EXHIBIT

Exhibit No.:	
Issue(s):	Cost of Service Rate Design
Witness:	Barb Meisenheimer
Type of Exhibit:	Surrebuttal
Sponsoring Party:	Public Counsel
Case Number:	GR-2009-0355
Date Testimony Prepared:	October 14, 2009

SURREBUTTAL TESTIMONY

OF

BARBARA A. MEISENHEIMER

Submitted on Behalf of
the Office of the Public Counsel

MISSOURI GAS ENERGY

Case No. GR-2009-0355

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Case No. GR-2009-0355

October 14, 2009

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Missouri Gas Energy's Tariff Sheets Designed to Increase Rates for Gas Service in the Company's Missouri Service Area.	))))	Case No. GR-2009-0355

AFFIDAVIT OF BARBARA A. MEISENHEIMER

STATE OF MISSOURI)
) ss
COUNTY OF COLE)

Barbara A. Meisenheimer, of lawful age and being first duly sworn, deposes and states:

1. My name is Barbara A. Meisenheimer. I am Chief Utility Economist for the Office of the Public Counsel.

2. Attached hereto and made a part hereof for all purposes is my surrebuttal testimony.

3. I hereby swear and affirm that my statements contained in the attached testimony are true and correct to the best of my knowledge and belief.

Barbara A. Meisenheimer

Subscribed and sworn to me this 14th day of October 2009.

NOTARY PUBLIC NOTARY SEAL STATE OF MISSOURI

SHYLAH C. BROSSIER
My Commission Expires
June 8, 2013
Cole County
Commission #09812742

Shylah C. Brossier
Notary Public

My Commission expires June 8th, 2013.

SURREBUTTAL TESTIMONY

OF

BARBARA MEISENHEIMER

CASE NO. GR-2009-0355

MISSOURI GAS ENERGY

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME, TITLE, AND BUSINESS ADDRESS.

A. Barbara A. Meisenheimer, Chief Utility Economist, Office of the Public Counsel, P. O. 2230, Jefferson City, Missouri 65102.

Q. HAVE YOU TESTIFIED PREVIOUSLY IN THIS CASE?

A. Yes, I filed direct testimony on rate design issues on September 3, 2009. I also filed rebuttal testimony on September 28, 2009.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to respond to portions of the rebuttal testimony of Russell Feingold, Jay F. Cummings and Phillip Thompson filed on behalf of Missouri Gas Energy (MGE), and the rebuttal testimony of Anne Ross filed on behalf of the Missouri Public Service Commission Staff (Staff).

II. RESPONSE TO REBUTTAL ON LOW INCOME CONSUMPTION

Q. COMPANY WITNESS DR. PHILIP B. THOMPSON SUBMITTED THE RESULTS OF A STUDY HE CONDUCTED ON 1998 TO 2000 DATA THAT ATTEMPTS TO DRAW THE CONCLUSION THAT LOW INCOME CUSTOMERS USE MORE GAS THAN HIGHER INCOME CUSTOMERS AND THEREFORE HIGHER CUSTOMER CHARGES ARE NOT

REGRESSIVE. WHAT IS YOUR RESPONES TO THE STUDY AND THE CONCLUSIONS THAT DR. THOMPSON DRAWS FROM IT?

A. Based on a description of the data used, Dr. Thompson's study is based on characteristics aggregated for customers within zip code. He then compares the characteristics of these zip codes. It is not based on an examination of comparing individual customers' income and usage characteristics. For example, a metropolitan area might include zip codes populated by a mix of high income and low income customers with differing use characteristics. His study blends these characteristics. Some zip codes might include a small geographic area consisting of a few city blocks while others might include the population of an entire town. I do not believe that Dr. Thompson's study is sufficiently disaggregated to compare specific patterns of income and consumption for low and high income households. Further, Dr. Thompson's study contradicts both historic and recent evidence regarding the relationship between income and consumption for low income households relative to households at higher income levels. Information from the U.S. Department of Energy, the U.S. Department of Health and Human Services (which administers the Low-Income Home Energy Assistance Program (LIHEAP)) and the U.S. Bureau of Labor Statistics Consumer Expenditures Survey (CES) demonstrate that on average low-income households actually have **lower** natural gas usage than higher income households.

A 2001 analysis of national energy use by household income derived from the 1997 Residential Energy Consumption Survey (RECS), appears on the U.S. Department of Energy website. This analysis concludes "...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." The 2001 and 2005 updates of the 1997 RECS also show that higher income households consume more natural gas and live in larger housing units than do low income households. See BAM SUR Schedules 3-5.

These DOE findings are consistent with results published in the LIHEAP Home Energy Notebook for Fiscal Years 2004 and 2007, by the Division of Energy Assistance within the Office of Community Services, U.S. Department of Health and Human Services. The LIHEAP Home Energy Notebook provides information on consumption by geographic region. For both 2004 and 2007, for the Midwest Region, West North Central Division that includes Missouri higher income households in the Midwest have higher average natural gas consumption than low income households. See BAM SUR Schedules 1-2.

The finding that high income consumers on average use more than low income consumers is also supported by the annual Consumer Expenditures reported by the U.S. Department of Labor, Bureau of Labor Statistics. Based on actual data provided by households, there is a direct relationship between income and natural gas expenditures. The results of the Consumer Expenditure Survey for 1998 to 2008 are shown below.

Average Annual Expenditures On Natural Gas									
	Before Tax Income								
Year	Less than $5,000	$5,000 to $9,999	$10,000 to $14,999	$15,000 to $19,999	$20,000 to $29,999	$30,000 to $39,999	$40,000 to $49,999	$50,000 to $69,999	$70,000 and Over
1998	139	193	205	241	266	254	292	324	415
1999	129	162	199	233	233	241	270	302	398
2000	165	172	227	259	263	292	307	359	458
2001	214	226	317	307	352	382	403	464	579
2002	158	164	221	237	279	319	340	342	485
2003	189	207	295	320	325	350	382	423	564
2004	159	210	282	301	357	384	434	450	617
2005	250	233	306	372	394	401	447	499	676
2006	261	256	345	365	430	431	475	555	696
2007	216	215	286	348	352	405	427	481	709
2008	253	292	331	340	411	474	507	536	742

With very few exceptions, higher incomes are associated with higher natural gas expenditures.

Q. IN ADDITION TO HIS STUDY, DR. THOMPSON REVIEWED DATA PROVIDED BY MGE REGARDING THE CONSUMPTION OF LIHEAP CUSTOMERS. FROM THIS REVIEW HE CONCLUDED THAT LIHEAP RECIPIENTS EXHIBIT HIGHER THAN AVERAGE NATURAL GAS CONSUMPTION. IS DR. THOMPSON'S RESULT INCONSISTENT WITH THE STUDY RESULTS DESCRIBED ABOVE?

A. No. LIHEAP recipients receive a subsidy specifically targeted to offset the cost of natural gas consumption; it is not surprising that they have use similar to higher income households. However, LIHEAP recipients represent only a subset of low income households and are not representative of the total population of low income households. In fact, only about 30% of households eligible for LIHEAP actually receive assistance. The result is that despite the higher natural gas consumption by LIHEAP households the average natural gas consumption for all low income households (including LIHEAP recipients) is lower than for higher income households.

This result is supported by both the information from the Department of Energy and Department of Health and Human Services which acknowledges that LIHEAP recipients have higher average use than the total population of low income households, but that in total, the average use for low income households is lower than for higher income households.

Q. HAVE YOU PERFORMED AN ADDITIONAL ANALYSIS THAT INDICATES THAT LIHEAP RECIPIENTS ARE ONLY A FRACTION OF THE LOW-INCOME POPULATION?

A. Yes. Using 2000 US Census data for the Missouri counties that MGE serves, I found that approximately 20% of households in those counties had household incomes below 150% of the Federal Poverty Level. MGE serves approximately 438,000 residential customers in Missouri. Assuming MGE customers have a similar income distribution to the household incomes in the counties that MGE serves, the Company serves approximately 90,446 households below 150% of the Federal Poverty Level. However, Mr. Thompson's testimony implies that only 12,495 of MGE's customers are LIHEAP recipients, which represents only about 14% of households that can be considered low-income.

Q. HAVE YOU PERFORMED ADDITIONAL AN ANALYSIS THAT INDICATES THAT LIHEAP RECIPIENTS EXHIBIT HIGHER NATURAL GAS CONSUMPTION THAN THE AVERAGE CONSUMPTION OF THE LOW-INCOME POPULATION?

A. Yes. Using a weighted sample of individual household income and consumption data from the Department of Energy's 2005 Residential Energy Consumption Survey for the Midwest Region, West North Central Division that includes

Missouri, I calculated the average consumption by categories of income relative to the poverty level for households with reported natural gas usage. I performed the calculations for all households and the subset of households receiving energy assistance for households at or below the Federal Poverty Level (FPL), at or below 125% of the FPL, at or below 150% of the FPL. The results indicate that for each level of household income relative to the FPL, low-income households receiving targeted energy assistance used more than the average of all low income customers and that for each level of household income, low-income customers on average used less than households above 150% of the FPL.

Q. BASED ON YOUR INVESTIGATION DO YOU BELIEVE THAT REINSTATING A TRADITIONAL RATE DESIGN WOULD BE REGRESSIVE?

A. No. On average, low-income households use less natural gas than higher income households so a traditional rate design would not be regressive.

III. RESPONSE TO RATE DESIGN REBUTTAL

Q. MS. ROSS CLAIMS TO BE STRUCK BY THE WAY IN WHICH YOUR TESTIMONY USES THE TERM "SFV" BECAUSE SHE FOCUSES ON THE IMPACT ON THE TOTAL BILL AS OPPOSED TO THE IMPACT ON THE NON-GAS PORTION OF THE CUSTOMER'S BILL. WHY IS IT APPROPRIATE TO FOCUS ON THE IMPACT OF THE SFV ON THE NON-GAS PORTION OF THE BILL?

A. As Ms Ross appears to agree, the gas commodity rates are not at issue in this case. Theoretically, the PGA rate represents a dollar for dollar pass-through of

the cost of gas and does not recover the cost of MGE's local distribution system. The focus of my direct testimony was that recovering all non-gas costs through a fixed charge removes the price signal associated with the non-gas charges on the bill and contradicts the cost studies submitted by MGE, Staff and OPC that allocate at least some portion of costs on the basis of commodity and peak demand related factors.

Q. MS. ROSS CRITICIZES THE COMPARISON OF THE INCREASED RATES PAID BY RESIDENTIAL CUSTOMERS UNDER THE SFV RATE DESIGN AND THE CONSERVATION SAVINGS DESCRIBED IN YOUR DIRECT TESTIMONY ARGUING THAT THE TIME PERIOD REFLECTED IN THE COMPARISON HAS A SIGNIFICANT IMPACT ON THE RESULTS. PLEASE COMMENT ON YOUR USE OF THE 21 MONTH TIME PERIOD RUNNING FROM APRIL 2007 – DECEMBER 2008.

A. My choice of the 21 month time period was based on Company witness Hendershot's direct testimony and the date on which the SFV rates went into effect. On page 4, line 31, of his direct testimony, Mr. Hendershot provided an estimate of the annual Ccf savings resulting from the conservation program as of December of 2008. The SFV rates became effective in April 2007. If I had extended the comparison through April 2009, which includes an additional winter the comparison would have still resulted in MGE collecting millions more in rates than the savings attributable to the program. I fully acknowledge that the period over which the comparison is made has a significant impact on the results but this highlights one of the many deficiencies of the SFV rate

design. While the SFV rate design was granted in exchange for conservation programs, the over or under collection of revenue during any period under the SFV bears no relation to the level of conservation actually achieved. Public Counsel's witness Ryan Kind has proposed a mechanism in rebuttal testimony that aligns the actual saving to customers from conservation to the revenue provided to MGE for conducting conservation programs.

