

A2. My name is Roger Colton. My address is Fisher, Sheehan & Colton, Public Finance and General Economics, 34 Warwick Road, Belmont, Massachusetts, 02478.

Q2. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A2. I am a principal in the firm of Fisher Sheehan & Colton, Public Finance and General Economics of Belmont, Massachusetts. In that capacity, I provide technical assistance to a variety of federal and state agencies, consumer organizations and public utilities on rate and customer service issues involving telephone, water/sewer, natural gas and electric utilities.

Q3. FOR WHOM ARE YOU TESTIFYING IN THIS PROCEEDING?

A3. I am testifying on behalf of the Office of the Ohio Consumers' Counsel ("OCC") of Columbus, Ohio.

Q4. PLEASE DESCRIBE YOUR PROFESSIONAL BACKGROUND.

A4. I work primarily on low-income utility issues. This involves regulatory work on rate and customer service issues, as well as research into low-income usage, payment patterns, and affordability programs. At present, I am working on various projects in the states of New Hampshire, Maryland, Pennsylvania, North Carolina, Ohio, Indiana, Iowa, Arkansas, Colorado, New Mexico, Oregon and Washington. My clients include state agencies (*e.g.*, Pennsylvania Office of Consumer Advocate, Maryland Office of Peoples Counsel, North Carolina Department of Justice, Iowa Department of Human Rights), federal agencies (*e.g.*, U.S. Department of Health and Human Services), community-based organizations (*e.g.*, Community Action of New Mexico, Coalition to Keep Indiana Warm, Community Action Partnership of Oregon), and private utilities (*e.g.*, Entergy Services, Tacoma Public Utilities). In addition to state- and utility-specific work, I engage in national work in the United States and Canada. For example, I am currently working on a national study of the responses of water utilities to the payment troubles of residential customers for the American Water Works Association Research Foundation. In 2007, I was part of a team that performed a multi-sponsor public/private national study of low-income energy assistance programs.

Q5. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND.

A5. After receiving my undergraduate degree from Iowa State University (1975), I obtained further training in both law and economics. I received my law degree from the University of Florida in 1981. I received my Masters Degree (economics) from the McGregor School (Antioch University) in 1993.

Q6. HAVE YOU AUTHORED ARTICLES ON PUBLIC UTILITY REGULATORY ISSUES?

A6. Yes. I have published more than 80 articles in scholarly and trade journals, primarily on low-income utility and housing issues. I have published an equal number of technical reports for various clients on energy, water, telecommunications and other associated low-income utility issues. A list of my professional publications is appended as Attachment RC-1.

Q7. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS OR OTHER UTILITY COMMISSIONS?

A7. Yes. I have previously testified before the Public Utilities Commission of Ohio ("PUCO" or "Commission") on a variety of low-income energy and telecommunication issues. In addition, I have testified in regulatory proceedings in more than 30 states and various Canadian provinces on a wide range of low-income water, telecommunications and energy issues. Proceedings in which I have previously appeared as an expert witness are listed in Attachment RC-1.

II. PURPOSE OF YOUR TESTIMONY

Q8. PLEASE EXPLAIN THE PURPOSE OF YOUR TESTIMONY.

A8. My testimony is presented in rebuttal to testimony sponsored by Staff witness Stephen Puican. More specifically, after considering the context within which the Company's change in rate design will occur, I rebut the following three statements made by Mr. Puican:

- First, I rebut Mr. Puican's statement that "usage data indicates that low-income customers are, on average, not low-usage customers" (Puican Direct, at 7);

- Second, I rebut Mr. Puican's statement that "although PIPP customer usage may not be a perfect representation of all low-income customer usage, it is the best readily available proxy" (Puican Direct, at 7); and

- Third, I rebut Mr. Puican's statement that "because high usage customers will benefit from the SFV rate design, and low-income customers are more likely to be high-usage customers, it is reasonable to conclude that low-income customers are more likely to actually benefit from SFV."

In brief, I conclude that income is directly related to natural gas consumption and expenditures. As income increases, natural gas usage increases. As a result, I conclude that a move to a straight fixed variable ("SFV") rate structure will disproportionately harm low-income, low-use customers. The increase in bills to low-income customers places an unfair burden on those customers least able to afford such an increase.

III. LOW-INCOME ENERGY BURDENS IN OHIO

Q9. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A9. In this section of my testimony, I consider the context within which Dominion East Ohio Gas Company ("DEO" or "the Company") is proposing a rate increase for low-income customers. In addition to proposing an overall revenue increase through increased rates, the Company is proposing to reduce expenses collected through its volumetric charges and to reallocate the collection of those expenses to a fixed monthly charge. This process of reallocation from volumetric to fixed charges will have the effect, as I describe in detail below, of further increasing rates to low-use, low-income customers. I conclude that the Company's low-income customers are not capable of absorbing the increased natural gas rates that are included in the Company's filing.

A. Low-Income Home Energy Affordability.

Q10. PLEASE DESCRIBE THE STATUS OF HOME ENERGY AFFORDABILITY IN OHIO.

A10. Home energy bills, including natural gas bills, pose a crushing burden to low-income households in Ohio today. The standard measure of the affordability of home energy is based on home energy burdens. Home energy burdens represent bills as a percentage of income. The difference between an affordable home energy bill and actual home energy bills is known as the Home Energy Affordability Gap.[1] In Ohio, the Home Energy Affordability Gap is large and getting larger. The 2007 Affordability Gap for households with income at or below 185% of the Federal Poverty Level[2] reached $1,571 per

---

[1] In calculating the Home Energy Affordability Gap, affordability is defined as a 6% home energy burden. For a household with an income of $10,000, in other words, an "affordable" home energy bill is $600. If that household has an actual home energy bill of $900, the household has an energy burden of 9%, and has a Home Energy Affordability Gap of $300.

[2] The generally accepted measure of "being poor" in the United States today indexes a household's income to the "Federal Poverty Level" published each year by the U.S. Department of Health and Human Services (HHS). The Poverty Level looks at income in relation to household size. This measure recognizes that a three-person household with an annual income of $6,000 is, in fact, "poorer" than a two-person household with an annual income of $6,000. The federal government establishes a uniform "Poverty Level" for the 48 contiguous states. A household's "level of Poverty" refers to the ratio of that household's income to the Federal Poverty Level. For example, the year 2005 Poverty Level for a two-person household was $12,830. A two-person household with an income of $6,415 would thus be living at 50% of Poverty.

household.[3] Ohio's 2007 Affordability Gap represents an increase of more than 125% over the Affordability Gap experienced by Ohio households as recently as 2004. The 2004 Home Energy Affordability Gap in Ohio was $694 per household.[4]

Q11. IS THE INCREASE IN THE OVERALL PER-HOUSEHOLD HOME ENERGY AFFORDABILITY GAP THE ONLY AFFORDABILITY CONCERN IN OHIO?

A11. No. One concern about the Home Energy Affordability Gap in Ohio is the extent to which the unaffordability of home energy is now reaching into the more moderate income levels. Schedule RDC-1 shows the home energy burdens by Federal Poverty Level for each year 2004 through 2007, the most recent year available. As can be seen from Schedule RDC-1, in 2007, home energy bills approached 10% of income for households at 150 – 185% of Federal Poverty Level for the first time. These more moderate income households experienced a home energy burden of only 6.7% as recently as 2004.

At the same time, the burden of home energy bills continues to escalate for the lowest income Ohio households. The home energy burden for households with income below

[3] There is no magic to the use of the 185% of Poverty Level figure. The annual Home Energy Affordability Gap is calculated for households at or below 185% of the Federal Poverty Level. It does not extend to 200% of the Federal Poverty Level. In addition, while Affordability Gap figures are published for particular ranges of the Federal Poverty Level (e.g., 0 – 50% of Poverty; 50 – 75% of Poverty), the aggregate statewide figure is published for all households at or below 185% of Poverty Level.

[4] Programs such as Ohio's PIPP are viewed as resources to help fill the Affordability Gap, not to reduce it.

50% of the Federal Poverty Level increased to more than 65%. This means is that $0.65 of every dollar of income for these households is devoted simply to home energy bills. For households with income between 50% and 74% of the Federal Poverty Level, home energy bills exceeded 25% of income, while for households with income between 75% and 125% of Federal Poverty Level, home energy burdens were between 12% and 15% of household income.

Q12. HOW MANY OHIO HOUSEHOLDS LIVE WITH THESE HOME ENERGY BURDENS?

A12. A substantial number of Ohio households live with the annual incomes associated with these unaffordable home energy burdens. While more than 215,000 Ohio households lived with income at or below 50% of the Federal Poverty Level at the time of the 2000 Census, 125,000 more lived with income between 50% and 74% of Poverty. An additional roughly 135,000 more households lived with income between 75% and 99% of the Federal Poverty Level. The numbers of Ohio households by Poverty Level are set forth in Schedule RDC-2. While I have not specifically examined the number or proportion of households at or below 185% of Federal Poverty Level using natural gas as their primary heating fuel, published data (see, e.g., Schedule RDC-14) indicates that roughly 550,000 Ohio households at or below 150% of Poverty Level (67%) use natural gas. This is consistent with the state's overall 65 – 70% penetration of natural gas within the residential population as a whole. I discuss the specific numbers of households that use natural gas, disaggregated by income level, in more detail below.

Q13. HAVE NATURAL GAS PRICES CONTRIBUTED TO THIS INCREASE IN THE OHIO HOME ENERGY AFFORDABILITY GAP?

A13. Yes. According to the Energy Information Administration ("EIA") of the U.S. Department of Energy (DOE), winter natural gas prices in Ohio have increased more than 33% since 2004 (from $0.956/ccf to $1.275/ccf).[5] In contrast, incomes have not increased that quickly. 100% of the Federal Poverty Level for a three-person household, for example, increased from $15,670 in 2004 to $17,600 in 2007, an increase of only 12.3%[6]. When you have home energy prices increasing faster than incomes, the Home Energy Affordability Gap will increase accordingly.

Q14. WHAT IS THE IMPACT OF INCREASING HOME ENERGY BURDENS IN OHIO?

A14. One of the impacts of the increasing home energy burdens in Ohio is the extent to which such burdens place fundamental needs at risk. One such fundamental need is the accessibility to affordable shelter. Like home energy, the affordability of shelter is measured by the "burden" which shelter costs place upon household income. Households

[5] Energy Information Administration, Natural Gas Monthly, Table 21 (May 2004), Table 19 (May 2007).

[6] $17,600 - $15,670 = $1,930 / $15,670 = 0.123.

are considered to be at risk if their shelter costs exceed 30% of household income.[7] "Shelter costs" include not only rent and mortgage payments, but include home utilities as well (excepting telephone).[8] Schedule RDC-3 shows the increasing shelter burdens being borne by low-income households in Ohio. While 68% of renters with annual income below $10,000 had gross rent burdens -- "gross rents" include utility costs -- of more than 30% at the time of the 2000 Census, that proportion had increased to 72% by the time of the 2006 American Community Survey. As with the Home Energy Affordability Gap analysis, the impact of moving more moderate households into unaffordable burdens is seen with these gross rents. While 24% of households with income between $20,000 and $34,999 had gross rent burdens of more than 30% at the time of the 2000 Census, that proportion had increased to 43% by the time of the American Community Survey. While 4% of Ohio households with incomes of between $35,000 and $50,000 had gross rent burdens of more than 30% at the time of the 2000 Census, that proportion had tripled (to 12%) by the time of the 2006 American Community Survey.

[7] Throughout HUD's affordable housing programs, the term "cost burden" is a term of art. It is defined as the percentage of household income spent for mortgage costs or gross rent. According to HUD programs, households spending more than 30 percent of income for these housing costs are considered to be "cost-burdened." Households spending more than 50 percent are considered to be "severely cost-burdened." See, e.g., 24 CFR Subtitle A, Section 91.5 (definition of "cost burden"). This 30-percent standard is generally accepted. Consider, for example, the annual survey of housing affordability published by the National Low-Income Housing Coalition (NLIHC) ("Out of Reach: Why Everyday People Can't Afford Housing"). NLIHC describes the contents of its report as follows: "For each jurisdiction, the report calculates the amount of money a household must earn in order to afford a rental unit at a range of sizes (0, 1, 2, 3, and 4 bedrooms) at the area's Fair Market Rent (FMR), based on the generally accepted affordability standard of paying no more than 30% of income for housing costs." http://www.nlihc.org/oor/oor2008 (accessed July 19, 2008).

[8] See e.g., 24 CFR §5.100 (2008).

Q15. CAN YOU ATTRIBUTE THESE INCREASING SHELTER BURDENS TO HOME ENERGY COSTS?

A15. Yes. I have examined home energy bills as a percentage of the Fair Market Rent ("FMR") for two-bedroom units in each county in Ohio. FMRs are published annually by the U.S. Department of Housing and Urban Development ("HUD") to represent rents at the 40th percentile. This means that 40% of all rents are lower than the FMR, while 60% are more than the FMR. As I discuss above, FMRs are like the "gross rent" reported by the Census, including not only the contract rent for the housing itself, but all utilities (except telephone service). In 2004, 54 of Ohio's counties had FMRs in which home energy exceeded 22% of the FMR, while home energy exceeded 25% of the FMR in 30 counties. In only two (2) Ohio counties did home energy exceed 30% of the FMR. By 2007, however, home energy exceeded 22% of FMR in 87 of Ohio's 88 counties. Indeed, in 2007, in 73 counties, home energy exceeded 25% of FMR, while home energy exceeded 30% of FMR in 59 counties. Customers for whom utility costs exceed 20% of total shelter costs are generally considered to be over-burdened. Clearly, recent increases in home energy prices are threatening the affordability of basic shelter in Ohio.

IV. THE RELATIONSHIP BETWEEN INCOME AND NATURAL GAS USAGE

Q16. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A16. In this section of my testimony, I rebut the testimony of Staff witness Stephen Puican that low-income customers are, on average, high usage customers. More specifically, I examine the natural gas expenditure patterns in Ohio to assess what relationship exists between income and natural gas consumption. I conclude that a direct relationship exists between income and natural gas consumption. As income increases, natural gas usage and expenditures increase as well. A variety of data supports this conclusion.

A. State-Specific Ohio Data.

Q17. HAVE YOU EXAMINED OHIO SPECIFIC DATA TO ASSESS THE RELATIONSHIP BETWEEN NATURAL GAS USAGE AND INCOME?

A17. I have examined data produced by the U.S. Census Bureau setting forth natural gas bills by income level for the State of Ohio. While the Census data does not contain usage data, per se, the data on expenditures will, nonetheless, provide reasonable insights into the relative use of natural gas by income level.

The Ohio data is set forth in Schedule RDC-4. In this schedule, I present natural gas monthly expenditures as reported by the 2006 American Community Survey, the most recent Census data available. The American Community Survey collects annual data on selected household and housing characteristics in years between the Decennial Census. As can be seen, natural gas expenditures increase as each income tier increases in Ohio. The monthly 2006 expenditures for households with income between $150,000 and $250,000 are twice as high as the monthly expenditures for households with income less than $10,000 ($158.60 vs. $65.90).

Indeed, the median income in Ohio in 2006 was $44,532. The monthly natural gas expenditure for the income range encompassing that median income ($40,000 - $50,000) was $98.20, more than 50% higher than expenditures for households with income less than $10,000 (the lowest income level) ($65.90), but only 60% of expenditures for households with income greater than $250,000 (the highest income level) ($158.60). Schedule RDC-5 presents the same data graphically. The graphic presentation of the data reveals in clear terms the continuous increase in natural gas consumption as household income increases.

Q18. WOULD THE RESULTS OF YOUR ANALYSIS CHANGE IF YOU EXAMINED THE POVERTY LEVEL OF A HOUSEHOLD RATHER THAN HOUSEHOLD INCOME?

A18. No. Poverty Level is a measure of income taking into account household size. Poverty Level recognizes, for example, that a three-person household with an income of $10,000 is "poorer" than a two-person household with an income of $10,000. Overlaying household size onto income by considering the Poverty Level of a household does not change the results of my inquiry. Schedule RDC-6 presents monthly natural gas bills for Ohio by increasing levels of the Federal Poverty Level. In Ohio, the monthly natural gas expenditure at 300% of Poverty or more is more than 130% of the natural gas expenditures for households with income below 50% of Federal Poverty Level.

Q19. IS THERE OTHER EMPIRICAL ANALYSIS THAT FINDS THIS RELATIONSHIP BETWEEN INCOME AND NATURAL GAS EXPENDITURES?

A19. Yes. The U.S. Department of Energy, Energy Information Administration ("DOE/EIA") publishes regular periodic reports based on data from its triennial Residential Energy Consumption Survey ("RECS"). In June 2001, DOE/EIA released its analysis of RECS data titled *Natural Gas Use in American Households.* In the section of its analysis that examines the relationship between income and natural gas usage, DOE/EIA states:

> The use of natural gas for any end use and as the main heating fuel was approximately the same regardless of household income category. In contrast, natural gas consumption and expenditures per household did vary by household income -- higher income households consumed more and spent more on average. Higher income households lived in larger housing units, which require more energy for heating.

(EIA/DOE, *Natural Gas Use in American Households*, Household Income, at text accompanying Figures 1 – 3) (June 2001).

Q20. DOES THE DEPARTMENT OF ENERGY'S OBSERVATION THAT "HIGHER INCOME HOUSEHOLDS LIVE IN LARGER HOUSING UNITS, WHICH REQUIRE MORE ENERGY FOR HEATING" APPLY TO OHIO?

A20. Yes. Schedule RDC-7 presents Ohio data on natural gas expenditures by income and housing unit size. In Schedule RDC-7, the size of the housing unit is measured in terms of the number of bedrooms. As can be seen from Schedule RDC-7, the difference in the average expenditures by income is far greater than the difference in expenditures by income within any given housing unit size. This is because the distribution of households by housing unit size is not similar between income ranges (see, Schedule RDC-9 and Schedule RDC-10 below, along with accompanying text). While there may be somewhat of a distinction between a higher-income household in a four-bedroom housing unit and a lower-income household in a four-bedroom housing unit, because there are far fewer lower-income households in four-bedroom units, the overall difference in consumption is much greater.

The same impacts can be seen in Schedule RDC-8. This data also presents the distribution of natural gas expenditures by housing unit size. In Schedule RDC-8, housing unit size is measured in terms of the total number of rooms (not merely the number of bedrooms). The same relationship is evident as was shown above. The average total natural gas expenditures in Ohio varies sharply by income. As with the number of bedrooms, the reason for this is that the higher-income households live in larger housing units.

Q21. IS YOUR CONCLUSION THAT HIGHER-INCOME HOUSEHOLDS LIVE IN LARGER HOUSING UNITS BASED ON OHIO DATA?

A21. Yes. This conclusion is based on two different data-based observations. First, Schedule RDC-9 presents the average income in Ohio by the number of **rooms** in a housing structure, as well as the average income in Ohio by the number of **bedrooms** in a housing structure. Schedule RDC-9 clearly shows that as housing structures get larger in Ohio, average income increases. There are two standard ways to measure the size of a housing unit. One way is to look at the number of total rooms. The other way is to look at the number of bedrooms. Both of these approaches document that smaller sized units have lower-income households.

- While the average income of an Ohio household living in a unit with one room is $22,677, the average income of a household living in an eight-room unit is $85,670.
- The same relationship holds true for housing size measured by the number of bedrooms. While the average income for an Ohio household living in a unit with one bedroom is $21,584, the average income of a household living in a housing unit with five or more bedrooms is $91,346.

In both instances (number of rooms, number of bedrooms), the average income increases as the size of the housing unit increases.

In addition, Schedule RDC-10 presents a distribution of Ohio households by the size of the housing unit in which they live, separately examining the size of the housing unit measured by the number of rooms and the number of bedrooms. The data shows that a higher proportion of lower-income households live in smaller housing units. For example, while 66% of households with income less than $10,000 live in units with two bedrooms or less, only 7% of households with income greater than $250,000 (and only 8% of households with income between $150,000 and $250,000) live in units that small.

Conversely, while 68% of households with income of $250,000 or more live in units with four or more bedrooms (and 59% of households with income between $150,000 and $250,000 do), only 7% of households with income below $10,000 live in units that large (and only 8% of households with income between $10,000 and $20,000 do).

The same observations can be made about the relationship of income and housing unit size measured in terms of the number of rooms (not merely number of bedrooms). While 73% of Ohio households with income greater than $250,000 live in housing units with eight or more rooms (and 63% of households with income between $150,000 and $250,000 do), only 5% of households with income less than $10,000 (and only 6% of households with income between $10,000 and $20,000) do.

Q22. ARE THERE OTHER WAYS TO GAIN INSIGHTS INTO THE RELATIONSHIP BETWEEN HOUSING UNIT SIZE AND INCOME?

A22. Yes. One of the implications of housing unit size documented above is a difference in housing unit **type** as well. One extension of the observation that low-income households live in smaller housing units is the further observation that low-income households tend to live in denser housing units as well. To assess the extent to which this is true in Ohio, I examined the relationship between income and the type of building in which customers have their housing units. Building type is disaggregated by the type of construction (single family, multi-family, mobile home), and the number of units in each building.

Schedule RDC-11 shows that residents of multi-family housing units are significantly disproportionately over-represented by low-income households. While 33% of gas-consuming households with income less than $10,000 live in building units with three or more units, and 22% of gas-consuming households with income between $10,000 and $20,000 do, fewer than 2% of gas-consuming households with income of $75,000 or more live in buildings with three or more units. Conversely, while between 94% and 96% of gas-consuming households with income $75,000 or higher live in single family detached homes, only 43% of gas-consuming households with income less than $10,000 do (and only 57% of households with income between $10,000 and $20,000 do).

Q23. WHAT IS THE SIGNIFICANCE OF THE DIFFERENCES IN THE TYPES OF BUILDINGS IN WHICH LOW-INCOME HOUSEHOLDS LIVE?

A23. The significance is two-fold. First, this data further supports the conclusion that low-income households have lower natural gas consumption. Schedule RDC-11 further presents natural gas expenditure data broken down by building type and income. There is a relationship between gas consumption and income holding building type constant. There is an increase from $108 for households with income less than $10,000 living in single-family detached homes to $133 for households with income between $150,000 and $250,000 (and $164 for households with income greater than $250,000) living in single family detached homes. Moreover, given the higher distribution of low-income households living in multi-family units, there is a constant increase in natural gas expenditures as income increases, from $77.60 (households with income below $10,000) to $162 (households with income greater than $250,000) for the housing unit types that I examined.

The second way in which this data is significant is the observation that the equal imposition of fixed charges on low-income, low-use customers through the proposed SFV rate design would be inequitable given the lower fixed distribution costs imposed by the low-income customers due to their higher density housing. Despite the differences between customer types, based on income, this cost-shifting will occur even though the load and density characteristics show that low-income customers do not contribute equally to causing the costs. This cost-shifting will occur even though these low-use, lower-income customers can least afford to pay the higher fixed costs.

Q24. DOES DEO HAVE THIS TYPE OF HOUSING DATA FOR ITS SERVICE TERRITORY?

A24. No. The OCC requested the Company provide data on the number and percentage of customers who either rent generally (without specifying housing type) or who rent an apartment, but DEO indicated that it does not maintain such information.[9] OCC asked DEO to provide data on the number and percentage of PIPP customers who rent, who

[9] See Company response to OCC Interrogatory Nos. 331 and 332.

rent apartments, or who rent homes, but again the Company noted that it does not maintain this information.[10]

Q25. IS THE DIFFERENCE IN EXPENDITURES BASED ON INCOME ATTRIBUTABLE TO USAGE RATHER THAN TO A RATE STRUCTURE?

A25. Yes. The association documented above, based on comprehensive Ohio-specific information, shows two relationships. First, low-income households tend to live in smaller housing units. Second, smaller housing units tend to have lower gas consumption. As a result, the natural gas consumption of low-income households is, on average, lower than the natural gas consumption of higher income households.

B. The Federal Data.

Q26. IS THE OHIO DATA YOU DISCUSS ABOVE CONCERNING THE RELATIONSHIP BETWEEN HOUSEHOLD INCOME AND NATURAL GAS CONSUMPTION CONSISTENT WITH OTHER DATA ON NATURAL GAS EXPENDITURES AND CONSUMPTION?

A26. Yes. The relationships identified in the Ohio-specific data are the same relationships identified by the U.S. Department of Energy ("DOE") in its assessment of the association between natural gas consumption and income. Schedule RDC-12 presents U.S DOE data on the relationship between income and natural gas consumption. This data, based on the

[10] See Company response to OCC Interrogatory Nos. 334-336.

tri-annual Residential Energy Consumption Survey ("RECS"), shows that natural gas consumption increases as income increases. This is true not only for total natural gas consumption generally, but for natural gas space heating and water heating specifically as well. In each instance, a lower-income household not only has consumption lower than the next tier of higher-income households, but also has consumption lower than the residential average.

Q27. IS THE DOE DATA SPECIFIC TO OHIO?

A27. No. The state-specific data I reported above is obtained from the American Community Survey prepared annually by the U.S. Census Bureau. The U.S. DOE, however, does not generate state-specific data (other than for the nation's four largest states).

Q28. IS THE STATE AND NATIONAL DATA ALSO CONSISTENT WITH THE REGIONAL DATA REPORTED BY THE FEDERAL GOVERNMENT?

A28. Yes. The U.S. Department of Labor ("DOL") reports natural gas expenditures by region by income. Ohio is in the Midwest regional data reported by the Department of Labor's Consumer Expenditures Survey ("CEX"). Schedule RDC-13 presents the CEX data for the past three years (2005-2006; 2004-2005; 2003-2004). The CEX data corroborates the state-specific and national data on the relationship between natural gas consumption and income. In every one of the 24 cells (but one: $30,000 - $39,999 for 2005-2006), the Midwest natural gas expenditures for the higher income tier was more than the natural gas expenditures for the preceding lower-income tiers. Natural gas expenditures for the lowest income tiers (below $10,000) were roughly half the residential average.

Q29. WHAT IS YOUR CONCLUSION?

A29. The data showing a direct relationship between income and natural gas consumption in Ohio is compelling. The differences that are evident in the data are not small. Low-income customers have lower usage not only as compared to high-income customers, but also when compared to average customers as well. In addition, the national data is consistent. The national data developed by the U.S. DOE, the regional data developed by the U.S. DOL, and the state-specific data developed by the Census Bureau all find the same relationship. Finally, the data is internally consistent. While DOE reports that income is related to natural gas usage because of differences in housing unit sizes -- that relationship is confirmed when housing unit size is overlaid on income and natural gas expenditures in the State of Ohio using state-specific data.

V. LOW-INCOME SURROGATES

Q30. HOW DOES THE STAFF EVALUATE THE CONSUMPTION OF LOW-INCOME OHIO CUSTOMERS?

A30. Staff witness Stephen Puican argues that low-income consumers have natural gas consumption that is higher than residential customers generally. Mr. Puican uses DEO's PIPP population as its sample of low-income customers upon which to base this analysis.

Q31. IS THERE REASON TO USE PARTICIPANTS IN OHIO'S PIPP AS A SURROGATE FOR LOW-INCOME HOUSEHOLDS FOR PURPOSES OF DETERMINING THE RELATIONSHIP BETWEEN INCOME AND NATURAL GAS CONSUMPTION?

A31. There is no reason to use Ohio's PIPP customers as a surrogate for Ohio's low-income population. The population of PIPP customers, in order to be an adequate surrogate for the low-income population as a whole, would need to demonstrate characteristics as to income mix, household size mix, and housing unit size mix that are similar to the low-income population as a whole. There is no reason to turn to PIPP as a surrogate, with its attendant difficulties in establishing comparability, when the most comprehensive statewide data base of low-income Ohio households available is otherwise reasonably accessible. The Census Bureau provides statewide data on low-income households. There is no question of whether the data generated by the Census Bureau through the American Community Survey is representative of the low-income population as a whole.