Q. FROM PAGE 5, LINE 12, THROUGH PAGE 7, LINE 11, OF HER REBUTTAL TESTIMONY, MS. ROSS DISCUSSES DR. BONBRIGHT'S DESCRIPTION OF FIXED COSTS AND VARIABLE COSTS AND ATTEMPTS TO LINK YOUR DISCUSSION OF HOW COSTS SHOULD BE RECOVERED TO THESE DESCRIPTIONS. DO YOU BELIEVE THAT MS. ROSS HAS FAIRLY CHARACTERIZED YOUR TESTIMONY?

A. No. While I agree with Dr. Bonbright's description of fixed and variable costs, Ms. Ross confuses the characteristics of fixed and variable costs with appropriate methods of recovery of those costs based on how costs are incurred. Ms. Ross fails to recognize that the level of fixed costs incurred may depend on a number of factors including usage based and geographic considerations. Once an investment is made, it may be considered a fixed cost but it does not dictate the manner in which the fixed cost should be recovered. For example, the cost of mains depends in part on the level of demand reflected in planning for capacity requirements. Design day demand which is used for planning capacity requirements is developed based on historic demand during extremely cold weather that reflects variation in use across customers. Higher anticipated demand causes larger sized mains to be placed and a larger level of total mains

investment. Because the level of fixed cost in mains investment depends in part on demand that varies among customers, the investment should not be recovered in a uniform fixed charge. Similarly, the level of mains investment may be related to the dispersion of customer dwellings and businesses across the service territory, but the investment to reach each customer is not uniform so it is not required by cost causative principles to recover the fixed cost of the investment in a uniform fixed charge.

Q. ARE THERE ADDITIONAL EXAMPLES ILLUSTRATING THAT MS. ROSS CONFUSES CHARACTERISTICS OF FIXED AND VARIABLE COSTS WITH APPROPRIATE METHODS OF RECOVERY BASED ON HOW COSTS ARE INCURRED?

A. Yes. Ms Ross states that I claim that there are not many, if any, fixed costs. However, I made no statement in my direct testimony regarding the level of costs that are fixed cost or variable costs.

She also states the following regarding my direct testimony;

> A. OPC does not have a definition for variable cost, but implies in the discussion that any cost that *is in any* way related to a customer's usage is a variable cost. For example, on p. 9, lines 13-18, Ms. Meisenheimer states that: The SFV rate design is inappropriate for recovering all non-gas costs because while the SFV is a fixed fee that recovers all non-gas costs, a portion of costs vary with use. The Company's cost of service studies identify a significant portion of costs as demand related. As illustrated below, the Company study shows over 20% of the costs of serving the Residential class is demand related.

This statement quoted from my testimony was taken out of context. The question and answer that appeared in my testimony addresses the problem of

using a uniform fixed fee to collect costs that are caused in part based on demand;

Q. DOES THE SFV RATE DESIGN MEET THE OBJECTIVE OF DESIGNING RATES BASED ON COST CAUSATION?

A. No. The SFV rate design is inappropriate for recovering all non-gas costs because while the SFV is a fixed fee that recovers all non-gas costs, a portion of costs vary with use. Even the Company acknowledges that some portion of costs vary with use. The Company's cost of service studies identify a significant portion of cost as demand related. As illustrated below, the Company study shows over 20% of the cost of serving the Residential class is demand related....

Q. MS. ROSS STATES THAT YOU CLAIM THAT ADOPTION OF THE SFV RATE DESIGN ELIMINATED ALL OF MGE'S EARNINGS RISK CITING YOUR DIRECT TESTIMONY AT PAGE 18. HAS SHE CORRECTLY CHARACTERIZED YOUR TESTIMONY?

A. No. The portion of my testimony quoted by Ms. Ross was a general statement. It is inaccurate to characterize the statement in my testimony as applying to eliminating earnings risk associated with all customer classes. As she acknowledges later in her testimony, the elimination of risk I associated with the SFV was the weather-related risk that is shifted from MGE to its residential customers.

Q. HOW CAN ELIMINATION OF WEATHER RISK DIMINISH THE MOTIVATION FOR EFFICIENCY CHARACTERISTIC OF COMPETITIVE FIRMS?

A. Competitive firms that are not assured stable revenue and profit streams have significant motivation to minimize costs. The SFV assures MGE a fixed level of revenue per customer each year, between rate cases, which MGE is not

guaranteed under a traditional rate design. This coupled with a regulatory structure that allows the Company a dollar for dollar pass through of gas costs and the ability to seek non-gas rate increases associated with increases in non-gas costs creates more stable revenue and profit streams from residential customers than would be expected in a competitive environment subject to similar weather related risk.

Q. PLEASE RESPOND TO THE CLAIM BY MS. ROSS THAT APPEARS AT PAGE 8, LINE 21, OF HER REBUTTAL TESTIMONY THAT THE SFV RATE DESIGN HAS ACTUALLY ELIMINATED WEATHER RISK FOR MGE'S RESIDENTIAL CUSTOMERS.

A. In support of her claim that the SFV stabilizes residential bills and the Company's earnings, Ms. Ross argues that during the test year ending December 31, 2008, the Company collected approximately $2.2 million less in residential rates than would have been collected under a traditional rate design. She fails to acknowledge that over the entire period during which the SFV rate design has been in effect, the SFV collected over $2.9 million more than would have been collected under a traditional rate design or that for the 12 months ending at the update to the test year, April 30, 2008, the SFV would have collected $1.66 million more than a traditional rate design.

Ms. Ross also focuses her support for the SFV on the impact of space heating customers based on an assumption that the cost of serving residential customer's is uniform despite acknowledging on page 7, that some costs have a demand related component. For example, the Staff uses a method of allocating

over 50% of mains investment and the expenses associated with mains to customer classes based on the class share of use of incremental capacity by month. This method assigns the residential class a larger proportion of mains cost based on higher demand during winter months. As can be seen by the chart on page 15, of Ms. Ross's rebuttal testimony, residential use of capacity in February is approximately 13 times higher than in August. However, the Staff ignores this cost driver in designing rates by continuing to support a rate design that collects the same amount of non-gas costs in a winter month as in a summer month. Traditional rate design on the other hand would collect a higher amount of costs consistent with higher winter use.

Q. DOES MS. ROSS DISPUTE THAT USE PER CUSTOMER PER MONTH VARIES SIGNIFICANTLY WITHIN THE RESIDENTIAL CLASS?

A. No. Ms. Ross includes Schedule 1 to her testimony which contains a portion of the MGE data request response that confirms that the monthly use per customer varies significantly within the class ranging from as little as 0-50 Ccfs per month to over 5000 Ccf per month. Schedule 1 to her testimony also illustrates that the pattern of use differs between months. For example, in the summer months of July and August, 99% of customers have use in the range of 0-50 Ccf while in the winter month of February, the use for 99% of customers is distributed over usage ranges of up to 301-400 Ccf.

Q. WHY IS THIS VARIATION SIGNIFICANT IN DESIGNING RATES?

A. The significant variation in demand per customer, and the seasonal variation in the distribution of use illustrate that the residential class is not as homogeneous as alleged by MGE and Staff.

Q. MS ROSS CONTENDS THAT YOUR CHARACTERIZATION OF USAGE DIFFERENCES AMONG RESIDENTIAL CUSTOMERS AS 'SIGNIFICANT' FOR PURPOSES OF COST ALLOCATION AND RATE DESIGN IN THIS CASE IS MISLEADING. DO YOU AGREE?

A. No. As I explained above, the significance in the range of residential use is to illustrate that use within the class is not uniform and does not justify uniform recovery of demand or commodity related costs.

Q. MS. ROSS CONTENDS THAT YOUR CHARACTERIZATION OF THE DIFFERENCES OF A RESIDENTIAL CUSTOMER ON THE CURRENT SFV RATE DESIGN AND TRADITIONAL RATE DESIGN IS MISLEADING. DO YOU AGREE?

A. No. I thought it appropriate to show the Commission the full range of potential bill impacts, both positive and negative as well as the average impact as shown in the table in my direct testimony.

Q. MS. ROSS CONTENDS THAT YOUR STATEMENT THAT THE SFV RATE DESIGN MEANS THAT CUSTOMERS DO NOT HAVE ANY CONTROL OVER THE CHARGES THEY PAY TO THE SERVICE PROVIDER IS INCORRECT. HOW DO YOU RESPOND?

A. The statement Ms. Ross quotes was intended to describe a customer's lack of control over the non-gas charges paid to MGE under the SFV rate design.

Q. MR. FEINGOLD DISAGREES WITH YOUR ALLOCATION OF MEASURING EQUIPMENT BASED ON ANNUAL VOLUMES AND ARGUES THAT THE MEASURING EQUIPMENT IS SIZED BASED ON DEMAND AND THAT AS A FIXED COST, THE COST DOES NOT VARY ONCE THE COST IS INCURRED. PLEASE RESPOND.

A. The following descriptions from the Uniform System of Accounts prescribed for natural gas companies describe the cost included in Account 378 Measuring and regulating station equipment—General and Account 379 Measuring and regulating station equipment—City gate check stations.

> **378 Measuring and regulating station equipment—General.**
> This account shall include the cost installed of meters, gauges and other equipment used in measuring and regulating gas in connection with distribution system operations other than the measurement of gas deliveries to customers.
> Items
> 1. Automatic control equipment.
> 2. Foundations.
> 3. Gauges and instruments.
> 4. Governors or regulators.
> 5. Meters.
> 6. Odorizing equipment.
> 7. Oil fogging equipment.
> 8. Piping.
> 9. Pressure relief equipment.
> 10. Vaults or pits, including valves contained therein.
> Note: By-passes outside governor pits are includible in account 376, Mains.
>
> **379 Measuring and regulating station equipment—City gate check stations.**
> This account shall include the cost installed of meters, gauges, and other equipment used in measuring and regulating the receipt of gas at entry points to distribution systems.
>
> Note: Pipeline companies, including companies who measure deliveries of gas to their own distribution system, shall include in the transmission function classification city gate and main line industrial measuring and regulating stations.
> Items
> (See account 378 for items.)

Both Accounts contain cost described as used in measuring and regulating gas, activities associated with gas flows throughout the year not just on the peak day. While I agree that sizing some of the equipment included in the account might incrementally affect the costs and be reasonably considered demand related, the SFV rate design collects these costs uniformly from residential customers ignoring any demand or commodity related components. To suggest that once a cost is incurred it becomes fixed and should be collected in a manner that does not reflect the drivers underlying the level of cost is unreasonable.

Q. ON PAGE 5, MR. FEINGOLD'S REBUTTAL TESTIMONY CLAIMS THAT BASED ON ASSUMPTIONS OF CUSTOMER DENSITY, PRESSURE AND DESIGN DAY LOAD CHARACTERISTICS, 99% OF RESIDENTIAL CUSTOMERS CAN BE SERVED BY THE MINIMUM SIZED DISTRIBUTION MAIN. PLEASE RESPOND.

A. Mr. Feingold's analysis based on a hypothetical system of 2" mains does not reflect that customers are actually served by an integrated network of mains or that the Company actually serves customers with mains smaller than 2".

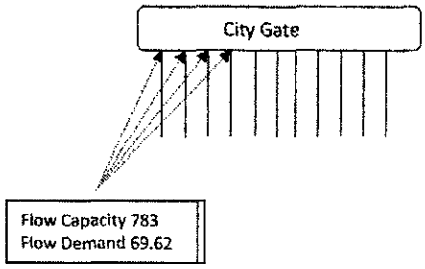
Q. DOES THE COMPANY COST WITNESS PROVIDE TESTIMONY THAT RECOGNIZES THAT A CUSTOMER DOES NOT RECEIVE SERVICE THROUGH A CERTAIN LENGTH OF MAIN BUT IS INSTEAD SERVED THROUGH AN INTEGRATED NETWORK OF MAINS?