Q32. IS THERE REASON TO BELIEVE THAT PARTICIPANTS IN OHIO'S PIPP PROGRAM ARE NOT AN APPROPRIATE SURROGATE FOR OHIO'S LOW-INCOME CUSTOMERS?

A32. Yes. Using Ohio's PIPP customers as a surrogate for low-income households is not only unnecessary, but the PIPP population is an inappropriate surrogate for the low-income population as a whole. The PIPP population is not representative of Ohio's low-income population as a whole. Under the Ohio PIPP program, a customer is responsible for paying a designated percentage of income for his or her home energy bill. PIPP requires that a household pay 10% of his or her income toward the jurisdictional utility providing the primary source of heat and 5% of income toward the jurisdictional utility providing the secondary source of heating. These PIPP requirements will likely exclude households with lower energy bills. That level of exclusion is substantial.

Q33. WHAT IS THE BASIS FOR YOUR CONCLUSION THAT THE PERCENTAGE OF INCOME PAYMENT WOULD RESULT IN A SUBSTANTIAL EXCLUSION OF LOW-USE CUSTOMERS?

A33. I was a member of a team that prepared a multi-state study of low-income rate assistance programs throughout the nation in 2007. Along with the staff of Apprise, Inc., a New Jersey-based consulting firm, we prepared a detailed analysis of low-income assistance programs in 13 states. Ohio was one of the states we studied.

Our 2007 multi-sponsor study made several Ohio findings that are relevant to whether the PIPP population is representative of the broader low-income population in Ohio. Our 2007 study found that the number of Ohio low-income households -- "low-income" was, for purposes of this study, defined as having income at or below 150% of the Federal Poverty Level -- with natural gas burdens disaggregated by burden level. Our findings are presented in Schedule RDC-14. We found that exactly half (50%) of Ohio's low-income natural gas customers had natural gas burdens of below the minimum necessary for those households to gain benefits from participation in the Ohio PIPP.[11] Indeed, nearly one-quarter of Ohio's low-income natural gas customers had natural gas burdens of less than 5% (half that needed for those customers to receive benefits through participation in PIPP). When you exclude low-use customers from PIPP participation,[12] the average usage of those participants will be higher than the total population as a whole (which includes the low-use customers).

Q34. IS THIS INCONSISTENT WITH YOUR ARTICULATION OF HOME ENERGY BURDENS EARLIER IN YOUR TESTIMONY?

A34. No. My testimony about the Home Energy Affordability Gap examined average burdens for total energy consumption for all fuels. The home energy burdens reported in that discussion were not limited exclusively to natural gas bills.

Q35. IS THERE ANY OTHER EMPIRICAL EVALUATION EXAMINING THE RELATIVE CONSUMPTION OF PIPP AND NON-PIPP CUSTOMERS?

A35. Yes. The July 2006 evaluation of the Ohio weatherization program reports that PIPP participants use 20% more natural gas than do non-PIPP participants. This is true, that

[11] The point is that if your energy bill is low due to conservation, energy efficiency or some other factor, the bill may n fact be lower than paying 10% of the household income. In that case, a customer would choose not to participate in PIPP because PIPP is actually more expensive.

[12] An argument can also be made that when you are paying based on income instead of based on usage, some customers may not see the advantage to conserving and using less.

evaluation found, even though lower use customers are beginning to turn to PIPP as natural gas prices increase. PIPP participants have homes that are 30% leakier, have more occupants, and are less likely to live in mobile homes than are non-PIPP participants.[13]

Q36. WHAT IS THE SIGNIFICANCE OF THIS DATA?

A36. The data indicate that the Ohio PIPP population is not representative of the non-PIPP customers. In essence, PIPP is targeted toward the highest usage, highest-burden households. It is inaccurate, and inappropriate, to take a program that **excludes,** by design, the 50% of households with the lowest consumption and lowest natural gas burdens, and then to assert that the consumption of program participants is representative of the low-income population as a whole.

Q37. WHY WOULD A LOW-USE, LOW-BURDEN HOUSEHOLD NOT PARTICIPATE IN PIPP?

A37. A customer that already has low-consumption, and thus a low burden, would not participate in PIPP because the PIPP objective of reducing natural gas bills by tying those bills to a percentage of income would not be served. For low-use, low-burden customers, rather than experiencing an **improvement** in their home energy affordability,

[13] M. Sami Khawaja, et al. (July 2006). Ohio Home Weatherization Assistance Program Impact E valuation, prepared for Ohio Office of Energy Efficiency, at 29, quantec, LLC: Portland (OR).

participation in PIPP would instead increase the payments they would be required to make. Indeed, under PIPP, the customer would be required, even in the non-heating season, to make *either* the percentage of income payment *or* the actual bill payment *whichever is higher* (emphasis added). A low-use, low-burden customer would not reasonably choose to participate in such a program.

Q38. WHAT IS YOUR CONCLUSION?

A38. My conclusion is that lower income households use less natural gas than do higher income households. This conclusion is based not only on the state-specific data from Ohio, but on the complete consistency in the data at all levels of inquiry. The U.S. DOE reports that lower-income households use less natural gas because they live in smaller housing units. The Ohio state-specific data confirms that households living in smaller housing units have lower natural gas bills; that substantially more lower-income households live in smaller housing units; and that lower-income households have lower natural gas bills.

I conclude further that, as I describe in more detail below, a move to an SVF rate design will unjustifiably impose the burden of bearing more of the revenue responsibility on these low-income, low-use households. As a result, the proposed move to an SFV rate design will have a substantially greater adverse impact on the households that can least afford to pay their natural gas bills with which to begin.

VI. THE LACK OF BENEFITS TO LOW-INCOME, LOW-USE CUSTOMERS.

A. The Factual Errors in Staff's Testimony.

Q39. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A39. In this section of my testimony, I will assess the accuracy of the assertion of Staff witness Stephen Puican that low-income customers will benefit from a move to a SFV rate design. I conclude that the SFV rate design proposal will disproportionately increase bills to low-income customers, increase the natural gas burdens borne by those customers, and substantively impede the ability of low-income customers to maintain affordable natural gas service. Staff witness Puican makes two assertions in justification of its SFV cost proposal. Both assertions are demonstrably in error.

Q40. PLEASE IDENTIFY THE FIRST ERRONEOUS ASSERTION MADE BY MR. PUICAN.

A40. First, Mr. Puican predicates his testimony on the assertion that "low-income customers are more likely to be high-usage customers * * *.".[14] I have documented in detail above how that statement is in error.

[14] Prefiled Direct Testimony of Stephen Puican at 7.

Q41. PLEASE IDENTIFY THE SECOND ERRONEOUS ASSERTION MADE BY MR. PUICAN.

A41. Second, Mr. Puican asserts that "it is reasonable to conclude that low-income customers are more likely to actually benefit from SFV."[15]

Q42. HOW IS THAT STATEMENT IN ERROR?

A42. As I have described in detail, the fundamental underlying predicate for Mr. Puican's statement -- that low-income customers are high usage customers -- is factually incorrect. However, there are additional ways in which the Staff's SFV rate design will harm low-income customers as well.

Consider, for example, as I have described in detail above, that there is a difference in natural gas usage of more than 300% between the lowest income and highest income customers. In particular, low-income customers impose a smaller **heating** load on the Company because they tend to live in smaller housing units. As a result, these low-income customers make less of a contribution to the need for transmission and distribution capacity. To impose an equal fixed cost on all customers through which to recover those fixed charges represents a cost subsidy **from** low use, low-income customers **to** higher use, higher-income customers. Such a reverse subsidy cannot be justified.

[15] Id.

Q43. HAVE YOU SIMULATED THE EXTENT TO WHICH THE PROPOSED COST-SHIFTING TO FIXED COSTS WOULD ADVERSELY AFFECT LOW-INCOME CUSTOMERS?

A43. Yes. I can illustrate the cost-shifting that would adversely affect low-income customers through a hypothetical. Schedule RDC-15 simulates how an increase in the assignment of costs to a fixed monthly charge will adversely affect low-income customers using a hypothetical reduction in volumetric charges along with a corresponding increase to fixed monthly charges. In Schedule RDC-15, I begin with the actual natural gas bills reported for Ohio in the American Community Survey ("ACS"). After subtracting a $5[16] per customer per month fixed customer charge from each bill, I allocate the remainder of the bill between fixed charges and commodity charges (using various proportions for fixed charges). I then calculate a total revenue per 100 customers, using the same distribution of natural gas customers over income levels as actually exists for the State of Ohio. Finally, I reduce the fixed charges by 35% and redistribute those fixed charges as an addition to the $5 fixed monthly customer charge. Having done that, I can determine the new level of total revenue from each income tier.

[16] This approximates for illustrative purposes, DEO & current $5.70 customer charge for the East Ohio and River areas and the current $4.38 customer charge for the West Ohio area.

Q44. WHAT IS THE RESULT OF YOUR ANALYSIS?

A44. My analysis shows that allocating any proportion of non-customer charge revenue to fixed charges, reducing those charges and allocating the reduced revenue to the customer charge in a revenue neutral fashion (no net increase in revenue to the Company), will result in increased bills to customers with income at or below $40,000, while customers with income at or above $75,000 will see a net reduction in their bills. Customers with incomes between $40,000 and $75,000 will experience a change in their bills of less than 1%. When I allocate 40% of the non-customer charge revenues to the fixed charges, reduce those charges by 35% and reallocate the revenue reduction to the customer charge, for example, customers with income below $10,000 see a 7% bill increase, while customers with income between $10,000 and $20,000 see a 4% bill increase (even though there is no net revenue increase to the Company). In contrast, customers with income over $250,000 experience a bill decrease of 5%, while customers with income between $150,000 and $250,000 see a bill decrease of 3%. If higher proportions of total non-customer charge revenues are assigned to the fixed charges, the percentages increase. My conclusion is that the process of reducing volumetric rates for "fixed charges," and reassigning those revenues to the fixed monthly customer charge, will result in reduced bills to higher-income, higher-use customers and increased bills to lower-income, lower-use customers.

Q45. DOES YOUR CONCLUSION DEPEND ON THE SPECIFIC FIGURES THAT YOU USE IN YOUR HYPOTHETICAL?

A45. No. While I indicate that I have simulated these impacts based on a hypothetical situation, the dynamics of the reallocation of rates between high-use and low-use customers does not depend on the specific numbers I input into the analysis. While obviously the specific results change with different numbers, in each case, there is nonetheless a reallocation of rates from high-use customers to low-use customers.

B. The Reverse Subsidy Created by an SFV Rate Design.

Q46. HOW DOES THE STAFF'S SFV RATE DESIGN HARM LOW-INCOME, LOW-USE CUSTOMERS?

A46. The Staff's SFV rate design has, implicit within it, the assumption that the distribution facilities required to serve a small residence are the same as those required to serve a larger residence. In making that assumption, however, what Staff means to assert, I believe, is that the distribution facilities required to serve a small residence are most likely the same as those required to serve a larger residence, **everything else equal**. The data I examined in detail above, however, clearly demonstrates that everything else is **not** equal and that there are real cost differences based on housing size and income. The data I examine documents that small units are not simply associated with lower consumption, but they are also associated with increased density. I presented data supporting this conclusion above, when I considered how lower usage is associated with higher density buildings (e.g., multi-family as contrasted to single-family detached homes). The conclusion is further confirmed here, as I discuss the data relating to income and the density of housing within a given geographic area.

Q47. HOW DID YOU CONSIDER THE DENSITY OF HOUSING AS MEASURED BY THE NUMBER OF HOUSING UNITS PER GEOGRAPHIC AREA?

A47. I examined housing density data for Census tracts within the 29 counties that East Ohio Gas serves in Ohio.[17] Census data is comprised of several different levels. One of the smallest levels is the Census tract, a geographic area comprised of sufficient land for the Census Bureau to report data on roughly 4,000 to 8,000 persons. Because Census tracts can have varying population densities to them, they do not necessarily represent the same size of geography. Through its "Census Tract Relationship Files," however, the Census provides land area data that can be used to calculate housing unit densities. The Census reports "land area" in thousands of square meters. I have converted those thousand square meters into acres (a thousand square meters is roughly 0.247 acres) and determined the number of housing units per square acre for each Census tract. I then rank each Census

[17] The Public Utility Commission of Ohio ("PUCO") lists on its web site the counties served by each of Ohio's distribution gas utilities.

tract by income (as measured by median household income) and by the density of housing.

Q48. WHAT DID YOU FIND?

A48. The implicit condition contained in the Staff's SFV rate design -- that distribution costs size do not vary based on housing unit size all else equal -- fails in that the "all else equal" condition fails in fact. I find that housing density and income are correlated in the Census tracts of the 29 counties served by East Ohio Gas. I ranked the 691 Census tracts for which I had data by median income and by the density of housing units per acre. I then divided the Census tracts into quintiles for analysis. A "quintile" represents 20% of the total. The "first quintile" of income includes the 20% of Census tracts with the highest median income. The "first quintile" of Census tracts by density includes the 20% of Census tracts with the lowest number of housing units by acre. Each quintile has roughly 139 Census tracts in it.

What I found was that only two (2) of the Census tracts falling into the lowest quintile (by income) were in the quintile with the least density, while only 14 of the Census tracts falling into the lowest quintile (by income) were in the top two quintiles (by density). In contrast, 68 of the Census tracts falling into the lowest quintile (by income) fell into the quintile with the **greatest** density, while 101 of the lowest income Census tracts fell into the bottom two quintiles (by density).

In contrast, only four (4) of the highest income Census tracts fell into the quintile of Census tracts with the greatest density. In contrast, 38 of the highest income Census tracts fell into the quintile with the least density, while 86 fell into the top two quintiles with the least density.

To the extent that natural gas distribution costs decrease as housing unit density increases, lower income households impose a lower distribution cost on the Company. There can be little question but that income and density are correlated in the Company's service territory.

While the lowest quintile (by income) had an average density of 3.60 housing units per acre, the highest quintile (by income) had an average density of 0.19 units per acre. Staff's implicit assertion in support of the proposed SFV rate design that all housing units are equal is demonstrably in error.

VII. CONCLUSION

Q49. WHAT DO YOU CONCLUDE?

A49. I conclude that Mr. Puican mis-specifies the analysis to be undertaken in considering the benefits or lack of benefits in imposing uniform fixed distribution charges through its recommended SFV rate design. In addition to looking at the level of consumption, and at the size of the housing unit standing alone, Mr. Puican should have further considered the implications of the size of a housing unit. Mr. Puican should have further considered the density of housing. In fact, the density of housing sharply varies within the Company's Ohio service territory. Moreover, the density of housing is related to income as well. In addition to the proposed SFV rate design shifting costs from higher-income to lower-income households because of usage, the SFV rate design shifts costs from higher-income to lower-income households based on density as well.

As a result, not only will low-income households be charged higher rates, they will be charged higher rates for costs that they did not cause the Company to incur. One basic principle of ratemaking is that rates should reflect costs. To the extent practicable, one set of customers should not be charged for costs that a different set of customers causes a utility to incur. Because higher density customers do not cause the Company to incur the same level of distribution expenses, charging those low-use, high-density customers a fixed charge at the same level as higher-use, lower density customers will create a cross-subsidy. Because of this cross-subsidy inherent in the SFV rate design, and because the cross-subsidy flows from low-income customers who are having a difficult time in affording their bills with which to begin to higher-use, higher income customers, the Staff recommendation urging adoption of an SFV rate design should be rejected.

Q50. DO YOU BELIEVE THAT A PILOT LOW INCOME TARIFF SUCH AS THAT APPROVED IN DUKE CASE NO. 07-589-GA-AIR WILL REMEDY THE PROBLEM OF THE SFV'S TRANSFER OF INCOME FROM LOW USAGE, LOW INCOME HOUSEHOLDS TO HIGH USAGE, HIGH INCOME HOUSEHOLDS AND PROVIDE RELIEF TO LOW INCOME HOUSEHOLDS?

A50. No. My understanding of the approved pilot program is that it only provides limited relief for ten thousand non-PIPP low income customers or less than a quarter of the estimated low income customers served by Duke in Hamilton County, and a lower percentage of customers in the 175% of poverty level group. Nor will the approved tariff help the low usage customers in the 176 – 250% of poverty guideline who are not eligible for state or federal assistance and therefore be harmed by the SFV rate design.

Q51. DOES THIS CONCLUDE YOUR TESTIMONY?

A51. Yes, it does. However, I reserve the right to incorporate any new information that may subsequently become available. I also reserve the right to supplement my testimony in the event the PUCO Staff fails to support the recommendations made in the Staff Report, and/or if there is any change to positions made in the Staff Report.

CERTIFICATE OF SERVICE

It is hereby certified that a true copy of the foregoing the *Rebuttal Testimony of Roger D. Colton on Behalf of the Office of the Ohio Consumers' Counsel* has been served via First Class US Mail (electronically upon DEO & DEO Counsel), this 26th day of August, 2008.

Joseph P. Serio
Assistant Consumers' Counsel

PARTIES OF RECORD

Stephen Reilly
Anne Hammerstein
Attorney General's Office
Public Utilities Section
180 East Broad Street, 9th Floor
Columbus, Ohio 43215

David A. Kutik
Dominion East Ohio
Jones Day
North Point, 901 Lakeside Ave.
Cleveland, Ohio 44114-1190

Barth E. Royer
Dominion Retail, Inc.
Bell & Royer Co., LPA
33 South Grant Avenue
Columbus, Ohio 43215-3900

Joseph P. Meissner
Legal Aid Society of Cleveland
1223 West Sixth Street
Cleveland, Ohio 44113

Mark A. Whitt
Andrew J. Campbell
Dominion East Ohio
Jones Day
P.O Box 165017
Columbus, Ohio 43216-5017

John W. Bentine
Mark S. Yurick
Interstate Gas Supply
Chester, Willcox & Saxbe LLP
65 East State St., Ste. 1000
Columbus, Ohio 43215-4213

M. Howard Petricoff
Stephen Howard
Integrys Energy Services, Inc.
Vorys, Sater, Seymour &Pease LLP
52 East Gay St., P.O. Box 1008
Columbus, Ohio 43216-1008

David Rinebolt
Colleen Mooney
Ohio Partners for Affordable Energy
P.O. Box 1793
Findlay, Ohio 45839-1793

John M. Dosker
General Counsel
Stand Energy Corporation
1077 Celestial St., Ste. 110
Cincinnati, Ohio 45202-1629

Stephen M. Howard
Ohio Gas Marketers Group
Vorys, Sater, Seymour &Pease LLP
52 East Gay St., P.O. Box 1008
Columbus, Ohio 43216-1008

Todd M. Smith
Utility Workers Union Of America
Local G555
Schwarzwald & McNAir LLP
616 Penton Media Building
1300 East Ninth Street
Cleveland, Ohio 44114

David F. Boehm
Michael L. Kurtz
Ohio Energy Group
Boehm, Kurtz & Lowry
36 East Seventh Street, Suite 1510
Cincinnati, Ohio 45202

W. Jonathan Airey
Gregory D. Russell
Ohio Oil & Gas Association
Vorys, Sater, Seymour &Pease LLP
52 East Gay St., P.O. Box 1008
Columbus, Ohio 43216-1008

Samuel C. Randazzo
Daniel J. Neilsen
Joseph M. Clark
Industrial Energy Users-Ohio
McNees, Wallace & Nurick
21 East State St., Ste. 1700
Columbus, Ohio 43215

Schedule RDC-1

Ohio Home Energy Burdens: 2004 – 2007

	2004	2005	2006	2007
Poverty Level	Home Energy Burdens by Poverty Level			
Below 50%	44.5%	46.6%	53.9%	65.4%
50 – 74%	17.8%	18.6%	21.6%	26.2%
75 – 99%	23.7%	13.3%	15.4%	18.7%
100 – 124%	9.9%	10.4%	12.0%	14.6%
125 – 149%	8.2%	8.5%	9.8%	12.0%
150 – 185%	6.7%	7.0%	8.1%	9.9%
	Ohio Home Energy Affordability Gap (per household)			
Total below 185%	$694	$789	$1,084	$1,571

SOURCE: www.HomeEnergyAffordabilityGap.com.

Schedule RDC-2

Ohio Households by Ratio of Income to Federal Poverty Level	
Ratio of Income to Federal Poverty Level	Number of Households
Below 50%	215,269
50 – 74%	123,479
75 – 99%	135,728
100 – 124%	157,432
125 – 149%	175,437
150 – 185%	259,273
SOURCE: Home Energy Affordability Gap: 2007 (Ohio Fact Sheet) (April 2008) (based on 2000 Census).	

Schedule RDC-3

Gross Rent as Percentage of Income by Income Level (Ohio)

	Renters (2000)			Renters (2004)			Renters (2005)			Renters (2006)		
Income	Total	Rent Burden > 30%	Pct > 30%	Total	Rent Burden > 30%	Pct > 30%	Total	Rent Burden > 30%	Pct > 30%	Total	Rent Burden > 30%	Pct > 30%
Below $10,000	264,828	180,703	68%	284,970	197,328	69%	282,866	203,630	72%	271,289	196,091	72%
$10,000 - $19,999	281,381	187,647	67%	285,901	214,764	75%	293,348	228,329	78%	292,790	232,349	79%
$20,000 - $34,999	355,232	83,531	24%	350,818	132,975	38%	337,086	142,442	42%	338,869	146,704	43%
$35,000 - $49,999	216,372	8,923	4%	206,897	17,404	8%	209,726	19,377	9%	204,990	24,545	12%

SOURCE: 2000 Census (STF3). American Community Survey (2004, 2005, 2006).

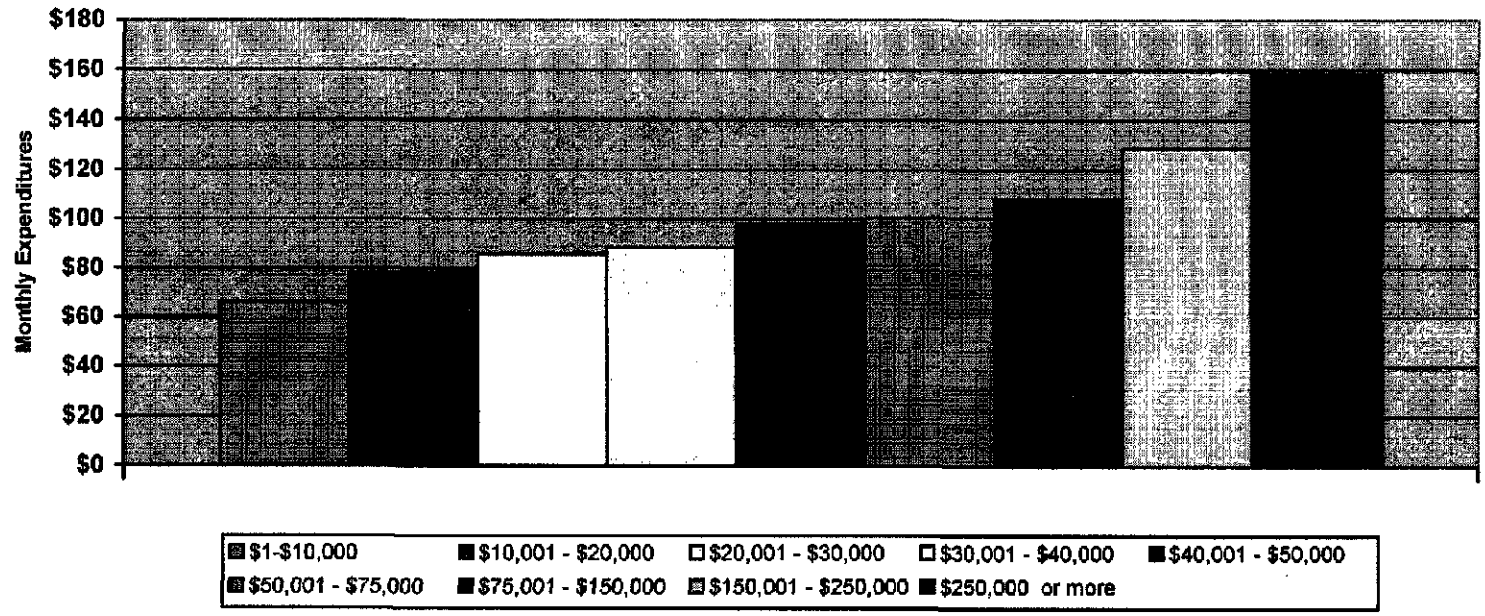
Schedule RDC-4

Monthly Gas Expenditures by Income (Ohio)
2006 American Community Survey

	Gas Expenditures (monthly)
$1-$10,000	$65.90
$10,001 - $20,000	$77.90
$20,001 - $30,000	$85.60
$30,001 - $40,000	$88.80
$40,001 - $50,000	$98.20
$50,001 - $75,000	$100.70
$75,001 - $150,000	$108.40
$150,001 - $250,000	$128.60
$250,000 or more	$158.60

Schedule RDC-5

Monthly Gas Expenditures by Income (Ohio 2006)



Schedule RDC-6

Monthly Natural Gas Expenditures by Ratio of Income to Federal Poverty Level (Ohio)
(American Community Survey: 2006)

	Gas	Avg Poverty Level within Range
1 - 50%	$82.50	21.6%
51 - 100%	$87.20	76.0%
101 - 150%	$94.50	126.8%
151 - 200%	$99.60	176.4%
201 - 250%	$105.80	225.7%
251 - 300%	$100.20	276.1%
301% or more	$111.30	441.9%

Schedule RDC-7

Monthly Natural Gas Expenditures by Number of Bedrooms in Home and Income (Ohio)
(American Community Survey: 2006)

No. of BRms	$1 - $10,000	$10 - $20,000	$20 - $30,000	$30 - $40,000	$40 - $50,000	$50 - $75,000	$75 - $150,000	$150- $250,000	$250,000+
0 bedrooms	$12.10	$12.40	$27.80	$16.60	$42.10	$13.00	$5.40	xxx	$3.00
1 bedroom	$28.70	$26.10	$30.20	$29.10	$29.30	$30.10	$35.90	$23.20	$56.50
2 bedrooms	$63.40	$73.50	$71.40	$75.50	$71.10	$79.10	$82.90	$84.20	$91.90
3 bedrooms	$94.50	$104.30	$102.80	$99.50	$109.50	$103.80	$104.30	$111.70	$119.70
4 bedrooms	$132.60	$121.60	$132.90	$123.90	$128.10	$123.60	$121.90	$142.50	$174.70
5+ bedrooms	$135.30	$113.20	$131.50	$123.40	$148.60	$123.10	$136.20	$158.80	$194.00
Total	$65.90	$77.90	$85.60	$88.80	$98.10	$100.70	$108.40	$128.60	$158.60

Schedule RDC-8

Monthly Natural Gas Expenditures by Number of Rooms in Home and Annual Income (Ohio)
(American Community Survey: 2006)

No. of Rooms	$1 - $10,000	$10 - $20,000	$20 - $30,000	$30 - $40,000	$40 - $50,000	$50 - $75,000	$75 - $150,000	$150- $250,000	$250,000+
2 room	$12.00	$14.70	$18.10	$15.40	$17.80	$20.80	$8.90	$70.00	xxx
3 room	$28.30	$24.90	$27.90	$29.90	$29.50	$29.10	$29.30	$15.10	$25.40
4 room	$53.90	$61.40	$59.70	$61.70	$55.40	$64.60	$75.40	$77.90	$52.10
5 room	$79.60	$91.50	$86.80	$86.80	$87.30	$91.40	$89.00	$90.80	$92.90
6 room	$102.30	$107.40	$107.60	$103.40	$113.10	$105.00	$106.30	$100.60	$100.30
7 room	$116.40	$109.40	$122.90	$113.90	$119.90	$112.30	$110.80	$108.20	$166.20
8 room	$129.90	$117.40	$123.30	$110.00	$117.00	$121.00	$114.10	$131.80	$151.80
9 or more	$128.70	$133.00	$126.20	$127.60	$140.70	$119.30	$127.20	$156.30	$179.60
Total	$65.90	$77.90	$85.60	$88.80	$98.10	$100.70	$108.40	$128.60	$158.60

One room units were excluded because higher income ranges had insufficient sample sizes for the Census Bureau to report results.