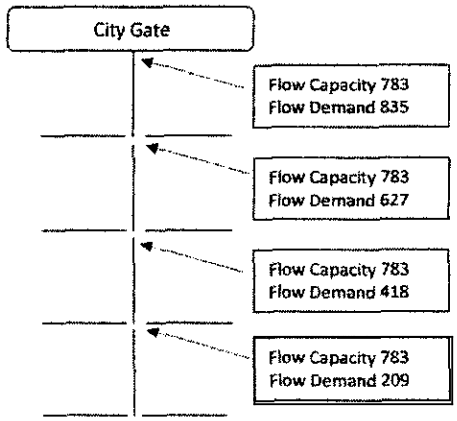
A. Yes. Mr. Cummings describes this on page 9-10 of his rebuttal testimony. He goes on to acknowledge that a portion of mains cost relates to meeting peak day load.

Q. HAVE YOU DEVELOPED AN EXAMPLE TO ILLUSTRATE THAT THE CAPACITY OF AN INTEGRATED SYSTEM BUILT OF 2" MAINS WOULD NOT SATISFY THE CAPACITY NEEDS OF RESIDENTIAL CUSTOMERS?

A. Yes. For example, the Design Day demand per bill for Kansas City area residential customers used in Mr. Cummings workpapers is 11.8 Ccf or 1.18 MCF per day. This produces a Design Day demand for one mile of 2" main serving an average of 59 customers of 69.62 MCF which is well below the 783 MCF Daily flow Capacity for a 2" main referenced in Mr. Feingold's testimony. However, this does not reflect that main segments are interconnected with larger capacity mains nearer the city gate. Under an integrated system of mains using the same assumptions as before, the Flow capacity would be exceeded at the inlet point of 12 miles of connected 2" mains.

The diagram shown below illustrates the problem with Mr. Feingold's claim that virtually all residential customers can be served with a 2" main. The straight lines in the diagram represent 1 mile lengths of 2" main serving 59 customers with 1.18 MCF demand per customer. Mr. Feingold's analysis only considers the flow through a single length of main for each group of 59 customers as shown on the left. For an integrated system, as shown on the right, nearer the city gate, larger mains are needed to satisfy aggregate capacity demand.





Q. DOES MR. FEINGOLD MAKE OTHER QUESTIONABLE ASSUMPTIONS?

A. Yes. Mr. Feingold's analysis also relies on an assumption of uniform customer density per mile of main although the customer density in MGE's service territory varies significantly. For example, based on Census data, in Jackson County the density of housing units served by a gas utility is 360 per sq mile but in Christian County the density of housing units served by a gas utility is only 21 per sq mile. I would expect the customer density per mile of main to be different for the two counties, however, Mr. Feingold failed to address this issue in his analysis.

Q. MR. FEINGOLD'S CALCULATION IS BASED ON A 2" MAIN. IS A 2" MAIN ACTUALLY THE SMALLEST SIZED MAIN USED ON THE COMPANY'S SYSTEM?

A. No. Based on information from Company witness Mr. Cummings, MGE uses smaller mains of diameters ranging from 3/4" to 1 1/2".

Q. HOW WOULD THE USE OF A SMALLER SIZED MAIN OR HIGHER CUSTOMER DENSITY AFFECT MR. FEINGOLD'S ANALYSIS?

A. All else equal, smaller diameter mains would reduce the flow capacity available to satisfy demand. Higher customer densities would reduce the flow capacity available to serve each customer.

Q. WAS MR. FEINGOLD'S CALCULATION FOR THE SGS CLASS BASED ON SIMILAR FAULTY METHODS AND ASSUMPTIONS?

A. Yes, it was.

Q. MR. FEINGOLD CLAIMS THAT IT IS A FUNDAMENTAL PRINCIPLE OF ECONOMICS THAT FIXED COST DO NOT IMPACT MARGINAL COSTS. PLEASE COMMENT.

A. The principle that Mr. Feingold refers to would be better stated as "fixed costs do not impact short run marginal costs". Marginal cost is defined as the change in total cost associated with a change in the quantity of output per period of time. The short run is defined as a period during which the use of some inputs to production are fixed. The long run represents a planning period long enough that a firm can change those inputs that were fixed in the short run. In the short run, because the use of some inputs is fixed, short run marginal cost are related only to changes in short run variable costs. However, the costs associated with use of facilities that are fixed in the short run are considered variable based on a long run planning horizon and therefore will impact long run marginal costs.

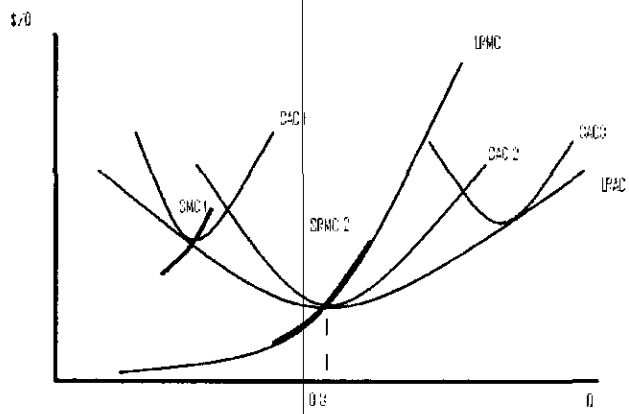
For example if I sign a 5-year lease on a 4000 sq ft building that is equipped and furnished to open a restaurant, the cost of the facility is fixed for the short run period of 5 years. The long run would represent the period beyond 5 years when I am free to change the scale of my operation to a larger or smaller facility based on my needs. In the short run, although I am locked into the

building size and its cost, I still have costs that can vary with the level of production including costs such as labor and raw materials. As a competitive firm, to maximize profit or minimize loss I would set a price that approximates short run marginal cost, because by doing so I will receive as much for the last increment of output as the incremental cost to produce it. In a market with free entry and exit, the market price over time should approximate a level needed to cover the minimum long run average costs for the industry. The long run average cost includes both costs that would be considered variable and costs that would be considered fixed over a short run. Since both types of cost are considered variable from a long run planning perspective, long run marginal costs are dependent on costs that are considered fixed in the short run.

In Economics the concepts of short run and long run choices are illustrated by the Long Run Average Cost Curve which is constructed of possible average cost curves that would be produced by making different choices about the scale of operation. Achieving the minimum long run average cost requires choosing the proper scale of operation (those costs that would be fixed in a short run period such as the restaurant facility) and minimizing other costs (those costs that were variable in the short run such as labor and raw materials).

The diagram illustrates that in a competitive market, a firm that operates and incurs costs in the short run at a level that mirrors optimal long run choices will produce a quantity (Q3) and receive a price for services equal to the minimum long run average cost associated with Q3. As shown in the diagram,

the minimum level of long run average cost that occurs at Q3 is equivalent to the long run marginal cost, the short run average cost and the short run marginal cost.



Q. HOW DOES THE CASE OF A REGULATED MONOPOLY DIFFER FROM THE COMPETITIVE EXAMPLE?

A. LDCs such as MGE are considered natural monopolies because lower per unit costs associated with economies of scale are achieved by large scale production. Under regulation, the regulated natural monopoly is granted an exclusive service territory to promote economies of scale and encouraged to invest on a scale that minimizes long run costs such as planning for growth in sizing facilities.

It is argued that in the case of a natural monopoly which exhibits a greater range of outputs over which average costs decline, setting prices to recover long run marginal cost would not allow an opportunity to earn an adequate return when operating at output levels below the long run optimal level. In order to allow an opportunity to earn an adequate return, regulated utility rates are set incrementally above long run marginal cost in order to allow the opportunity to earn a normal return of expenses and on embedded investment.

Q. PLEASE RESPOND TO MR. FEINGOLD'S ATTEMPT TO SUPPORT THE SFV RATE DESIGN BASED ON RAMSEY PRICING.

A. Ramsey pricing suggests that charges should be linked to consumer's elasticity of demand. Under Ramsey pricing, customers that are less sensitive to price changes (inelastic demand) would be charged a higher mark-up over marginal costs. This concept does not support the SFV rate design. Sensitivity to price changes depends on factors such as a customer's need for the product, the value of the product to the customer and availability from alternative suppliers. While certainly the demand for natural gas is relatively inelastic, low use residential customers on average likely have a higher demand elasticity than do heavy users. This suggests that the low use customers would pay less under a Ramsey pricing scheme. With respect to pricing rate components, Ramsey pricing suggests a method for spreading revenue recovery granted at a level above marginal costs across rate components, it does not dictate that all non-gas costs be recovered through a uniform fixed charge as occurs under the SFV rate design.

Q. PLEASE RESPOND TO THE CLAIM THAT THE SFV RATE DESIGN REDUCES VOLATILITY IN CUSTOMER BILLS.

A. I would agree that a traditional rate structure does increase the possibility of higher recovery of non gas costs in colder than normal winters, however, I do not consider an inescapable fixed charge to be a better option. The SFV rate design substantially increases the non gas recovery on some low use customers' bills with no ability to avoid the increase by curbing use except through disconnection.

Q. PLEASE RESPOND TO THE CLAIM THAT FULL RECOVERY OF NON GAS COSTS THROUGH THE SFV REDUCES THE EFFECTS OF WEATHER, STABILIZES CUSTOMERS' BILLS AND MAKES BILLS SIMPLE AND UNDERSTANDABLE.

A. I agree that the SFV reduces the impact of weather on customers' bills but I disagree that mandatory imposition of such an affect is desirable. There are alternatives to the SFV that can reduce undesirable effects of weather on customers' bills while preserving an individual customer's ability to control the charges they pay. Voluntary level payment plans can assist customers in budgeting for high costs associated with cold weather while retaining the ability to save by reducing or forgoing consumption when they choose to do so and by benefiting from reduced costs during periods of above normal temperatures. Under the SFV customers are truly captive to a monopoly. They have no ability to reduce the non gas portion of the bill. Further, low use customers pay substantially more whether or not they want or need the same level of service as high use customers. From a fairness perspective, I disagree that the bill is more understandable to customers or more desirable.

IV. RESPONSE TO COST OF SERVICE REBUTTAL

Q. ON PAGE 8, MR. CUMMINGS SUGGESTS THAT THE BASIS OF THE COMMISSION'S REJECTION OF PUBLIC COUNSEL'S MAINS ALLOCATION IN CASE GR-2009-0209 WAS DUE TO INCLUSION OF A COMPONENT THAT ALLOCATED MAINS BASED ON USE THROUGHOUT THE YEAR. IS THAT CORRECT?

A. No. The Commission rejected Public Counsel's RSUM method because it contained no customer component in allocating mains costs.

Q. IN THIS CASE, HAVE YOU ALLOCATED A PORTION OF MAINS COST BASED ON THE NUMBER OF CUSTOMERS?

A. Yes. I allocated the same proportion of mains cost based on customers as did the Company.

Q. DO YOU AGREE WITH MR. CUMMINGS CRITICISM OF ALLOCATING A PORTION OF MAINS BASED ON ANNUAL VOLUMES?

A. No. Conceptually, the zero-intercept method used by the Company and Public Counsel produces the portion of mains cost that is associated with providing a 0" diameter main. However, gas is supplied throughout the year as well as on the single peak day of the year. It is unreasonable to allocate all costs associated with non-customer portion on only the single peak day demand because it fails to recognize the actual use of mains.