Schedule RDC-9

Average Income by Number of Rooms or Bedrooms in Housing Unit (Ohio)
(American Community Survey: 2006)

	Average Income by Number of Rooms/Bedrooms	
Number of Rooms/Bedrooms	Rooms	Bedrooms
1	$22,677	$21,584
2	$23,098	$25,237
3	$26,181	$38,737
4	$33,408	$58,915
5 /a/	$43,739	$91,346
6	$54,116	
7	$67,657	
8	$85,670	
9 /b/	$114,606	
Total	$58,106	$58,106

NOTES:

/a/ For bedrooms, data is reported for 5 or more.
/b/ For rooms, data is report for 9 or more.

Schedule RDC-10

Distribution of Housing Units by Income and Housing Unit Size (Bedrooms and Rooms)
(American Community Survey: 2006)

Bedrooms	$1 - $10,000	$10 - $20,000	$20 - $30,000	$30 - $40,000	$40 - $50,000	$50 - $75,000	$75 - $150,000	$150- $250,000	$250,000 or more
No bedroom	2%	1%	1%	0%	0%	0%	0%	0%	0%
1 Bedroom	27%	19%	13%	8%	5%	3%	1%	1%	1%
2 Bedrooms	37%	38%	34%	32%	28%	21%	10%	7%	6%
3 Bedrooms	26%	33%	41%	47%	50%	54%	51%	33%	24%
4 Bedrooms	5%	7%	10%	10%	14%	19%	32%	47%	48%
5 or more bedrooms	2%	1%	2%	2%	2%	3%	5%	12%	20%
Total BDS	100%	100%	100%	100%	100%	100%	100%	100%	100%

Rooms	$1 - $10,000	$10 - $20,000	$20 - $30,000	$30 - $40,000	$40 - $50,000	$50 - $75,000	$75 - $150,000	$150- $250,000	$250,000 or more
1 Room	1%	1%	1%	0%	0%	0%	0%	0%	0%
2 Rooms	7%	4%	3%	2%	1%	1%	0%	0%	0%
3 Rooms	19%	14%	9%	6%	4%	2%	1%	1%	1%
4 Rooms	25%	23%	19%	16%	12%	9%	4%	3%	1%
5 Rooms	22%	25%	28%	27%	25%	21%	12%	6%	6%
6 Rooms	14%	18%	21%	24%	26%	26%	21%	11%	8%
7 Rooms	6%	9%	10%	13%	16%	19%	22%	16%	12%
8 Rooms	3%	4%	6%	7%	9%	12%	20%	24%	19%
9 Or More Rooms	2%	2%	4%	5%	6%	9%	20%	39%	54%
Total RMS	100%	100%	100%	100%	100%	100%	100%	100%	100%

Schedule RDC-11

Distribution of Housing Units by Income and Housing Unit Type (Gas Users) (Ohio) (American Community Survey 2006)									
Building Type	$1 - $10,000	$10 - $20,000	$20 - $30,000	$30 - $40,000	$40 - $50,000	$50 - $75,000	$75 - $150,000	$150- $250,000	$250,000 or more
Mobile home	8%	8%	6%	5%	4%	2%	1%	1%	0%
1-family detached	43%	57%	71%	77%	81%	88%	94%	95%	96%
1-family attached	7%	4%	4%	4%	4%	3%	3%	3%	2%
2 apartments	9%	8%	5%	4%	3%	2%	1%	0%	1%
3 – 4 units	9%	7%	3%	3%	2%	2%	0%	0%	0%
5 – 9 units	12%	6%	4%	3%	3%	2%	1%	0%	1%
10 – 19 units	8%	5%	3%	3%	2%	1%	1%	0%	0%
20 – 49 units	2%	1%	2%	1%	1%	0%	0%	0%	0%
50 or more units	2%	3%	1%	1%	1%	1%	0%	0%	0%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%

Natural Gas Bill By Housing Unit Type (Ohio) (American Community Survey 2006)									
Housing Unit Type	$1 - $10,000	$10 - $20,000	$20 - $30,000	$30 - $40,000	$40 - $50,000	$50 - $75,000	$75 - $150,000	$150- $250,000	$250,000 or more
Mobile home	$74.40	$64.70	$67.10	$69.90	$77.60	$69.90	$66.80	$64.00	$3.00
1-family detached	$108.10	$112.70	$113.40	$108.80	$115.00	$109.80	$113.00	$133.20	$164.60
1-family attached	$69.60	$89.20	$90.30	$99.30	$86.10	$84.70	$92.10	$94.20	$71.40
2 apartments	$99.80	$104.90	$103.20	$125.80	$91.70	$99.10	$137.50	$123.10	$135.10
3 – 4 units	$52.30	$60.10	$53.50	$50.80	$78.10	$64.30	$78.60	$184.70	$3.00
5 – 9 units	$31.90	$31.70	$34.50	$46.20	$57.50	$58.80	$38.10	$2.00	$160.20
10 – 19 units	$23.90	$17.80	$34.10	$32.60	$35.80	$33.90	$51.40	$26.00	xxx
20 – 49 units	$12.10	$28.80	$8.00	$33.90	$33.10	$21.30	$52.70	$72.50	$1.00
50 or more units	$14.20	$7.50	$10.50	$26.80	$17.60	$17.30	$23.20	$1.90	$2.00
Total	$77.60	$89.70	$98.50	$100.50	$106.60	$104.90	$111.00	$131.00	$162.00

Schedule RDC-12

Natural Gas Consumption (thousand cf) by Income (2001)

	Total	Less than $10,000	$10,000 - $29,999	$30,000 - $49,999	$50,000 or more	Below Poverty Level	Eligible for Federal Assistance
Total energy (gas)	70	54	63	68	81	56	64
Space heating (gas)	54	45	50	52	59	45	50
Water heating (gas)	19	15	17	19	22	16	17

SOURCE: Residential Energy Consumption Survey, Tables CE1-3c, CE2-3c, CE4-3c.

Schedule RDC-13

Natural Gas Expenditures by Household Income Before Taxes (Midwest region)										
	Total Midwest	Less than $5,000	$5,000 - $9,999	$10,000 - $14,999	$15,000 - $19,999	$0,000 - $29,999	$30,000 - $39,999	$40,000 - $49,999	$50,000 - $69,999	$70,000 or more
2005 - 2006	$750	$302	$339	$524	$565	$692	$673	$722	$808	$1,026
2004 - 2005	$676	$288	$351	$466	$504	$596	$614	$663	$710	$943
2003 - 2004	$613	$293	$349	$456	$506	$539	$543	$598	$661	$842
SOURCE: Table 31, U.S. Department of Labor, Consumer Expenditures Survey (annual)										

Schedule RDC-14

Natural Gas Burdens for Low-Income Households (Ohio) (2005)		
	Number of Households	Percent of Households
0% to less than 5%	132,255	23%
5% to less than 10%	139,874	26%
10% to less than 15%	107,864	20%
15% or more	170,946	31%
Total	543,294	100%
State Report: Ohio (2007), at Tables 3B and 5B.		

Schedule RDC-15

Bill Impact by Income Level of Allocating 35% of *Fixed Costs to* Increased Customer Charge By Varying Proportions of Non-Customer Charge Revenue Allocated to Fixed Costs				
	Proportion of Non-Customer Charge Revenue Allocated to Fixed Costs			
	30%	35%	40%	45%
$1 - $10,000	5%	6%	7%	8%
$10,001 - $20,000	3%	3%	4%	4%
$20,001 - $30,000	2%	2%	2%	2%
$30,001 - $40,000	1%	1%	2%	2%
$0,001 - $50,000	0%	0%	0%	0%
$50,001 - $75,000	0%	0%	0%	0%
$75,001 - $150,000	-1%	-1%	-1%	-1%
$150,001 - $250,000	-2%	-3%	-3%	-4%
$205,001 or more	-4%	-5%	-5%	-6%
Total Company	0%	0%	0%	0%

Attachment RC-1

ROGER D. COLTON

BUSINESS ADDRESS:

Fisher Sheehan & Colton
Public Finance and General Economics
34 Warwick Road, Belmont, MA 02478
617-484-0597 (voice) *** 617-484-0594 (fax)
roger@fsconline.com (e-mail)
http://www.fsconline.com (www address)

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)

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.

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.

<u>Community Action Research Group (CARG):</u> 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, Belmont Housing Trust, Inc.
Member: Advisory Board: Fair Housing Center of Greater Boston.
Past Member: 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: 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)
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. (1996). ***Funding Fuel Assistance: State and Local Strategies to Help Pay Low-Income Home Energy Bills,*** Fisher, Sheehan and Colton, Public Finance and General Economics: Belmont, MA (1996).

Colton and Sheehan. (1995). ***The Other Part of the Year: Low-Income Households and Their Need for Cooling: A State-by-State Look at Low-Income Summer Electric Bills,*** Flying Pencil Publications: Portland, OR.

Colton. (1995). ***Energy Efficiency and the Low-Income Consumer: Planning, Designing and Financing,*** Flying Pencil Publications: Portland, OR.

Colton and Sheehan. (1994). ***On the Brink of Disaster: A State-by-State Look at Low-Income Winter Natural Gas Heating Bills,*** Flying Pencil Publications: Portland, OR.

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 (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.***

Colton. (2000). "Aggregation and the Low-Income Consumer." ***LEAP Newsletter.***

Colton. (1999). "Challenging Entrance and Transfer Fees in Mobile Home Park Lot Rentals." ***Clearinghouse Review.***

Colton and Adams (1999). "Y2K and Communities of Color," ***Media Alert: The Quarterly Publication of the National Black Media Coalition.***

Colton and Sheehan (1999). "The Problem of Mass Evictions in Mobile Home Parks Subject to Conversion." ***Journal of Housing and Community Development Law*** (American Bar Association).

Colton (1999)."Utility Rate Classifications and Group Homes as "Residential" Customers," ***Clearinghouse Review***.

Colton (1998). "Provider of Last Resort: Lessons from the Insurance Industry." ***The Electricity Journa.***

Colton and Adams (1998). "Fingerprints for Check Cashing: Where Lies the Real Fraud," ***Media Alert: The Quarterly Publication of the National Black Media Coalition.***

Colton. (1998). "Universal Service: A Performance-Based Measure for a Competitive Industry," ***Public Utilities Fortnightly***.

Colton, Roger and Stephen Colton (1998). "Evaluating Hospital Mergers," 17 ***Health Affairs*** 5:260.

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.

Colton (1997). "Fair Housing and Affordable Housing: Availability, Distribution and Quality." 1997 ***Colloqui: Cornell Journal of Planning and Urban Issues*** 9.

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.

Colton and Sheehan. (1995). "Utility Franchise Charges and the Rental of City Property." 72 ***New Jersey Municipalities*** 9:10.

Colton. (1995). "Arguing Against Utilities' Claims of Federal Preemption of Customer-Service Regulations." 29 ***Clearinghouse Review*** 772.

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

Colton and Morrissey. (1995). "Tenants' Rights to Pretermination Notice in Cases of Landlords' Nonpayment of Utilities". 29 ***Clearinghouse Review*** 277.

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

Colton (1994). "Energy Efficiency and Low-Income Housing: Energy Policy Hurts the Poor." XVI ***ShelterForce: The Journal of Affordable Housing Strategies*** 9.

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

Colton (1994). "Institutional and Regulatory Issues Affecting Bank Product Diversification Into the Sale of Insurance," ***Journal of the American Society of CLU and ChFC.***

Colton. (1993). "The Use of State Utility Regulations to Control the 'Unregulated' Utility." 27 ***Clearinghouse Review*** 443.

Colton and Smith. (1993). "The Duty of a Public Utility to Mitigate 'Damages' from Nonpayment through the Offer of Conservation Programs." 3 ***Boston University Public Interest Law Journal*** 239.

Colton and Sheehan. (1993). "Cash for Clunkers Program Can Hurt the Poor," 19 ***State Legislatures: National Conference of State Legislatures*** 5:33.

Colton. (1993). "Consumer Information and Workable Competition in the Telecommunications Industry." XXVII ***Journal of Economic Issues*** 775.

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.

Colton and Smith. (1992). "Protections for the Low-Income Customer of Unregulated Utilities: Federal Fuel Assistance as More than Cash Grants." 13 ***Hamline University Journal of Public Law and Policy*** 263.

Colton (1992). "CHAS: The Energy Connection," 49 ***The Journal of Housing*** 35, *reprinted*, 19 ***Current Municipal Problems*** 173.

Colton (March 1991). "A Cost-Based Response to Low-Income Energy Problems." ***Public Utilities Fortnightly.***

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.

Colton. (1990). "Customer Consumption Patterns within an Income-Based Energy Assistance Program." 24 ***Journal of Economic Issues*** 1079

Colton (1990). "Heightening the Burden of Proof in Utility Shutoff Cases Involving Allegations of Fraud." 33 ***Howard L. Review*** 137.

Colton (1990). "When the Phone Company is not the Phone Company: Credit Reporting in the Post-Divestiture Era." 24 ***Clearinghouse Review*** 98.

Colton (1990). "Discrimination as a Sword: Use of an 'Effects Test' in Utility Litigation." 37 ***Washington University Journal of Urban and Contemporary Law*** 97, *reprinted*, XIII ***Public Utilities Anthology*** 813.

Colton (1989). "Statutes of Limitations: Barring the Delinquent Disconnection of Utility Service." 23 ***Clearinghouse Review*** 2.

Colton & Sheehan. (1989). "Raising Local Revenue through Utility Franchise Fees: When the Fee Fits, Foot It." 21 ***The Urban Lawyer*** 55, *reprinted*, XII ***Public Utilities Anthology*** 653, *reprinted*, Freilich and Bushek (1995). ***Exactions, Impacts Fees and Dedications: Shaping Land Use Development and Funding Infrastructure in the Dolan Era***, American Bar Association: Chicago.

Colton (1989). "Unlawful Utility Disconnections as a Tort: Gaining Compensation for the Harms of Unlawful Shutoffs." 22 ***Clearinghouse Review*** 609.

Colton, Sheehan & Uehling. (1987). "Seven cum Eleven: Rolling the Toxic Dice in the U.S. Supreme Court," 14 ***Boston College Environmental L. Rev.*** 345.

Colton & Sheehan. (1987). "A New Basis for Conservation Programs for the Poor: Expanding the Concept of Avoided Costs," 21 ***Clearinghouse Review*** 135.

Colton & Fisher. (1987). "Public Inducement of Local Economic Development: Legal Constraints on Government Equity Funding Programs." 31 ***Washington University J. of Urban and Contemporary Law*** 45.

Colton & Sheehan. (1986). "The Illinois Review of Natural Gas Procurement Practices: Permissible Regulation or Federally Preempted Activity?" 35 ***DePaul Law Review*** 317, *reprinted*, IX ***Public Utilities Anthology*** 221.

Colton (1986). "Utility Involvement in Energy Management: The Role of a State Power Plant Certification Statute." 16 ***Environmental Law*** 175, *reprinted*, IX ***Public Utilities Anthology*** 381.

Colton (1986). "Utility Service for Tenants of Delinquent Landlords," 20 ***Clearinghouse Review*** 554.

Colton (1985). "Municipal Utility Financing of Energy Conservation: Can Loans only be Made through an IOU?". 64 ***Nebraska Law Review*** 189.

Colton (1985). "Excess Capacity: A Case Study in Ratemaking Theory and Application." 20 ***Tulsa Law Journal*** 402, *reprinted*, VIII ***Public Utilities Anthology*** 739.

Colton (1985). "Conservation, Cost-Containment and Full Energy Service Corporations: Iowa's New Definition of `Reasonably Adequate Utility Service.'" 34 ***Drake Law Journal*** 1.

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.

Colton (1982). "Mandatory Utility Financing of Conservation and Solar Measures." 3 ***Solar Law Reporter*** 167.

Colton (1982). "The Use of Canons of Statutory Construction: A Case Study from Iowa, or When Does `GHOTI' Spell `Fish'?" 5 ***Seton Hall Legislative Journal*** 149.

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.

Other Publications

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.

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

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 The: 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.

Colton (2003). ***The Economic Development Impacts of Home Energy Assistance in Colorado***, Colorado Energy Assistance Foundation.

Colton (2003). ***Measuring the Outcomes of Home Energy Assistance through a Home Energy Insecurity Scale***, prepared for the U.S. Department of Health and Human Services, Administration for Children and Families.

Colton (2002). ***Winter Weather Payments: The Impact of Iowa's Winter Utility Shutoff Moratorium On Utility Bill Payments by Low-Income Customer***, prepared for Iowa Department of Human Rights.

Colton (2002). ***A Fragile Income: Deferred Payment Plans and the Ability-to-Pay of Working Poor Utility Customers***, prepared for National Fuel Funds Network.

Colton (2002). ***Credit where Credit is Due: Public Utilities and the Earned Income Tax Credit for Working Poor Utility Customers***, prepared for National Fuel Funds Network.

Colton (2001). ***Integrating Government-Funded and Ratepayer-Funded Low-Income Energy Assistance Programs***, prepared for U.S. Department of Health and Human Services (HHS) and Oak Ridge National Laboratory.

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

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

Colton (2001). ***Group Buying of Propane and Fuel Oil in New York State: A Feasibility Study***, prepared for New York State Community Action Association.

Colton (2000). ***Establishing Telecommunications Lifeline Eligibility: The Use of Public Benefit Programs and its Impact on Lawful Immigrants***, prepared for Dayton (OH) Legal Aide.

Colton (2000). ***Outreach Strategies for Iowa's LIHEAP Program Innovation in Improved Targeting***, prepared for Iowa Department of Human Rights.

Colton (1999). ***Integration of LIHEAP with Energy Assistance Programs Created through Electric and/or Natural Gas Restructuring***, prepared for U.S. Department of Health and Human Services, Administration for Children and Families (Nov. 1999).

Colton (1999). ***Fair Housing in the Suburbs: The Role of a Merged Fleet Boston in The Diversification of the Suburbs Report to the Federal Reserve Board Concerning the Merger of BankBoston Corp. and Fleet Financial Group***, prepared for Belmont Fair Housing Committee/Belmont Housing Partnership.

Colton (1999). ***Measuring LIHEAP's Results: Responding to Home Energy Unaffordability***, prepared for Iowa Department of Human Resources.

Colton (1999). ***Monitoring the Impact of Electric Restructuring on Low-Income Consumers: The What, How and Why of Data Collection***, prepared for U.S. Department of Health and Human Services, Administration for Children and Families.

Colton (1999). ***Developing Consumer Education Programs in a Restructured Electric Industry***, prepared for Central Missouri Counties Community Development Corporation.

Colton (1999). ***Electric Restructuring and the Low-Income Consumer: Legislative Implications for Colorado***, prepared for Colorado General Assembly.

Colton (1998). ***Low-Income Electric Rate Affordability in Virginia: Funding Low-Income Assistance***, prepared for Virginia Council Against Poverty.

Colton and Alexander (1998). ***The Implications of an Increased Federal Role in the Regulation of Electricity on State Regulation of Consumer Protection and Universal Service Programs.***

R.Colton and S.Colton (1998). ***The Occupational Control of Tuberculosis in Homeless Shelters***, prepared for the U.S. Occupational Safety and Health Administration.

Colton (1998). ***The Connection Between Affordable Housing and Educational Excellence in Belmont***, prepared for Belmont Fair Housing Committee.

Colton (1998). ***Serving the Affordable Housing Needs of Belmont's Older Residents***, prepared for Belmont Fair Housing Committee.

Colton (1998). ***The Costs of a Universal Service Fund in Minnesota: Electric and Natural Gas***, prepared for the Energy Cents Coalition.

Colton (1998). ***Controlling the Occupational Exposure to Tuberculosis in Homeless Shelters: Applying Federal OSHA Standards to Volunteers***, prepared for the U.S. Occupational Safety and Health Administration.

Colton (1997). ***Public Housing Utility Allowances for the Metro Dade Housing Agency, prepared for Legal Services Corporation of Greater Miami.***

Colton (1997). ***Low-Income Energy Needs in Maryland: An Overview***, prepared for Maryland Office of Peoples Counsel.

Colton (1997). ***Structuring a Public Purpose Distribution Fee for Missouri***, prepared for Missouri Department of Natural Resources.

Colton (1997). ***The Low-Income Interest in Utility Mergers and Acquisitions***

Colton (1997). ***The Obligation to Serve and a Restructured Electric Industry***, prepared for U.S. Department of Energy, Oak Ridge National Laboratory.

Colton (1997). ***Structuring and Evaluating a Direct Vendor Payment Shadow Billing Program for Publicly Assisted Housing in Houston***, prepared under contract to Gulf Coast Legal Foundation (with funding by Houston Lighting Company).

Colton (1997). ***The For-Profit Conversion of the New England Education Loan Marketing Corporation: Lessons from Non-Profit Hospital Conversions.***

Colton (1997). ***Rental Housing Affordability in Burlington, Vermont: A Report to the Burlington City Council..***

Colton (1997). ***Structuring a "Wires Charge" for New Hampshire: A Framework for Administration and Operation***, prepared under contract to the New Hampshire Community Action Association.

Colton (1996). ***Setting Income Eligibility for Fuel Assistance and Energy Efficiency Programs in a Competitive Electric Industry: The Marginal Impacts of Increasing Household Income.***

Colton (1996). ***Fair Housing and Affordable Housing in Belmont, Massachusetts: Data on Availability, Distribution and Quality.***

Colton and Sheehan (1996). ***Fair Housing Analysis of Impediments Study for Washington County (Oregon)..***

Colton (1996). ***Structuring a Low-Income "Wires Charge" for New Jersey,*** prepared for Citizens Against Rate Escalation (CARE).

Colton (1996). ***Structuring a Low-Income "Wires Charge" for Kentucky,*** prepared for Louisville Legal Aide Association.

Colton (1996). ***Structuring a Low-Income "Wires Charge" for Iowa,*** prepared for Iowa Bureau of Human Resources, Office of Weatherization.

Colton (1996). ***Structuring a Low-Income "Wires Charge" for Montana,*** prepared for Energy Share of Montana.

Colton (1996). ***Structuring a Low-Income "Wires Charge" for Oklahoma,*** prepared for Oklahoma State Association of Community Action Agencies.

Colton (1996). ***Structuring a Low-Income "Wires Charge" for Ohio,*** prepared for Ohio Legal Services Corporation.

Colton (1996). ***Structuring a Low-Income "Wires Charge" for Indiana,*** prepared for Indiana Citizen Action Campaign.

Colton (1996). ***Shawmut Bank and Community Reinvestment in Boston: Community Credit Needs and Affordable Housing.***

Colton (1995). ***Understanding "Redlining" in a Competitive Electric Utility Industry).***

Colton (1995). ***Energy Efficiency as a Credit Enhancement: Public Utilities and the Affordability of First-Time Homeownership.***

Colton (1995). ***Competition in the Electric Industry: Assessing the Impacts on Residential, Commercial and Low-Income Customers,*** prepared under contract to the National Association of Regulatory Utility Commissioners.

Colton (1995). ***Performance-Based Evaluation of Customer Collections in a Competitive Electric Utility Industry.***

Colton (1995). ***Poverty Law and Economics: Calculating the Household Budget,*** prepared for presentation to National Legal Aid and Defender Association, Substantive Law Training.

Colton (1995). ***The Need for Regulation in a Competitive Electric Utility Industry.***

Colton (1995). ***Rewriting the Social Compact: A Competitive Electric Industry and its Core Customer.***

Colton (1995). ***The Road Oft Taken: Unaffordable Home Energy Bills, Forced Mobility, and Childhood Education in Missouri,*** prepared for the Missouri Association of Head Start Directors.

Colton (revised 1995). ***Models of Low-Income Utility Rates,*** prepared under contract to Washington Gas Company.

Colton (1995). B*eyond Social Welfare: Promoting the Earned Income Tax Credit (EITC) as an Economic Development Strategy by Public Utilities.*

Colton (1995). ***Should Regulation of Electricity Depend on the Absence of Competition?***.

Colton (1995). ***Comprehensive Credit and Collection Strategies in a Competitive Electric Utility Industry***, prepared under contract to Hydro-Quebec.

Colton (1995). ***Economically Stranded Investment in a Competitive Electric Industry: A Primer for Cities, Consumers and Small Business Advocates.***

Colton (1995). ***Competitive Solicitation as an Integrated Resource Planning Model: Its Competitive Impacts on Small Businesses Serving Low-Income Households***, prepared under contract to the Arkansas State Weatherization

Colton (1995). ***Reviewing Utility Low-Income DSM Programs: A Suggested Framework for Analysis.***

Colton (1995). ***Least-Cost Integrated Resource Planning in Arkansas: The Role of Low-Income Energy Efficiency*** prepared under contract to the Arkansas State Weatherization Assistance Program.

Colton (1994). ***Addressing Low-Income Inability-to-Pay Utility Bills During the Winter Months On Tribal Lands Served By Electric Co-ops: A Model Tribal Winter Utility Shutoff Regulation*** .

Colton (1994). ***An Earned Income Tax Credit Utility Intervention Kit*** .

Colton (1994). ***Telecommunications Credit and Collections and Controlling SNET Uncollectibles***, prepared under contract to the Connecticut Office of Consumer Counsel.

Colton (1994). ***Customer Deposit Demands by U.S. West: Reasonable Rationales and the Proper Assessment of Risk***, prepared on behalf of the Staff of the Washington Utilities and Transportation Commission.

Colton (1994).***Credit and Collection Fees and Low-Income Households: Ensuring Effectiveness and Cost-Effectiveness***, prepared on behalf of the Missouri Office of Public Counsel.

Colton (1994). ***Weatherization Assistance Program Evaluations: Assessing the Impact on Low-Income Ability-to-Pay***.

Colton (1994). ***DSM Planning in a Restrictive Environment.***

- **Part 1:** ***Why Ramping Down DSM Expenditures Can Be "Pro" DSM***
- **Part 2:** ***Low-Income Opposition to DSM: Ill-Defined and Misguided***
- **Part 3:** ***Low-Income DSM Expenditures as a Non-Resource Acquisition Strategy: The Potential for Niche Marketing***

Colton (1994). ***Loan Guarantees as a Utility Investment in Energy Efficiency for Low-Income Housing.***

Colton and Sheehan.(1994). ***"Linked Deposits" as a Utility Investment in Energy Efficiency for Low-Income Housing.***

Colton (1994). ***Securitizing Utility Avoided Costs: Creating an Energy Efficiency "Product" for Private Investment in WAP.***

Colton and Sheehan (1994). ***Economic Development Utility Rates: Targeting, Justifying, Enforcing***, prepared under contract to Texas ROSE.

Colton and Sheehan (1993). ***Affordable Housing and Section 8 Utility Allowances: An Evaluation and a Proposal for Action:***

Part I: *Adequacy of Annual Allowances.*
Part II: *Adequacy of Monthly Allowances.*

Colton and Sheehan (1993). ***Identifying Savings Arising From Low-Income Programs.***

Colton (1993). ***Low-Income Programs And Their Impact on Reducing Utility Working Capital Allowances.***

Colton, *et al.* (1995). ***An Assessment of Low-Income Energy Needs in Washington State.*** Prepared under contract to the Washington state Department of Community Development.