Q. DOES YOUR ALLOCATION METHOD ALLOCATE A PORTION OF MAINS BASED ON PEAK DEMAND?

A. Yes. My allocation method allocates 43.19% of mains costs on peak demand, 38.41% of mains costs on the number of customers and 18.4% of mains costs on annual volumes.

Q. MR. CUMMINGS CRITICIZES YOUR ALLOCATION OF AMR EQUIPMENT IN THE COST STUDY PRESENTED IN YOUR DIRECT TESTIMONY. IS THIS A FAIR CRITICISM?

A. Yes. I revised my study to allocate these costs based on unweighted customer numbers excluding lvs customers.

Q. MR. CUMMINGS CRITICIZES YOUR ALLOCATION OF MEASURING AND REGULATING EQUIPMENT IN THE COST STUDY PRESENTED IN YOUR DIRECT TESTIMONY. HAVE YOU RESPONDED TO THIS ISSUE?

A. Yes. I addressed this issue in response to Mr. Feingold's testimony.

Q. MR. CUMMINGS POINTS OUT THAT YOUR STUDY DOES NOT INCLUDE INTEREST EXPENSE. IS THIS A FAIR CRITICISM?

A. Yes. I revised my study to include these costs and allocated the cost based on the Company's allocation factors.

Q. HAVE YOU MADE OTHER ADJUSTMENTS TO YOUR CLASS COST OF SERVICE STUDY?

A. Yes. In consideration of Mr. Cummings rebuttal testimony and in an effort to reduce contested issues in this case, I adjusted my study to reflect the Company's allocations of Meter Reading, Customer Accounts, Customer Deposits, Uncollectibles, Demonstrating and Selling and SLRP.

V. CCOS RESULTS AND RATE DESIGN RECOMMENDATIONS

Q. WHAT ARE THE RESULTS OF PUBLIC COUNSEL'S UPDATED CLASS COST OF SERVICE STUDY?

A. Based on my updated study, to equalize class rates of return, the residential class revenues would need to be increased by 4.80%, the small general service class revenues would need to be reduced by 9.88%, the large general service class

revenues would need to be reduced by 12.73% and large volume revenues would need to be reduced by 17.74%. These results are shown on line 23, Schedule BAM SUR-6. My updated class cost of service study is attached as Schedule BAM SUR -8.

Q. HAVE YOU UPDATED THE RATE DESIGN SCHEDULE PRESENTED IN YOUR TESTIMONY?

A. Yes. My updated class revenue schedule is attached as Schedule BAM SUR-2 illustrates the process of combining 1/2 the revenue neutral shift indicated by my updated study with a $15 million revenue requirement increase. In this case, the combined impact of the revenue neutral shift and revenue requirement increase results in some classes receiving an increase while others received a reduction.

Line 8, of Schedule BAM SUR-7 1/2 the revenue neutral shift indicated by public counsel's class cost of service study. Line 12, of Schedule BAM SUR-7 illustrates the spread of a $15 million increase based on Public Counsel's recommended class share of revenue. Lines 20-21, illustrate that no adjustments are needed to ensure that no customer class receives a net decrease as the combined result of the revenue neutral shift and revenue requirement increase. The resulting rate revenue and class percentages are illustrated on lines 24-25.

Q. HOW DOES THE LEVEL OF CUSTOMER CHARGE SUPPORTED BY YOUR STUDY COMPARE TO YOUR PROPOSED CUSTOMER CHARGE IN THIS CASE?

A. My cost of service study supports a customer charge of $12.36. However, I have proposed to collect 55% of residential revenue through the monthly customer charge. Based on a $15 million increase and public counsel's method of determining class revenues, my proposed customer charge would be $15.18. The remaining 45% of residential costs would be recovered through a uniform volumetric rate.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

LIHEAP Home Energy Notebook
For Fiscal Year 2007

U.S. DEPARTMENT OF
HEALTH AND HUMAN SERVICES
Administration for Children and Families
Office of Community Services
Division of Energy Assistance
June 2009

II. Home Energy Data

Section II presents home energy consumption and expenditure data. The primary data source for this section is the 2005 RECS, which has energy consumption and expenditures data for calendar year 2005. For this *Notebook*, the 2005 space heating and cooling consumption and expenditures have been adjusted to reflect FY 2007 weather and fuel prices, as described in Appendix A. Therefore, any residential energy or home energy consumption and expenditure data presented in this section for years after 2005 have been adjusted from the 2005 RECS. [13]

National data on total residential energy, home heating, and home cooling are presented below. Regional variations in the national data are included in Appendix A. Home energy trend data are presented in Section III.

Residential energy data

Table 2-1, on the next page, presents data on average annual residential energy consumption, expenditures, and burden by fuel type for all, non low income, low income, and LIHEAP recipient households.[14] In FY 2007, average residential energy consumption for all households was 95.8 million British Thermal Units (mmBTUs) and average expenditures were $1,986. The mean individual residential energy burden for all households was 7.0 percent of income.

Low income households had average residential energy consumption of 84.4 mmBTUs (11.9 percent less than all households) and average energy expenditures of $1,715 (13.6 percent less than all households). Their mean individual residential energy burden was 13.5 percent, almost twice that for all households and almost four times that for non low income households.

Average residential energy expenditures for LIHEAP recipient households were $1,900, about 11 percent higher than that for all low income households. The mean individual residential energy burden was 16.0 percent, 2.5 percentage points higher than that for low income households.

Households consume residential energy for a variety of uses that include space heating, water heating, space cooling (air-conditioning or circulation), refrigeration, and other appliances. Table 2-2 furnishes data on the percentage of the residential energy bill that is attributable to each of these five end uses. By statute, LIHEAP targets assistance to home energy expenditures, i.e., to home heating and home cooling expenditures. In FY 2007, home heating was 31 percent of the residential energy bill for low income households, and home cooling made up 12 percent.

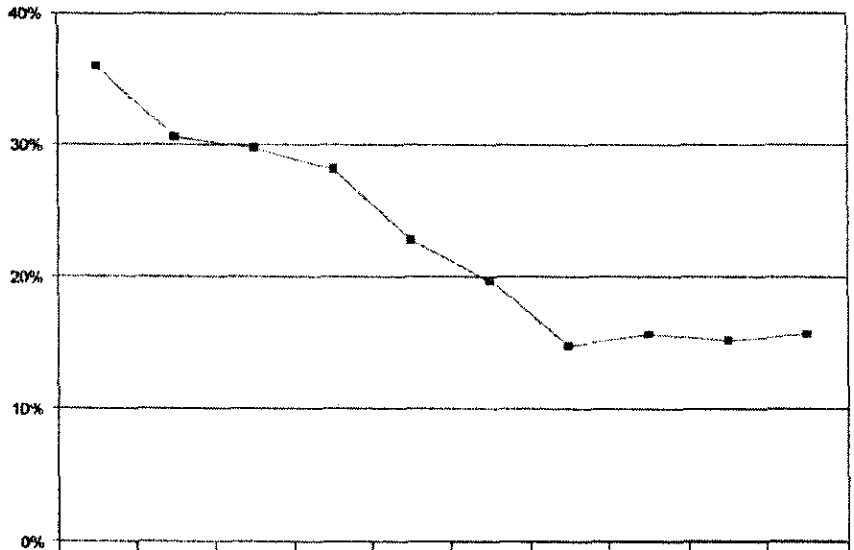
[13] The FY 2007 *Notebook* is the first to use the 2005 RECS data. The FY 2006 *Notebook* used projections from the 2001 RECS, which had a different sample frame and different procedure than the 2005 RECS. The reader should exercise caution in comparing the results for FY 2007 to those for FY 2006, as some of the observed changes may be due to the changes in the base survey used.

[14] Comparisons are made among the four income groups of all, non low income, low income, and LIHEAP recipient households. All households represent the total number of households in the U.S. Non low income households represent those households with annual incomes above the LIHEAP income maximum of the greater of 150 percent of HHS's poverty income guidelines or 60 percent of State median income. Low income households represent those households with annual incomes under the LIHEAP income maximum of the greater of 150 percent of HHS's poverty income guidelines or 60 percent of State median income. LIHEAP recipient households represent those low income households that received Federal fuel assistance.

Trends in LIHEAP

Figures 3-20 through 3-24 furnish information on trends for HHS' energy assistance programs from FY 1981 through FY 2007. Figure 3-20 shows that the percentage of LIHEAP income eligible households that has been assisted has fallen significantly over time but has been steady at about 16 percent in recent years. In FY 1981, 36 percent of eligible households received heating and/or winter crisis assistance benefits, but this number fell to 15 percent in 1997.[27] By FY 2007, 16 percent of LIHEAP income eligible households received those benefits. Figure 3-21, on the next page, furnishes statistics on the count of recipients by benefit type.

Figure 3-20. Percentage of LIEAP/LIHEAP Federally eligible households receiving LIEAP/LIHEAP heating and/or winter crisis assistance, FY 1981 to FY 2007



	1981	1983	1985	1987	1990	1993	1997	2001	2005	2007
Recipients (mil)	7.1	6.8	6.8	6.8	5.8	5.6	4.3	4.8	5.3	5.3
Eligibles (mil)	19.7	22.2	22.8	24.1	25.4	28.4	29.0	30.4	34.8	33.6
Rate (%)	36%	31%	30%	28%	23%	20%	15%	16%	15%	16%

NOTE: The FY 1981 estimate of LIHEAP income eligible households is not directly comparable to those of the other years.

SOURCE: HHS Administrative Data — such data for FY 2007 are preliminary; thus the actual figures may differ.

[27]Note that the Federal income eligibility guidelines for the FY 1981 Low Income Energy Assistance Program (LIEAP) were different from those for subsequent LIHEAP programs included in the table.

Table 2-1. Residential energy: Average annual household consumption, expenditures, and burden by all, non low income, low income, and LIHEAP recipient households, by main heating fuel type, United States, FY 2007[1/] (See also Tables A-3a – A-3c, Appendix A)

Main heating fuel	Fuel consumption (mmBTUs)[2/]	Fuel expenditures	Mean individual burden[3/]	Median individual burden[4/]	Mean group burden[5/]
		All households			
All fuels	95.8	$1,986	7.0%	4.2%	3.0%
Natural gas	111.4	$1,956	6.2%	3.9%	2.9%
Electricity	61.2	$1,696	6.9%	3.9%	2.5%
Fuel oil	145.6	$3,248	12.1%	7.2%	4.9%
Kerosene	53.8	$1,392	9.6%	6.9%	2.1%
LPG[6/]	108.6	$2,640	9.3%	6.3%	4.0%
		Non low income households			
All fuels	101.9	$2,132	3.6%	3.1%	2.5%
Natural gas	116.1	$2,098	3.4%	2.9%	2.4%
Electricity	66.0	$1,828	3.3%	2.9%	2.1%
Fuel oil	154.5	$3,489	5.5%	4.9%	4.0%
Kerosene	60.8	$1,419	4.3%	4.6%	1.6%
LPG[6/]	115.8	$2,742	5.0%	4.5%	3.2%
		Low income households			
All fuels	84.4	$1,715	13.5%	9.3%	9.9%
Natural gas	101.4	$1,653	12.2%	8.8%	9.5%
Electricity	53.1	$1,471	13.1%	8.2%	8.5%
Fuel oil	131.9	$2,879	22.3%	16.1%	16.6%
Kerosene	52.5	$1,387	10.6%	8.6%	8.0%
LPG[6/]	94.9	$2,449	17.4%	13.8%	14.1%
		LIHEAP recipient households			
All fuels	103.2	$1,900	16.0%	10.5%	13.3%
Natural gas	112.9	$1,770	14.6%	10.3%	12.4%
Electricity	49.7	$1,219	14.9%	9.1%	8.5%
Fuel oil	149.9	$3,290	24.8%	23.8%	23.0%
Kerosene	76.8	$1,612	18.7%	13.8%	11.3%
LPG[6/]	107.8	$2,970	17.1%	11.3%	20.8%

[1/]Data are derived from the 2005 RECS, adjusted to reflect FY 2007 heating degree days, cooling degree days, and fuel prices. Data represent residential energy used from October 2006 through September 2007.