Colton, *et al.* (1993). ***Funding Social Services Through Voluntary Contribution Programs: A Proposal for SNET Participation in Funding INFOLINE's Information and Referral Services in Connecticut.*** Prepared under contract with United Way of Connecticut.

Colton. (1993). ***Public Utility Credit and Collection Activities: Establishing Standards and Applying them to Low-Income Utility Programs.*** Prepared under contract to the national office of the American Association of Retired Persons.

Colton (1992). ***Filling the Gaps: Financing Low-Income Energy Assistance in Connecticut.*** Prepared under contract to the Connecticut State Department of Human Resources.

Colton and Quinn. (1992). ***The Impact on Low-Income People of the Increased Cost for Basic Telephone Service: A Study of Low-income Massachusetts Resident's Telephone Usage Patterns and Their Perceptions of Telephone Service Quality.*** Prepared under contract to the Massachusetts Office of the Attorney General.

Colton and Quinn. (1991). ***The ABC's of Arrearage Forgiveness.*** Prepared with a grant from the Mary Reynolds Babcock Foundation.

Colton and Sable (1991). ***A California Advocate's Guide to Telephone Customer Service Issues.*** Prepared with funding from the California Telecommunications Education Trust Fund.

Colton and Levinson. (1991). ***Energy and Poverty in North Carolina: Combining Public and Private Resources to Solve a Public and Private Problem.*** Prepared under contract to the North Carolina General Assembly.

Colton. (1991). ***The Percentage of Income Payment Plan in Jefferson County, Kentucky: One Alternative to Distributing LIHEAP Benefits.*** Prepared with funds provided by the City of Louisville, Kentucky and the Louisville Community Foundation.

Colton. (1991). ***The Energy Assurance Program for Ohio: A Cost-Based Response to Low-Income Energy Problems.*** Prepared for Cincinnati Legal Aid Society, Dayton Legal Society, and Cleveland Legal Aid Society.

Colton. (1991). ***Utility-Financed Low-Income DSM: Winning for Everybody.*** Prepared with funds provided by the Public Welfare Foundation and the Mary Reynolds Babcock Foundation.

Colton (1991). ***Percentage of Income Payment Plans as an Alternative Distribution of LIHEAP Benefits: Good Business, Good Government, Good Social Policy.*** Prepared under contract to the New England Electric System (NEES).

Colton (1991). ***The Forced Mobility of Low-Income Customers: The Indirect Impacts of Shutoffs on Utilities and their Customers.***

Colton (1990). ***Controlling Uncollectible Accounts in Pennsylvania: A Blueprint for Action.*** Prepared under contract to the Pennsylvania Office of Consumer Advocate.

Colton (1990). ***Nonparticipation in Public Benefit Programs: Lessons for Fuel Assistance.***

Colton (1990). ***Why Customers Don't Pay: The Need for Flexible Collection Techniques.*** Prepared under contract to the Philadelphia Public Advocate.

Colton (1990). ***A Regulatory Response to Low-income Energy Needs in Colorado: A Proposal.*** Prepared for the Legal Aid Society of Metro Denver.

Colton (1990). ***Determining the Cost-Effectiveness of Utility Credit and Collection Techniques.*** Prepared with funds provided by the Mary Reynolds Babcock Foundation.

Colton (1990). ***Energy Use and the Poor: The Association of Consumption with Income.***

Colton (1989). ***Identifying Consumer Characteristics Which are Important to Determining the Existence of Workable Competition in the Interexchange Telecommunications Industry.*** Prepared under contract to the Office of Public Counsel of the Florida Legislature.

Colton (1989). ***The Interexchange Telecommunications Industry: Should Regulation Depend on the Absence of Competition.*** Prepared under contract to the Office of Public Counsel of the Florida Legislature.

Colton (1989). ***Fuel Assistance Alternatives for Utah.*** Prepared under contract to the Utah State Energy Office.

Colton (1989). ***Losing the Fight in Utah: High Energy Bills and Low-Income Consumers.*** Prepared under contract with the Utah State Energy Office.

Colton (1989). ***The Denial of Local Telephone Service for Nonpayment of Toll Bills: A Review and Assessment of Regulatory Litigation*** (2d ed.).

Colton (1988). ***Customer Service Regulations for Residential Telephone Customers in the Post-Divestiture Era: A Study of Michigan Bell Telephone Company.*** Prepared under contract to the Michigan Divestiture Research Fund.

Colton (1988). ***Low-Income Utility Protections in Maine.*** (3 volumes). Prepared under contract to the Maine Public Utilities Commission.

a. Volume 1: ***An Evaluation of Low-Income Utility Protections in Maine: Winter Requests for Disconnect Permission.***
b. Volume 2: ***An Evaluation of Low-Income Utility Protections in Maine: Payment Arrangements for Maine's Electric Utilities.***
c. Volume 3: ***An Evaluation of Low-Income Utility Protections in Maine: Fuel Assistance and Family Crisis Benefits.***

Colton (1988). ***The Recapture of Interest on LIHEAP Payments to Unregulated Fuel Vendors: An Evaluation of the 1987 Maine Program.*** Prepared with a grant from the Jessie B. Cox Charitable Trust.

Colton (1988). ***An Evaluation of the Warwick (Rhode Island) Percentage of Income Payment Plan.*** Prepared under contract to the Rhode Island Governor's Office of Energy Assistance.

Colton, Hill & Fox (1986). ***The Crisis Continues: Addressing the Energy Plight of Low-Income Pennsylvanians Through Percentage of Income Plans.*** Prepared under contract to the Pennsylvania Utility Law Project.

Fisher, Sheehan and Colton (1986). ***Public/Private Enterprise as an Economic Development Strategy for States and Cities.*** Prepared under contract to the United States Department of Commerce, Economic Development Administration.

Colton (1985). ***Creative Financing for Local Energy Projects: A Manual for City and County Government in Iowa.*** Prepared under contract to the Iowa Energy Policy Council.

Colton (1985). ***The Great Rate Debate: Rate Design for the Omaha Public Power District.*** Prepared under contract to the Omaha Public Power District.

Grenier and Colton (1984). ***Utility Conservation Financing Programs for Nebraska's Publicly Owned Utilities: Legal Issues and Considerations.*** Prepared under contract to the Nebraska Energy Office.

Colton (1984). ***The Financial Implications to the Utility Industry of Pursuing Energy Management Strategies.*** Prepared under contract to the Nebraska Energy Office.

COLTON EXPERIENCE AS EXPERT WITNESS

1988 - PRESENT

CASE NAME	ROLE	CLIENT NAME	TOPIC	JURIS.	DATE
I/M/O National Grid	Witness	New Hampshire Legal Assistance	Low-income rate assistance	New Hampshire	08
I/M/O EmPower Maryland	Witness	Office of Peoples Counsel	Low-income energy efficiency	Maryland	08
I/M/O Duke Energy Carolinas Save-a-Watt Program	Witness	NC Equal Justice Foundation	Low-income energy efficiency	North Carolina	08
I/M/O Zia Natural Gas Company	Witness	Community Action New Mexico	Low-income/low-use rate design	New Mexico	08
I/M/O Universal Service Fund Support for the Affordability of Local Rural Telecomm Service	Witness	Office of Consumer Advocate	Telecomm service affordability	Pennsylvania	08
I/M/O Philadelphia Water Department	Witness	Public Advocate	Credit and Collections	Philadelphia	08
I/M/O Portland General Electric Company	Witness	Community Action--Oregon	General rate case	Oregon	08
I/M/O Philadelphia Electric Company (electric)	Witness	Office of Consumer Advocate	Low-income program	Pennsylvania	08
I/M/O Philadelphia Electric Company (gas)	Witness	Office of Consumer Advocate	Low-income program	Pennsylvania	08
I/M/O Columbia Gas Company	Witness	Office of Consumer Advocate	Low-income program	Pennsylvania	08
I/M/O Public Service Company of New Mexico	Witness	Community Action New Mexico	Fuel adjustment clause	New Mexico	08
I/M/O Petition of Direct Energy for Low-Income Aggregation	Witness	Office of Peoples Counsel	Low-income electricity aggregation	Maryland	07
I/M/O Office of Consumer Advocate et al. v. Verizon and Verizon North	Witness	Office of Consumer Advocate	Lifeline telecommunications rates	Pennsylvania	07
I/M/O Pennsylvania Power Company	Witness	Office of Consumer Advocate	Low-income program	Pennsylvania	07
I/M/O National Fuel Gas Distribution Corporation	Witness	Office of Consumer Advocate	Low-income program	Pennsylvania	07
I/M/O Public Service of New Mexico--Electric	Witness	Community Action New Mexico	Low-income programs	New Mexico	07
I/M/O Citizens Gas/NIPSCO/Vectren for Universal Service Program	Witness	Citizens Gas & Coke Utility/Northern Indiana Public Service/Vectren Energy	Low-income program design	Indiana	07
I/M/O PPL Electric	Witness	Office of Consumer Advocate	Low-income program	Pennsylvania	07
I/M/O Section 15 Challenge to NSPI Rates	Witness	Energy Affordability Coalition	Discrimination in utility regulation	Nova Scotia	07
I/M/O Philadelphia Gas Works	Witness	Office of Consumer Advocate	Low-income and residential collections	Pennsylvania	07
I/M/O Equitable Gas Company	Witness	Office of Consumer Advocate	Low-income program	Pennsylvania	07

CASE NAME	ROLE	CLIENT NAME	TOPIC	JURIS.	DATE
I/M/O Section 11 Proceeding, Energy Restructuring	Witness	Office of Peoples Counsel	Low-income needs and responses	Maryland	06
I/M/O Citizens Gas/NIPSCO/Vectren for Universal Service Program	Witness	Citizens Gas & Coke Utility/Northern Indiana Public Service/Vectren Energy	Low-income program design	Indiana	06
I/M/O Public Service Co. of North Carolina	Witness	North Carolina Attorney General/Dept. of Justice	Low-income energy usage	North Carolina	06
I/M/O Electric Assistance Program	Witness	New Hampshire Legal Assistance	Electric low-income program design	New Hampshire	06
I/M/O Verizon Petition for Alternative Regulation	Witness	New Hampshire Legal Assistance	Basic local telephone service	New Hampshire	06
I/M/O Pennsylvania Electric Co/Metropolitan Edison Co.	Witness	Office of Consumer Advocate	Universal service cost recovery	Pennsylvania	06
I/M/O Duquesne Light Company	Witness	Office of Consumer Advocates	Universal service cost recovery	Pennsylvania	06
I/M/O Natural Gas DSM Planning	Witness	Low-Income Energy Network	Low-income DSM program.	Ontario	06
I/M/O Union Gas Co.	Witness	Action Centre for Tenants Ontario (ACTO)	Low-income program design	Ontario	06
I/M/O Public Service of New Mexico merchant plant	Witness	Community Action New Mexico	Low-income energy usage	New Mexico	06
I/M/O Customer Assistance Program design and cost recovery	Witness	Office of Consumer Advocate	Low-income program design	Pennsylvania	06
I/M/O NIPSCO Proposal to Extend Winter Warmth Program	Witness	Northern Indiana Public Service Company	Low-income energy program evaluation	Indiana	05
I/M/O Piedmont Natural Gas	Witness	North Carolina Attorney General/Dept. of Justice	Low-income energy usage	North Carolina	05
I/M/O PSEG merger with Exelon Corp.	Witness	Division of Ratepayer Advocate	Low-income issues	New Jersey	05
Re. Philadelphia Water Department	Witness	Public Advocate	Water collection factors	Philadelphia	05
I/M/O statewide natural gas universal service program	Witness	New Hampshire Legal Assistance	Universal service	New Hampshire	05
I/M/O Sub-metering requirements for residential rental properties	Witness	Tenants Advocacy Centre of Ontario	Sub-metering consumer protections	Ontario	05
I/M/O National Fuel Gas Distribution Corp.	Witness	Office of Consumer Advocate	Universal service	Pennsylvania	05
I/M/O Nova Scotia Power, Inc.	Witness	Dalhousie Legal Aid Service	Universal service	Nova Scotia	04
I/M/O Lifeline Telephone Service	Witness	National Ass'n State Consumer Advocates (NASUCA)	Lifeline rate eligibility	FCC	04
Mackay v. Verizon North	Witness	Office of Consumer Advocate	Lifeline rates—vertical services	Pennsylvania	04
I/M/O Philadelphia Gas Works	Witness	Office of Consumer Advocate	Credit and collections	Pennsylvania	04

CASE NAME	ROLE	CLIENT NAME	TOPIC	JURIS.	DATE
I/M/O Citizens Gas & Coke/Vectren	Witness	Citizens Action Coalition of Indiana	Universal service	Indiana	04
I/M/O PPL Electric Corporation	Witness	Office of Consumer Advocate	Universal service	Pennsylvania	04
I/M/O Consumers New Jersey Water Company	Witness	Division of Ratepayer Advocate	Low-income water rate	New Jersey	04
I/M/O Washington Gas Light Company	Witness	Office of Peoples Counsel	Low-income gas rate	Maryland	04
I/M/O Washington Gas Light Company	Witness	Office of Peoples Counsel	Low-income gas rate	Maryland	03
Golden v. City of Columbus	Witness	Helen Golden	ECOA disparate impacts	Ohio	02
Huegel v. City of Easton	Witness	Phyllis Huegel	Credit and collection	Pennsylvania	02
I/M/O Universal Service Fund	Witness	Public Utility Commission staff	Universal service funding	New Hampshire	02
I/M/O Philadelphia Gas Works	Witness	Office of Consumer Advocate	Universal service	Pennsylvania	02
I/M/O Washington Gas Light Company	Witness	Office of Peoples Counsel	Rate design	Maryland	02
I/M/O Consumers Illinois Water Company	Witness	Illinois Citizens Utility Board	Credit and collection	Illinois	02
I/M/O Public Service Electric & Gas Rates	Witness	Division of Ratepayer Advocate	Universal service	New Jersey	01
I/M/O Pennsylvania-American Water Company	Witness	Office of Consumer Advocate	Low-income rates and water conservation	Pennsylvania	01
I/M/O Louisville Gas & Electric Prepayment Meters	Witness	Kentucky Community Action Association	Low-income energy	Kentucky	01
I/M/O NICOR Budget Billing Plan Interest Charge	Witness	Cook County State's Attorney	Rate Design	Illinois	01
I/M/O Rules Re. Payment Plans for High Natural Gas Prices	Witness	Cook County State's Attorney	Budget Billing Plans	Illinois	01
I/M/O Philadelphia Water Department	Witness	Office of Public Advocate	Credit and collections	Philadelphia	01
I/M/O Missouri Gas Energy	Witness	Office of Peoples Counsel	Low-income rate relief	Missouri	01
I/M/O Bell Atlantic--New Jersey Alternative Regulation	Witness	Division of Ratepayer Advocate	Telecommunications universal service	New Jersey	01
I/M/O T.W. Phillips Gas and Oil Co.	Witness	Office of Consumer Advocate	Ratemaking of universal service costs.	Pennsylvania	00
I/M/O Peoples Natural Gas Company	Witness	Office of Consumer Advocate	Ratemaking of universal service costs.	Pennsylvania	00
I/M/O UGI Gas Company	Witness	Office of Consumer Advocate	Ratemaking of universal service costs.	Pennsylvania	00
I/M/O PFG Gas Company	Witness	Office of Consumer Advocate	Ratemaking of universal service costs.	Pennsylvania	00
Armstrong v. Gallia Metropolitan Housing Authority	Witness	Equal Justice Foundation	Public housing utility allowances	Ohio	00

CASE NAME	ROLE	CLIENT NAME	TOPIC	JURIS.	DATE
I/M/O Bell Atlantic--New Jersey Alternative Regulation	Witness	Division of Ratepayer Advocate	Telecommunications universal service	New Jersey	00
I/M/O Universal Service Fund for Gas and Electric Utilities	Witness	Division of Ratepayer Advocate	*Design and funding of low-income programs*	New Jersey	00
I/M/O Consolidated Edison Merger with Northeast Utilities	Witness	Save Our Homes Organization	Merger impacts on low-income	New Hampshire	00
I/M/O UtiliCorp Merger with St. Joseph Light & Power	Witness	Missouri Dept. of Natural Resources	Merger impacts on low-income	Missouri	00
I/M/O UtiliCorp Merger with Empire District Electric	Witness	Missouri Dept. of Natural Resources	Merger impacts on low-income	Missouri	00
I/M/O PacifiCorp	Witness	The Opportunity Council	Low-income energy affordability	Washington	00
I/M/O Public Service Co. of Colorado	Witness	Colorado Energy Assistance Foundation	Natural gas rate design	Colorado	00
I/M/O Avista Energy Corp.	Witness	Spokane Neighborhood Action Program	*Low-income energy affordability*	Washington	00
I/M/O TW Phillips Energy Co.	Witness	Office of Consumer Advocate	Universal service	Pennsylvania	00
I/M/O PECO Energy Company	Witness	Office of Consumer Advocate	Universal service	Pennsylvania	00
I/M/O National Fuel Gas Distribution Corp.	Witness	Office of Consumer Advocate	Universal service	Pennsylvania	00
I/M/O PFG Gas Company	Witness	Office of Consumer Advocate	Universal service	Pennsylvania	00
I/M/O UGI Energy Company	Witness	Office of Consumer Advocate	Universal service	Pennsylvania	00
Re. PSCO/NSP Merger	Witness	*Colorado Energy Assistance Foundation*	*Merger impacts on low-income*	Colorado	99 - 00
I/M/O Peoples Gas Company	Witness	Office of Consumer Advocate	Universal service	Pennsylvania	99
I/M/O Columbia Gas Company	Witness	Office of Consumer Advocate	Universal service	Pennsylvania	99
I/M/O PG Energy Company	Witness	Office of Consumer Advocate	Universal service	Pennsylvania	99
I/M/O Equitable Gas Company	Witness	Office of Consumer Advocate	Universal service	Pennsylvania	99
Allerruzzo v. Klarchek	Witness	Barlow Allerruzzo	Mobile home fees and sales	Illinois	99
I/M/O Restructuring New Jersey's Natural Gas Industry	Witness	*Division of Ratepayer Advocate*	Universal service	Pennsylvania	99
I/M/O Bell Atlantic Local Competition	Witness	Public Utility Law Project	Lifeline telecommunications rates	New Jersey	99
I/M/O Merger Application for SBC and Ameritech Ohio	Witness	Edgemont Neighborhood Association	Merger impacts on low-income consumers	Ohio	98 - 99
Davis v. American General Finance	Witness	Thomas Davis	Damages in "loan flipping" case	Ohio	98 - 99
Griffin v. Associates Financial Service Corp.	Witness	Earlie Griffin	Damages in "loan flipping" case	Ohio	98 - 99
I/M/O Baltimore Gas and Electric Restructuring Plan	Witness	Maryland Office of Peoples Counsel	Consumer protection/basic generation service	Maryland	98 - 99

CASE NAME	ROLE	CLIENT NAME	TOPIC	JURIS.	DATE
I/M/O Delmarva Power and Light Restructuring Plan	Witness	Maryland Office of Peoples Counsel	Consumer protection/basic generation service	Maryland	98 - 99
I/M/O Potomac Electric Power Co. Restructuring Plan	Witness	Maryland Office of Peoples Counsel	Consumer protection/basic generation service	Maryland	98 - 99
I/M/O Potomac Edison Restructuring Plan	Witness	Maryland Office of Peoples Counsel	Consumer protection/basic generation service	Maryland	98 - 99
VMHOA v. LaPierre	Witness	Vermont Mobile Home Owners Association	Mobile home tying	Vermont	98
Re. Restructuring Plan of Virginia Electric Power	Witness	VMH Energy Services, Inc.	Consumer protection/basic generation service	Virginia	98
Mackey v. Spring Lake Mobile Home Estates	Witness	Timothy Mackey	Mobile home fees	State ct: Illinois	98
Re. Restructuring Plan of Atlantic City Electric	Witness	New Jersey Division of Ratepayer Advocate	Low-income issues	New Jersey	97-98
Re. Restructuring Plan of Jersey Central Power & Light	Witness	New Jersey Division of Ratepayer Advocate	Low-income issues	New Jersey	97-98
Re. Restructuring Plan of Public Service Electric & Gas	Witness	New Jersey Division of Ratepayer Advocate	Low-income issues	New Jersey	97-98
Re. Restructuring Plan of Rockland Electric	Witness	New Jersey Division of Ratepayer Advocate	Low-income issues	New Jersey	97-98
Appleby v. Metropolitan Dade County Housing Agency	Witness	Legal Services of Greater Miami	HUD utility allowances	Fed. court: So. Florida	97 - 98
Re. Restructuring Plan of PECO Energy Company	Witness	Energy Coordinating Agency of Philadelphia	Universal service	Pennsylvania	97
Re. Atlantic City Electric Merger	Witness	New Jersey Division of Ratepayer Advocate	Low-income issues	New Jersey	97
Re. IES Industries Merger	Witness	Iowa Community Action Association	Low-income issues	Iowa	97
Re. New Hampshire Electric Restructuring	Witness	NH Comm. Action Ass'n	Wires charge	New Hampshire	97
Re. Natural Gas Competition in Wisconsin	Witness	Wisconsin Community Action Association	Universal service	Wisconsin	96
Re. Baltimore Gas and Electric Merger	Witness	Maryland Office of Peoples Counsel	Low-income issues	Maryland	96
Re. Northern States Power Merger	Witness	Energy Cents Coalition	Low-income issues	Minnesota	96
Re. Public Service Co. of Colorado Merger	Witness	Colorado Energy Assistance Foundation	Low-income issues	Colorado	96
Re. Massachusetts Restructuring Regulations	Witness	Fisher, Sheehan & Colton	Low-income issues/energy efficiency	Massachusetts	96
Re. FERC Merger Guidelines	Witness	National Coalition of Low-Income Groups	Low-income interests in mergers	Washington D.C.	96
Re. Joseph Keliikuli III	Witness	Joseph Keliikuli III	Damages from lack of homestead	Honolulu	96

CASE NAME	ROLE	CLIENT NAME	TOPIC	JURIS.	DATE
Re. Theresa Mahaulu	Witness	Theresa Mahaulu	Damages from lack of homestead	Honolulu	95
Re. Joseph Ching, Sr.	Witness	Re. Joseph Ching, Sr.	Damages from lack of homestead	Honolulu	95
Joseph Keaulana, Jr.	Witness	Joseph Keaulana, Jr.	Damages from lack of homestead	Honolulu	95
Re. Utility Allowances for Section 8 Housing	Witness	*National Coalition of Low-Income Groups*	Fair Market Rent Setting	Washington D.C.	95
Re. PGW Customer Service Tariff Revisions	Witness	Philadelphia Public Advocate	Credit and collection	Philadelphia	95
Re. Customer Responsibility Program	Witness	Philadelphia Public Advocate	Low-income rates	Philadelphia	95
Re. Houston Lighting and Power Co.	Witness	Gulf Coast Legal Services	Low-Income Rates	Texas	95
Re. Request for Modification of Winter Moratorium	Witness	Philadelphia Public Advocate	Credit and collection	Philadelphia	95
Re. Dept of Hawaii Homelands Trust Homestead Production	Witness	*Native Hawaiian Legal Corporation*	*Prudence of trust management*	Honolulu	94
Re. SNET Request for Modified Shutoff Procedures	Witness	Office of Consumer Counsel	Credit and collection	Connecticut	94
Re. Central Light and Power Co.	Witness	United Farm Workers	Low-income rates/DSM	Texas	94
Blackwell v. Philadelphia Electric Co.	Witness	Gloria Blackwell	Role of shutoff regulations	Penn. courts	94
U.S. West Request for Waiver of Rules	Witness	Wash. Util. & Transp. Comm'n Staff	Telecommunications regulation	Washington	94
Re. U.S. West Request for Full Toll Denial	Witness	Colorado Office of Consumer Counsel	Telecommunications regulation	Colorado	94
Washington Gas Light Company	Witness	Community Family Life Services	Low-income rates & energy efficiency	Washington D.C.	94
Clark v. Peterborough Electric Utility	Witness	Peterborough Community Legal Centre	Discrimination of tenant deposits	Ontario, Canada	94
Dorsey v. Housing Auth. of Baltimore	Witness	Baltimore Legal Aide	Public housing utility allowances	Federal district court	93
Penn Bell Telephone Co.	Witness	Penn. Utility Law Project	Low-income phone rates	Pennsylvania	93
Philadelphia Gas Works	Witness	Philadelphia Public Advocate	Low-income rates	Philadelphia	93
Central Maine Power Co.	Witness	Maine Assn Ind. Neighborhoods	Low-income rates	Maine	92
New England Telephone Company	Witness	Mass Attorney General	Low-income phone rates	Massachusetts	92
Philadelphia Gas Co.	Witness	Philadelphia Public Advocate	Low-income DSM	Philadelphia	92
Philadelphia Water Dept.	Witness	Philadelphia Public Advocate	Low-income rates	Philadelphia	92
Public Service Co. of Colorado	Witness	Land and Water Fund	Low-income DSM	Colorado	92
Sierra Pacific Power Co.	Witness	Washoe Legal Services	Low-income DSM	Nevada	92

CASE NAME	ROLE	CLIENT NAME	TOPIC	JURIS.	DATE
Consumers Power Co.	Witness	Michigan Legal Services	Low-income rates	Michigan	92
Columbia Gas	Witness	Penn. State Office of Consumer Advocate (OCA)	Energy Assurance Program	Pennsylvania	91
Mass. Elec. Co.	Witness	Mass Elec Co.	Percentage of Income Plan	Massachusetts	91
AT&T	Witness	TURN	Inter-LATA competition	California	91
Generic Investigation into Uncollectibles	Witness	Penn OCA	Controlling uncollectibles	Pennsylvania	91
Union Heat Light & Power	Witness	Kentucky Legal Services (KLS)	Energy Assurance Program	Kentucky	90
Philadelphia Water	Witness	Philadelphia Public Advocate (PPA)	Controlling accounts receivable	Philadelphia	90
Philadelphia Gas Works	Witness	PPA	Controlling accounts receivable	Philadelphia	90
Mississippi Power Co.	Witness	Southeast Mississippi Legal Services Corp.	Formula ratemaking	Mississippi	90
Kentucky Power & Light	Witness	KLS	Energy Assurance Program	Kentucky	90
Philadelphia Electric Co.	Witness	PPA	Low-income rate program	Philadelphia	90
Montana Power Co.	Witness	Montana Ass'n of Human Res. Council Directors	Low-income rate proposals	Montana	90
Columbia Gas Co.	Witness	Penn. OCA	Energy Assurance Program	Pennsylvania	90
Philadelphia Gas Works	Witness	PPA	Energy Assurance Program	Philadelphia	89
Southwestern Bell Telephone Co.	Witness	SEMLSC	Formula ratemaking	Mississippi	90
Generic Investigation into Low-income Programs	Witness	Vermont State Department of Public Service	Low-income rate proposals	Vermont	89
Generic Investigation into Dmnd Side Management Measures	Consultant	Vermont DPS	Low-income conservation programs	Vermont	89
National Fuel Gas	Witness	Penn OCA	Low-income fuel funds	Pennsylvania	89
Montana Power Co.	Witness	Human Resource Develop. Council District XI	Low-income conservation	Montana	88
Washington Water Power Co.	Witness	Idaho Legal Service Corp.	Rate base, rate design, cost-allocations	Idaho	88