[2/]A British Thermal Unit (BTU) is the amount of energy necessary to raise the temperature of one pound of water one degree Fahrenheit. MmBTUs or mmBTUs refer to values in millions of BTUs.

[3/]Mean individual burden is calculated by taking the mean, or average, of individual energy burdens, as calculated from FY 2007 adjusted RECS data. See Appendix A for information on calculation of energy burden.

[4/]Median individual burden is calculated by taking the median of individual energy burdens, as calculated from FY 2007 adjusted RECS data.

[5/]Mean group energy burden has been calculated by (1) calculating average residential energy expenditures from the 2005 RECS for each group of households; (2) adjusting those figures for FY 2007; and (3) dividing the adjusted figures by the average income for each group of households from the 2007 CPS ASEC.

[6/]Liquefied petroleum gas (LPG) refers to any fuel gas supplied to a residence in liquid compressed form,

Table A-3a. Residential energy: Average annual expenditures, by amount (dollars) and mean group burden (percent of income), for all, non low income, low income, and LIHEAP recipient households, by Census region and main heating fuel, FY 2007

			Main heating fuel									
	All fuels		Natural gas		Electricity		Fuel oil		Kerosene		LPG	
Census Region	Dollars[1]	Percent[2]	Dollars	Percent	Dollars	Percent	Dollars	Percent	Dollars	Percent	Dollars	Percent
United States												
All households	$1,986	3.0%	$1,956	2.9%	$1,696	2.5%	$3,248	4.9%	$1,392	2.1%	$2,640	4.0%
Non low income households	$2,132	2.5%	$2,098	2.4%	$1,828	2.1%	$3,489	4.0%	$1,419*	1.6%	$2,742	3.2%
Low income households[3]	$1,715	9.9%	$1,653	9.5%	$1,471	8.5%	$2,879	16.6%	$1,387	8.0%	$2,449	14.1%
LIHEAP recipient households[4]	$1,900	13.3%	$1,770	12.4%	$1,219	8.5%	$3,290	23.0%	$1,612*	11.3%	$2,970	20.8%
Northeast												
All households	$2,519	3.4%	$2,212	3.0%	$1,616	2.2%	$3,385	4.6%	$1,091	1.5%	$3,261	4.4%
Non low income households	$2,765	2.8%	$2,435	2.5%	$1,693	1.7%	$3,692	3.7%	$2,120*	2.2%	$3,304	3.4%
Low income households	$2,148	11.4%	$1,841	9.8%	$1,530	8.1%	$2,936	15.6%	$919*	4.9%	$3,147*	16.7%
LIHEAP recipient households	$2,364	15.3%	$1,926	12.5%	$1,455	9.4%	$3,345	21.7%	$1,890*	12.3%	$2,140*	13.9%
Midwest												
All households	$1,933	3.0%	$1,943	3.1%	$1,344	2.1%	$2,679	4.2%	$1,786*	2.8%	$2,802	4.4%
Non low income households	$2,059	2.5%	$2,050	2.5%	$1,476	1.8%	$2,929	3.5%	NC	NC	$2,788	3.4%
Low income households	$1,721	9.9%	$1,760	10.1%	$1,180	6.8%	$2,364	13.6%	$1,786*	10.2%	$2,856	16.4%
LIHEAP recipient households	$1,803	12.2%	$1,861	12.5%	$1,156	7.8%	$2,810*	18.9%	$1,510*	10.2%	$2,522*	17.0%
South												
All households	$1,956	3.2%	$2,129	3.5%	$1,811	2.9%	$2,553	4.1%	$1,463	2.4%	$2,467	4.0%
Non low income households	$2,098	2.6%	$2,297	2.9%	$1,930	2.4%	$2,384	3.0%	$1,189*	1.5%	$2,566	3.2%
Low income households	$1,686	10.8%	$1,714	10.9%	$1,588	10.1%	$2,921*	18.7%	$1,540	9.8%	$2,343	15.0%
LIHEAP recipient households	$1,842	15.6%	$1,785	15.1%	$1,319	11.2%	$3,022*	25.6%	$1,562*	13.2%	$3,372*	28.6%
West												
All households	$1,637	2.3%	$1,609	2.2%	$1,508	2.1%	$2,965	4.1%	$1,288*	1.8%	$2,530	3.5%
Non low income households	$1,792	1.9%	$1,756	1.9%	$1,656	1.8%	$2,952*	3.2%	NC	NC	$2,765	3.0%
Low income households	$1,278	6.9%	$1,168	6.3%	$1,272	6.8%	$3,040*	16.3%	$1,288*	6.9%	$2,133	11.4%
LIHEAP recipient households	$1,195	8.1%	$1,129	7.7%	$993	6.7%	$2,968*	20.1%	NC	NC	$2,706*	18.4%

[1]Estimates are derived from the 2005 Residential Energy Consumption Survey (RECS), Energy Information Administration, U.S. Department of Energy. The 2005 RECS data have been adjusted for heating degree days, cooling degree days, and fuel price estimates for FY 2007. Expenditures represent the costs for fuel oil, kerosene, and LPG delivered and billed costs for natural gas and electricity. Expenditure data are not collected for other fuels.

[2]Represents the percent of household's income used for residential energy expenditures. National and regional mean incomes are calculated from the 2007 CPS ASEC, which reports income for calendar year 2006. Mean group residential burden is computed as mean group energy expenditures (from RECS) by mean group income (from CPS ASEC). See text in Appendix A for a discussion of energy burden.

[3]Households with annual incomes under the maximum in section 2605(b)(2)(B) of Public Law 97-35.

[4] Includes verified LIHEAP recipient households from the 2005 RECS.

* = This figure should be viewed with caution because of the small number of sample cases.

NC = No cases in the 2005 RECS household sample.

Table A-5. Home heating: Average consumption per household, by all fuels and specified fuels, by all, non low income, low income and LIHEAP recipient households, by Census region, FY 2007[1/]

	All Fuels[2/]	Natural Gas	Electricity	Fuel Oil	Kerosene	LPG
			(In MmBTUs)[3/]			
United States						
All households	38.9	50.4	8.5	95.1	20.2	51.8
Non low income households	40.0	50.0	9.0	98.6	25.2*	57.4
Low income households[4/]	36.9	51.4	7.7	89.8	19.3	41.4
LIHEAP recipient households[5/]	52.9	61.1	8.8	96.8	24.4*	45.2
Northeast						
All households	69.6	66.7	12.4	96.9	15.7	74.6
Non low income households	74.1	69.3	13.4	102.2	22.9*	81.3
Low income households	62.8	62.5	11.3	89.3	14.5*	57.3*
LIHEAP recipient households	68.2	63.6	11.4	94.6	15.7*	46.5*
Midwest						
All households	57.7	66.6	13.9	80.4	46.2*	64.4
Non low income households	59.0	66.9	15.7	72.8	NC	66.9
Low income households	55.5	66.1	11.8	90.1	46.2*	55.4
LIHEAP recipient households	64.3	72.8	10.8	119.2*	4.9*	53.4*
South						
All households	20.8	37.0	7.6	90.8	16.5	42.5
Non low income households	22.1	37.7	8.2	93.5	25.9*	43.6
Low income households	18.4	35.2	6.5	84.9*	13.9	41.1
LIHEAP recipient households	33.4	47.8	7.1	90.0*	28.5*	43.4*
West						
All households	23.5	29.9	7.8	100.4	18.5*	43.6
Non low income households	25.3	30.3	7.9	93.5*	NC	55.7
Low income households	19.2	28.6	7.7	137.0*	18.5*	23.0
LIHEAP recipient households	27.5	37.2	8.1	145.8*	NC	41.7*

[1/]Developed from the 2005 Residential Energy Consumption Survey (RECS), Energy Information Administration, U.S. Department of Energy, and adjusted for FY 2007.

[2/]Weighted average of natural gas, electricity, fuel oil, kerosene, and liquefied petroleum gas space heating consumption. Consumption data are not collected for other fuels .

[3/]A British Thermal Unit (BTU) is the amount of energy necessary to raise the temperature of one pound of water one degree Fahrenheit. MmBTUs refer to values in millions of BTUs.

[4/]Households with income under the maximum in section 2605(b)(2)(B) of Public Law 97-35.

[5/] Includes verified LIHEAP recipient households from the 2005 RECS.

* = This figure should be viewed with caution because of the small number of sample cases.

NC = No cases in the 2005 RECS household sample.

Table B-3. Average of 2006, 2007, and 2008 State-level estimates of the number of LIHEAP income eligible households using the Federal maximum LIHEAP income standard classified by HHS poverty guidelines[1/ 2/]

(Three-Year Average of CPS ASEC 2006-2008)

State	Total number of LIHEAP eligible households[3/]	Number of LIHEAP eligible households by intervals of HHS Poverty Guidelines			
		At or below poverty guidelines	>100% - 125% poverty guidelines	>125% - 150% poverty guidelines	Over 150% poverty guidelines
Alabama	550,398	268,655	90,285	88,845	102,613
Alaska	69,686	28,735	11,785	12,312	16,854
Arizona	630,341	276,456	107,222	100,562	146,101
Arkansas	301,160	152,005	63,771	71,469	13,916
California	3,840,876	1,250,875	683,775	606,271	1,299,956
Colorado	514,153	174,858	72,016	73,174	194,105
Connecticut	457,617	112,788	49,257	53,170	242,402
Delaware	95,394	25,826	10,955	13,127	45,486
District of Columbia	69,861	40,304	10,410	8,712	10,435
Florida	2,013,483	801,536	322,202	357,400	532,345
Georgia	999,434	421,874	147,171	154,568	275,820
Hawaii	109,532	44,781	18,589	15,185	30,977
Idaho	123,765	48,832	27,618	30,030	17,284
Illinois	1,506,838	478,932	185,933	198,312	643,661
Indiana	729,137	274,514	94,248	124,771	235,603
Iowa	324,110	108,296	44,717	56,041	115,056
Kansas	313,277	113,219	41,872	50,365	107,822
Kentucky	508,792	242,598	96,132	97,183	72,879
Louisiana	476,654	246,416	91,088	90,345	48,804
Maine	154,662	56,366	21,945	28,121	48,230
Maryland	607,980	167,952	59,356	71,641	309,032
Massachusetts	872,740	284,158	103,708	92,455	392,420
Michigan	1,218,551	439,448	169,263	151,054	458,785
Minnesota	587,936	144,422	75,157	73,019	295,338
Mississippi	339,311	203,166	66,008	61,590	8,547
Missouri	683,461	242,575	110,098	120,449	210,340
Montana	96,489	47,064	23,967	15,093	10,365
Nebraska	191,140	60,197	33,254	32,164	65,525
Nevada	224,501	80,640	31,926	41,960	69,975
New Hampshire	134,222	28,881	17,649	16,139	71,552
New Jersey	1,037,955	258,259	109,985	111,478	558,233
New Mexico	208,290	111,815	42,373	45,535	8,567
New York	2,478,716	1,006,275	341,851	328,618	801,972
North Carolina	1,061,471	455,833	206,970	189,548	209,120
North Dakota	75,800	28,316	13,048	13,395	21,040
Ohio	1,363,060	532,399	183,472	190,520	456,669
Oklahoma	404,643	188,658	92,233	79,880	43,871
Oregon	401,851	148,920	77,975	66,546	108,410
Pennsylvania	1,489,149	507,619	196,275	236,252	549,003
Rhode Island	129,094	41,592	15,889	15,456	56,157
South Carolina	480,334	207,446	94,434	86,911	91,542
South Dakota	83,527	29,856	16,673	14,796	22,202
Tennessee	715,897	332,467	130,366	134,091	118,974
Texas	2,456,387	1,176,802	478,946	426,228	374,411
Utah	198,661	66,063	33,823	39,940	58,835
Vermont	75,913	22,377	10,988	13,123	29,425
Virginia	816,492	217,216	98,088	118,324	381,864
Washington	674,016	208,311	101,162	96,251	268,292
West Virginia	204,218	106,442	40,062	48,424	9,290
Wisconsin	661,315	207,459	103,466	95,510	254,880
Wyoming	56,989	19,632	9,182	9,543	18,632
All States	33,619,278	12,740,124	5,278,640	5,266,896	10,533,618

[1/] State estimates are subject to sampling error, and may not sum to U.S. total due to rounding.
[2/] The greater of 60 percent of State median income estimates or 150 percent of the HHS Poverty Guidelines.
[3/] The three year CPS ASEC average estimate of the total number of all U.S. households is 115,726,411.

Table A-4. Home heating: Average consumption per household, by all fuels and specified fuels, by all, non low income, low income and LIHEAP recipient households, by Census region, FY 2004[1/]

	All Fuels[2/]	Natural Gas	Electricity	Fuel Oil	Kerosene	LPG
			(in MmBTUs)[3/]			
United States						
All households	44.2	56.9	13.5	75.9	43.6	52.5
Non low income households	46.2	58.6	14.8	78.3	53.2	55.9
Low income households[4/]	39.8	53.3	10.8	69.7	39.6	46.4
LIHEAP recipient households[5/]	57.4	72.7	17.8	95.0	58.2	42.8
Northeast						
All households	66.7	72.5	20.1	77.8	61.6	68.6
Non low income households	72.1	79.6	24.6	81.1	72.4	72.6
Low income households	55.9	60.7	12.7	68.9	54.2	52.6*
LIHEAP recipient households	72.9	78.8	21.9	93.1	60.0*	30.6*
Midwest						
All households	68.9	76.2	23.0	74.2	NC	64.4
Non low income households	70.6	76.5	29.3	74.4	NC	64.6
Low income households	65.0	75.2	13.2	74.0	NC	63.9
LIHEAP recipient households	70.1	84.9	18.2	99.0*	NC	60.4
South						
All households	27.8	43.7	12.3	68.3	29.7	41.5
Non low income households	28.7	45.0	12.7	68.4	24.4*	47.9
Low income households	25.8	40.9	11.2	67.5*	30.9	31.3
LIHEAP recipient households	34.3	51.0	19.6	117.6*	19.1*	26.8
West						
All households	26.2	34.1	11.1	49.9*	41.0*	45.8
Non low income households	28.0	35.0	12.8	49.9*	43.9*	44.6
Low income households	22.5	31.8	8.5	NC	39.2	47.7
LIHEAP recipient households	30.1	37.9	9.8	87.0*	NC	63.8*

[1/]Developed from the 2001 Residential Energy Consumption Survey (RECS), Energy Information Administration, U.S. Department of Energy, for FY 2004.

[2/]Weighted average of natural gas, electricity, fuel oil, kerosene, and liquefied petroleum gas space heating consumption. Consumption data are not collected for other fuels .

[3/]A British Thermal Unit (BTU) is the amount of energy necessary to raise the temperature of one pound of water one degree Fahrenheit. MmBTUs refer to values in millions of BTUs.

[4/]Households with income under the maximum in section 2605(b)(2)(B) of Public Law 97-35.

[5/] Includes households from the 2001 RECS LIHEAP supplemental sample.

* = This figure should be viewed with caution because of the small number of sample cases.

NC = No cases in the 2001 RECS household sample.

DOE/EIA-0632 (97)

A Look at Residential Energy Consumption in 1997

November 1999

Energy Information Administration
Office of Energy Markets and End Use
U.S. Department of Energy
Washington, DC 20585

Table CE1-3c. Total Energy Consumption in U.S. Households by Household Income, 1997

	Total	1997 Household Income				Below Poverty Line	Eligible for Federal Assistance[1]	RSE Row Factors
		Less than $10,000	$10,000 to $24,999	$25,000 to $49,999	$50,000 or More			
RSE Column Factor:	0.6	1.6	1.0	0.8	1.0	1.4	1.0	
	Million Households							
Total U.S. Households	101.5	13.3	29.1	31.1	27.9	14.6	34.1	2.7
Number of Households, Fuels Used (more than one may apply):								
Electricity[2]	101.4	13.3	29.1	31.1	27.9	14.6	34.0	2.7
Natural Gas	61.9	8.0	17.6	19.0	17.9	9.1	20.4	4.3
Fuel Oil	10.0	1.3	2.5	3.2	3.0	1.4	3.4	10.1
Kerosene	3.5	0.4	1.2	1.2	0.6	0.6	1.4	14.5
LPG	8.1	1.0	2.4	2.7	1.9	1.2	2.8	12.7
Wood	15.0	0.7	3.0	4.7	6.7	1.1	3.0	9.1
	Quadrillion Btu							
Total Btu Consumption, Fuels Used:								
Electricity								
Primary	10.72	1.01	2.69	3.27	3.74	1.24	2.98	3.5
Site	3.54	0.33	0.89	1.08	1.24	0.41	0.99	3.3
Natural Gas	5.28	0.53	1.30	1.65	1.80	0.63	1.53	5.5
Fuel Oil	1.01	0.11	0.22	0.31	0.37	0.11	0.30	11.5
Kerosene	0.06	0.01	0.02	0.02	0.01	0.01	0.03	23.5
LPG	0.36	0.04	0.11	0.13	0.08	0.04	0.12	15.3
Wood	0.43	0.03	0.10	0.14	0.15	0.04	0.12	14.3
Total (excludes primary electricity and wood)	10.25	1.02	2.54	3.19	3.49	1.22	2.96	3.2
	Physical Units							
Physical Units of Total Consumption, Fuels Used:								
Electricity (billion kWh)	1,037	98	260	317	362	120	289	3.5
Natural Gas (billion cf)	5,143	516	1,270	1,604	1,752	618	1,490	5.5
Fuel Oil (million gallons)	7,273	761	1,598	2,262	2,653	811	2,138	11.5
Kerosene (million gallons)	437	67	161	154	54	98	193	23.5
LPG (million gallons)	3,937	412	1,177	1,428	920	484	1,286	15.3
Wood (million cords)	21.4	1.7	4.9	7.1	7.6	2.1	6.1	14.3
	Million Btu per Household[3]							
Total Btu Consumption per Household, Fuels Used:								
Electricity								
Primary	105.6	76.2	92.3	105.2	134.1	85.1	87.7	2.5
Site	34.9	25.2	30.5	34.7	44.3	28.1	28.9	2.5
Natural Gas	85.3	66.4	76.7	86.9	100.3	69.4	75.0	3.1
Fuel Oil	101.2	81.3	87.9	99.4	123.1	80.8	86.5	4.9
Kerosene	17.0	22.3	17.5	17.5	11.5	21.2	18.8	19.7
LPG	44.6	36.3	44.1	48.6	43.9	38.2	42.2	9.9
Wood	28.5	49.9	33.4	30.7	22.7	38.9	40.4	12.4
Total (excludes primary electricity and wood)	101.0	76.4	87.3	102.6	125.2	83.0	86.7	2.1

See footnotes at end of table.

Table CE1-5u. Total Energy Consumption and Expenditures in U.S. Households by Household Demographics, 1997

Household Demographics	Total End-Use Energy					RSE Row Factors
		Total		Per Household		
	Households (millions)	Consumption (quadrillion Btu)	Expenditures (billion dollars)	Consumption (million Btu)	Expenditures (dollars)	
RSE Column Factor:	1.1	1.4	1.3	0.8	0.8	
Total	101.5	10.25	135.79	101.0	1,338	1.2
Household Size						
1 Person	25.6	1.91	24.59	74.7	962	2.3
2 Persons	33.0	3.34	44.42	101.2	1,347	2.0
3 Persons	17.4	1.91	25.61	109.5	1,471	2.5
4 Persons	15.2	1.79	23.94	117.7	1,571	2.8
5 Persons	6.4	0.80	10.53	123.9	1,640	4.8
6 or More Persons	3.9	0.50	6.71	129.6	1,734	6.5
1997 Household Income Category						
Less than $5,000	3.8	0.30	3.85	81.3	1,028	6.5
$5,000 to $9,999	9.6	0.71	9.41	74.4	985	5.1
$10,000 to $14,999	10.3	0.86	10.97	83.2	1,063	4.4
$15,000 to $19,999	10.4	0.91	12.29	87.6	1,182	3.9
$20,000 to $24,999	8.4	0.77	10.39	91.7	1,233	3.7
$25,000 to $34,999	15.6	1.53	18.94	98.0	1,276	3.0
$35,000 to $49,999	15.5	1.66	21.61	107.1	1,394	2.5
$50,000 to $74,999	16.4	1.96	26.25	119.1	1,599	3.2
$75,000 or More	11.5	1.54	21.08	133.9	1,835	4.1
Below Poverty Line						
100 Percent	14.6	1.22	15.95	83.0	1,088	3.5
125 Percent	19.7	1.63	21.56	82.9	1,096	3.4
150 Percent	26.7	2.25	29.85	84.2	1,117	2.8
Eligible for Federal Assistance[1]	34.1	2.96	38.86	86.7	1,140	2.5
Age of Householder						
Under 25 Years	5.7	0.39	5.52	69.7	974	5.3
25 to 34 Years	18.5	1.63	21.93	87.7	1,184	2.9
35 to 44 Years	23.2	2.49	33.40	107.4	1,441	2.3
45 to 59 Years	25.6	2.90	38.89	113.4	1,519	2.1
60 Years and Over	28.5	2.83	36.05	99.4	1,265	2.6
Race of Householder						
White	78.5	8.18	108.12	103.9	1,378	1.4
Black	12.7	1.34	17.16	105.3	1,351	4.6
Other[2]	10.3	0.75	10.51	72.8	1,020	4.9
Householder of Hispanic Descent						
Yes	9.4	0.72	10.27	75.9	1,089	4.7
No	92.1	9.53	125.52	103.5	1,364	1.3

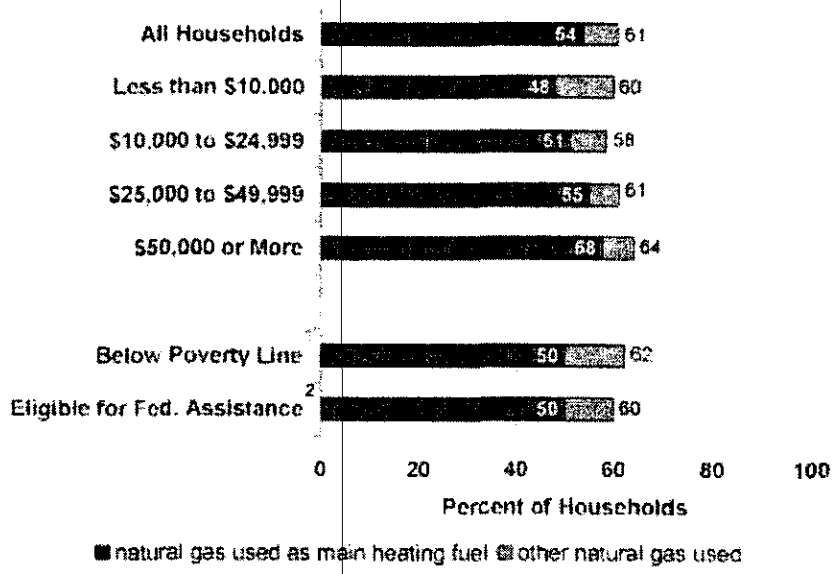
[1] Below 150 percent of poverty line or 60 percent of median State income.
[2] Includes 5.5 million householders who described themselves as Hispanic rather than White, Black, or other.
Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A-G of the 1997 Residential Energy Consumption Survey.

Return

Household Income

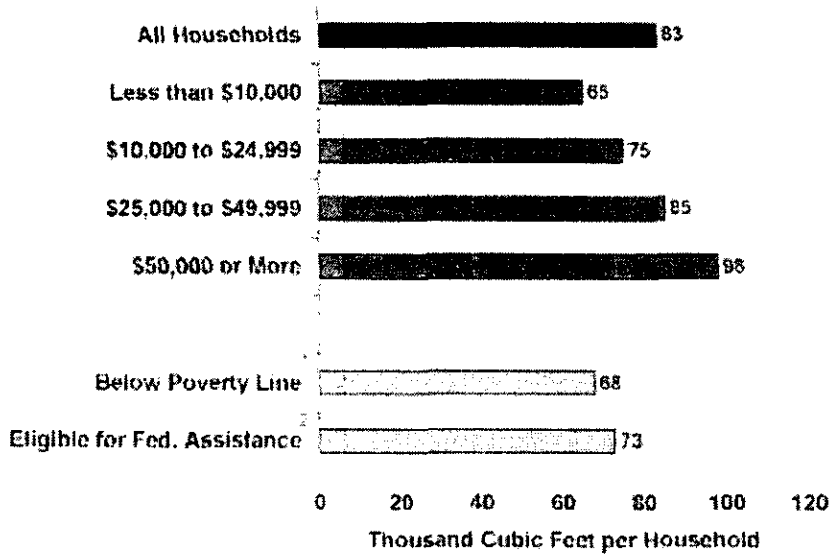
The use of natural gas for any end use and as the main heating fuel was approximately the same regardless of household income category (Figure 1). In contrast, natural gas consumption and expenditures per household did vary by household income—higher income households consumed more and spent more on average (Figures 2 and 3). Higher income households lived in larger housing units, which require more energy for heating. Natural gas prices varied little by household income (Figure 4).

Figure 1. Percent of Households That Use Natural Gas by Household Income, 1997



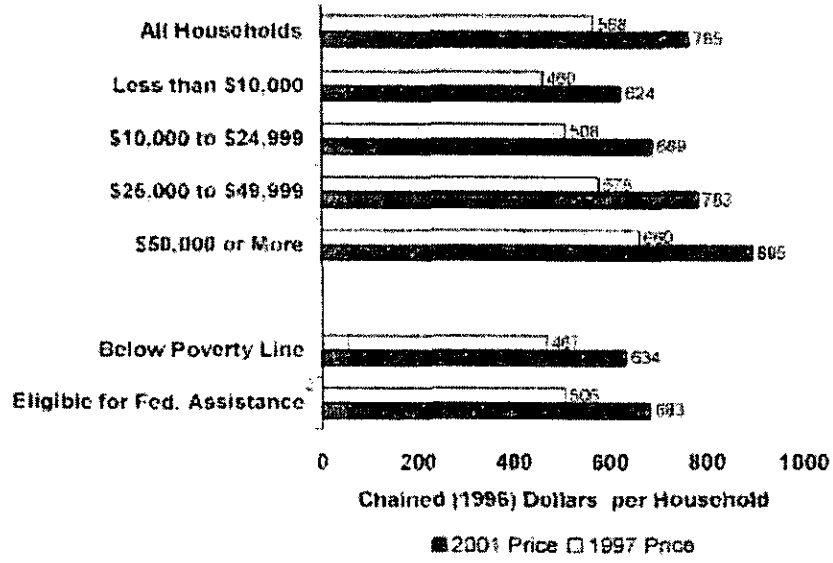
Notes:
1. Poverty line: Low-income classification defined by U.S. Census Bureau and U.S. Office of Management and Budget.
2. Eligible for Federal assistance: Below 150 percent of U.S. poverty line or equal to, or below, 60 percent of median State income.
Source: Residential Energy Consumption Survey 1997.

Figure 2. Natural Gas Consumption per Household by Household Income, 1997



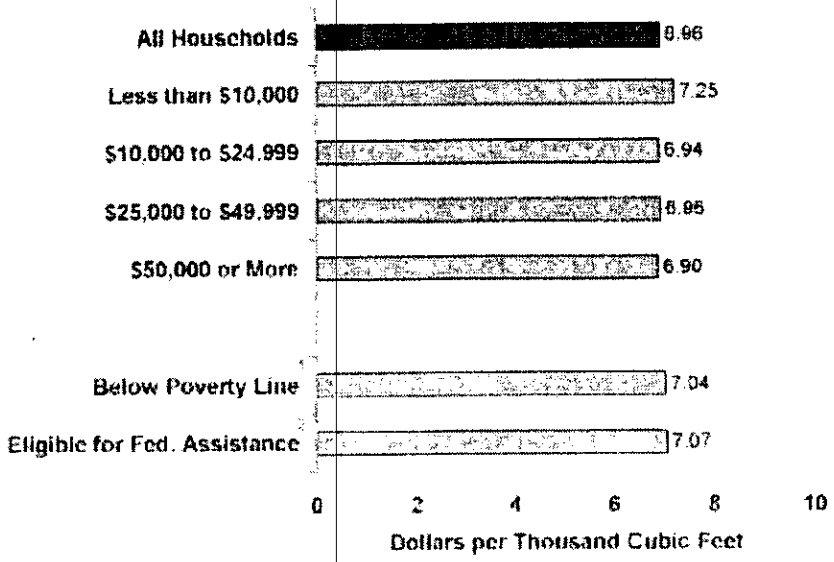
Notes:
1. Poverty line: Low-income classification defined by U.S. Census Bureau and U.S. Office of Management and Budget.
2. Eligible for Federal assistance: Below 150 percent of U.S. poverty line or equal to, or below, 60 percent of median State income.
Source: Residential Energy Consumption Survey 1997.

Figure 3. Natural Gas Expenditures per Household in 1997 by Household Income (Based on 1997 and 2001 Prices)



Notes:
1. Poverty line: Low-income classification defined by U.S. Census Bureau and U.S. Office of Management and Budget.
2. Eligible for Federal assistance: Below 150 percent of U.S. poverty line or equal to, or below, 60 percent of median State income.
Source: Residential Energy Consumption Survey 1997 and EIA, *Short-Term Energy Outlook February 2001.*

Figure 4. Natural Gas Prices by Household Income, 1997



Notes:
1. Poverty line: Low-income classification defined by U.S. Census Bureau and U.S. Office of Management and Budget.
2. Eligible for Federal assistance: Below 150 percent of U.S. poverty line or equal to, or below, 60 percent of median State income.
Source: Residential Energy Consumption Survey 1997.

Top

Page last modified on 02/27/2001 11:27:48

2001 Household Energy Consumption and Expenditures Tables

Table CE1-5.2u. Total Energy Consumption and Expenditures by Square Feet and Household Demographics, 2001

Household Demographics	Total End-Use Energy								RSE Row Factors
		Total		Per Household			Per Square Feet		
	Households (millions)	Consumption (quadrillion Btu)	Expenditures (billion dollars)	Consumption (million Btu)	Expenditures (dollars)	Square Feet	Consumption (1000 Btu)	Expenditures (dollars)	
RSE Column Factor:	1.3	1.5	1.4	0.8	0.7	0.9	0.8	0.8	
Total Households	107.0	9.86	159.74	92.2	1,493	1,975	46.7	0.76	1.3
Household Size									
1 Person	28.2	1.84	29.67	65.5	1,053	1,433	45.7	0.74	2.2
2 Persons	35.1	3.25	52.18	92.6	1,486	2,079	44.6	0.71	2.0
3 Persons	17.0	1.67	27.38	98.2	1,608	2,100	46.8	0.77	2.8
4 Persons	15.6	1.71	28.17	110.0	1,808	2,343	46.9	0.77	2.9
5 Persons	7.1	0.87	14.27	122.9	2,006	2,317	53.0	0.87	5.2
6 or More Persons	4.0	0.51	8.08	127.3	2,022	2,308	55.2	0.88	5.3
2001 Household Income Category									
Less than $9,999	11.0	0.72	11.47	65.2	1,039	1,168	55.9	0.89	4.6
$10,000 to $14,999	7.7	0.53	8.62	69.7	1,124	1,328	52.5	0.85	4.4
$15,000 to $19,999	8.9	0.72	11.49	80.5	1,290	1,494	53.9	0.86	4.2
$20,000 to $29,999	14.0	1.17	18.38	83.4	1,315	1,555	53.6	0.85	3.1
$30,000 to $39,999	13.9	1.21	19.43	86.9	1,398	1,725	50.4	0.81	3.1
$40,000 to $49,999	13.2	1.22	20.03	92.8	1,518	2,068	44.9	0.73	3.6
$50,000 to $74,999	21.7	2.22	36.47	102.5	1,683	2,360	43.4	0.71	2.7
$75,000 to $99,999	8.1	0.91	14.75	112.5	1,825	2,690	41.8	0.68	4.2
$100,000 or More	8.6	1.17	19.09	136.1	2,231	3,395	40.1	0.66	4.5
Income Relative to Poverty Line									
Below 100 Percent	15.0	1.06	17.04	70.7	1,138	1,227	57.6	0.93	3.8
100 to 150 Percent	11.5	0.95	15.19	83.0	1,324	1,494	55.6	0.89	3.7
Above 150 Percent	80.5	7.85	127.51	97.5	1,583	2,183	44.7	0.73	1.4
Eligible for Federal Assistance[1]									
Yes	33.8	2.70	42.94	79.9	1,270	1,435	55.7	0.89	2.4
No	73.2	7.16	116.80	97.9	1,596	2,225	44.0	0.72	1.5
Age of Householder									
Under 25 Years	6.1	0.40	7.04	65.9	1,148	1,154	57.1	1.00	4.6
25 to 34 Years	16.8	1.39	23.02	82.4	1,367	1,673	49.2	0.82	2.9
35 to 44 Years	22.3	2.24	36.35	100.1	1,626	2,096	47.7	0.78	2.6
45 to 54 Years	20.7	2.16	34.77	104.4	1,678	2,307	45.2	0.73	2.9
55 to 64 Years	14.5	1.41	23.14	97.3	1,593	2,207	44.1	0.72	3.1
65 to 74 Years	12.6	1.11	17.52	88.3	1,391	1,932	45.7	0.72	3.6
75 Years or More	11.2	0.92	13.98	81.4	1,243	1,773	45.9	0.70	4.0
No answer/refused	2.6	0.23	3.89	90.4	1,522	1,977	45.7	0.77	7.3
Race of Householder									
Non-Hispanic	96.8	9.15	147.60	94.5	1,524	2,035	46.5	0.75	1.4
Non-Hispanic White	78.7	7.49	120.71	95.2	1,533	2,087	45.6	0.73	1.6
Non-Hispanic Black	12.7	1.28	20.10	100.8	1,581	1,827	55.2	0.87	4.5
Multi-racial[2]	0.9	0.07	1.17	75.4	1,343	1,526	49.4	0.88	12.9
Other[3]	4.5	0.31	5.62	69.0	1,244	1,808	38.1	0.69	6.8
Hispanic	10.2	0.71	12.15	70.0	1,195	1,407	49.8	0.85	4.3

[1] Below 150 percent of poverty line or 60 percent of median State income.
[2] Respondents could select one or more race categories to describe themselves.
[3] Includes Native American, Native Alaskan, Asian, and Pacific Islander households.

Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A-G of the 2001 Residential Energy Consumption Survey.

Table CE1-3c. Total Energy Consumption in U.S. Households by Household Income, 2001 (Continued)

	Total	2001 Household Income				Below Poverty Line	Eligible for Federal Assistance[1]	RSE Row Factors
		Less than $10,000	$10,000 to $29,999	$30,000 to $49,999	$50,000 or More			
RSE Column Factor:	0.5	1.7	0.9	1.0	0.9	1.4	0.9	
	Physical Units per Household[3]							
Physical Units of Total Consumption per Household, Fuels Used:								
Electricity (kWh)	10,656	7,190	8,906	10,545	13,131	8,152	8,871	2.4
Natural Gas (thousand cf)	70	54	63	68	81	56	64	3.0
Fuel Oil (gallons)	589	492	527	562	667	471	553	5.7
Kerosene (gallons)	119	162	157	99	77	186	154	21.0
LPG (gallons)	440	308	450	455	456	352	411	9.9
Wood (cords)	1.3	3.5	1.9	1.5	0.9	2.4	2.1	18.4
	Million Households							
Number of Households, Where the End Use Is:								
Space Heating[4]	105.3	10.8	30.2	26.5	37.8	14.6	33.2	3.4
Electric Air-Conditioning[5]	80.8	6.9	21.7	21.0	31.2	9.1	22.6	3.9
Water Heating[6]	106.7	11.0	30.5	27.0	38.2	14.9	33.7	3.3
Refrigerators	106.8	11.0	30.5	27.1	38.3	14.9	33.7	3.3
Appliances	107.0	11.0	30.6	27.1	38.3	15.0	33.8	3.3
	Quadrillion Btu[a]							
Total Btu Consumption, Where the End Use Is:								
Space Heating	4.62	0.36	1.20	1.14	1.92	0.50	1.32	4.4
Electric Air-Conditioning	0.62	0.04	0.13	0.15	0.31	0.05	0.13	5.9
Water Heating	1.68	0.13	0.40	0.42	0.73	0.19	0.47	3.7
Refrigerators	0.53	0.05	0.14	0.13	0.22	0.06	0.15	3.6
Other Appliances and Lighting	2.40	0.16	0.55	0.59	1.11	0.25	0.63	3.8
	Million Btu per Household[3,a]							
Total Btu Consumption per Household, Where the End Use Is:								
Space Heating	43.9	33.1	39.7	43.1	50.8	34.1	39.7	3.4
Electric Air-Conditioning	7.7	5.1	5.9	7.2	9.9	5.8	5.8	4.0
Water Heating	15.8	11.5	13.2	15.5	19.2	12.9	14.0	2.3
Refrigerators	5.0	4.2	4.6	4.8	5.7	4.2	4.4	2.0
Other Appliances and Lighting	22.5	14.1	17.9	21.7	29.1	16.8	18.7	2.2

[1] Below 150 percent of poverty line or 60 percent of median State income.
[2] The RECS cannot be used to accurately estimate the number of households that do not use electricity.
[3] The averages for total and for appliances are over the set of all households; otherwise the averages are over the set of households using a given fuel or over the set using a given end use.
[4] Households where the main or secondary space-heating fuel is electricity, natural gas, fuel oil, kerosene, or LPG.
[5] The number of households, where the end use is electric air-conditioning, does not include households that did not use their equipment (0.9 million). It does include the small number of households where the fuel for central air-conditioning equipment was something other than electricity; those households were treated as if the fuel was electricity.
[6] Households where the main or secondary water-heating fuel is electricity, natural gas, fuel oil, kerosene, or LPG.
[a] The row factor in this section is underestimated because it contains no error for estimating the end-use.
Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A-G of the 2001 Residential Energy Consumption Survey.

2005 Energy Consumption and Expenditures Tables

Table US1. Total Energy Consumption, Expenditures, and Intensities, 2005
Part 2: Household Characteristics

Household Characteristics	U.S. Households (millions)	Number of Members per Household	Floorspace per Household (Square Feet)	Energy Consumption[3]				Energy Expenditures[3]			
				Total U.S. (quadrillion Btu)	Per Household (million Btu)	Per Household Member (million Btu)	Per Square Foot (thousand Btu)	Total U.S. (billion Dollars)	Per Household (Dollars)	Per Household Member (Dollars)	Per Square Foot (Dollars)
Total	111.1	2.57	2,171	10.55	94.9	37.0	43.7	201.07	1,810	705	0.83
Household Size											
1 Person	30.0	1.00	1,671	2.12	70.7	70.7	42.3	38.69	1,288	1,288	0.77
2 Persons	34.8	2.00	2,297	3.36	96.4	48.2	42.0	64.30	1,847	923	0.80
3 Persons	18.4	3.00	2,324	1.91	104.1	34.7	44.8	36.86	2,004	668	0.86
4 Persons	15.9	4.00	2,460	1.72	108.4	27.1	44.1	33.47	2,111	528	0.86
5 Persons	7.9	5.00	2,539	0.92	117.1	23.4	46.1	18.05	2,288	458	0.90
6 or More Persons	4.1	6.75	2,246	0.51	123.8	18.3	55.1	9.68	2,370	351	1.06
2005 Household Income Category											
Less than $10,000	9.9	1.92	1,393	0.73	73.7	38.3	52.9	13.40	1,353	703	0.97
$10,000 to $14,999	8.5	2.07	1,430	0.64	76.2	36.7	53.3	11.97	1,417	684	0.99
$15,000 to $19,999	8.4	2.19	1,518	0.66	78.8	36.0	51.9	12.13	1,448	661	0.95
$20,000 to $29,999	15.1	2.45	1,709	1.29	84.9	34.7	49.7	23.97	1,584	646	0.93
$30,000 to $39,999	13.6	2.62	1,937	1.18	86.2	32.9	44.5	22.84	1,674	639	0.86
$40,000 to $49,999	11.0	2.66	2,314	1.04	95.0	35.7	41.1	19.81	1,803	678	0.78
$50,000 to $74,999	19.8	2.76	2,361	1.97	99.2	35.9	42.0	38.15	1,924	697	0.81
$75,000 to $99,999	10.6	2.87	2,939	1.19	112.4	39.1	38.2	23.27	2,197	765	0.75
$100,000 or More	14.2	3.05	3,311	1.85	130.5	42.8	39.4	35.51	2,507	821	0.76
Income Relative to Poverty Line											
Below 100 Percent	16.6	2.72	1,400	1.33	79.8	29.3	57.0	24.72	1,485	545	1.06
100 to 150 Percent	12.9	2.70	1,583	1.04	80.7	29.9	50.9	19.97	1,548	573	0.98
Above 150 Percent	81.5	2.52	2,421	8.18	100.3	39.9	41.4	156.37	1,918	762	0.79
Eligible for Federal Assistance[1]											
Yes	38.6	2.67	1,598	3.21	83.1	31.2	52.0	60.12	1,559	584	0.98
No	72.5	2.52	2,475	7.34	101.2	40.2	40.9	140.95	1,944	773	0.79

Table US8. Average Consumption by Fuels Used, 2005
Physical Units per Household

	U.S. Households (millions)	Fuels Used (physical units of consumption per household using the fuel)					
		Electricity (kWh)	Natural Gas (thousand cf)	Fuel Oil (gallons)	Kerosene[4] (gallons)	LPG (gallons)	Wood (cords)
Household Size							
1 Person	30.0	7,485	56	719	80	398	1.3
2 Persons	34.8	11,675	67	756	62	495	1.6
3 Persons	18.4	13,241	70	738	Q	456	1.6
4 Persons	15.9	13,932	73	766	Q	462	1.0
5 Persons	7.9	14,864	78	721	Q	486	2.2
6 or More Persons	4.1	15,210	83	763	Q	366	1.8
2005 Household Income Category							
Less than $10,000	9.9	7,854	59	758	64	430	3.1
$10,000 to $14,999	8.5	8,710	54	698	126	376	1.2
$15,000 to $19,999	8.4	9,506	59	628	Q	402	1.5
$20,000 to $29,999	15.1	10,040	67	675	Q	359	2.1
$30,000 to $39,999	13.6	11,431	59	695	Q	459	1.4
$40,000 to $49,999	11.0	11,658	64	787	Q	508	1.5
$50,000 to $74,999	19.8	12,440	68	682	Q	509	1.7
$75,000 to $99,999	10.6	13,559	79	837	Q	453	1.4
$100,000 or More	14.2	15,382	82	944	Q	514	0.7
Income Relative to Poverty Line							
Below 100 Percent	16.6	9,038	61	706	98	448	2.2
100 to 150 Percent	12.9	10,342	59	703	120	315	2.6
Above 150 Percent	81.5	12,158	70	755	48	481	1.3
Eligible for Federal Assistance[2]							
Yes	38.6	9,664	62	691	105	383	2.0
No	72.5	12,446	70	775	43	490	1.3
Payment Method for Utilities							
All Paid by Household	97.5	12,046	70	751	79	461	1.5
Some Paid, Some in Rent	7.6	6,620	46	709	Q	340	Q
All Included in Rent	4.7	7,127	49	707	Q	Q	Q
Other Method	1.3	12,937	63	Q	N	650	Q

Table US8. Average Consumption by Fuels Used, 2005
Physical Units per Household

	U.S. Households (millions)	Fuels Used (physical units of consumption per household using the fuel)					
		Electricity (kWh)	Natural Gas (thousand cf)	Fuel Oil (gallons)	Kerosene[4] (gallons)	LPG (gallons)	Wood (cords)
Total	111.1	11,480	67	742	78	457	1.
Census Region and Division							
Northeast	20.6	8,227	82	798	54	387	2.
New England	5.5	7,432	88	855	62	450	1.
Middle Atlantic	15.1	8,514	80	762	Q	364	2.
Midwest	25.6	10,790	83	528	Q	652	1.
East North Central	17.7	10,479	89	535	Q	650	2.
West North Central	7.9	11,493	70	Q	Q	654	1.
South	40.7	14,895	52	569	80	381	1.
South Atlantic	21.7	14,721	57	576	85	343	1.
East South Central	6.9	15,928	56	Q	61	451	1.
West South Central	12.1	14,619	46	N	N	382	1.
West	24.2	9,230	53	566	Q	435	1.
Mountain	7.6	10,855	60	Q	N	501	1.
Pacific	16.6	8,492	50	673	Q	365	0.
Four Most Populated States							
New York	7.1	6,882	71	803	Q	374	3.
Florida	7.0	15,862	28	N	Q	Q	(
Texas	8.0	15,149	44	N	N	291	0.
California	12.1	6,992	45	Q	N	376	0.
All Other States	76.9	11,829	75	723	81	493	1.
Urban/Rural Location (as Self-Reported)							
City	47.1	9,896	62	711	41	317	0.
Town	19.0	10,982	73	806	45	333	1.
Suburbs	22.7	12,598	74	808	Q	308	0.
Rural	22.3	14,108	61	700	103	525	2.
Climate Zone[1]							
Less than 2,000 CDD and--							
Greater than 7,000 HDD	10.9	9,626	87	774	77	670	2.
5,500 to 7,000 HDD	26.1	9,440	86	807	71	463	1.
4,000 to 5,499 HDD	27.3	11,422	70	695	Q	438	1.
Fewer than 4,000 HDD	24.0	10,891	49	Q	69	419	1.
2000 CDD or More and--							
Less than 4,000 HDD	22.8	15,388	40	Q	Q	306	1.

Table US8. Average Consumption by Fuels Used, 2005
Physical Units per Household

	U.S. Households (millions)	Fuels Used (physical units of consumption per household using the fuel)					
		Electricity (kWh)	Natural Gas (thousand cf)	Fuel Oil (gallons)	Kerosene[4] (gallons)	LPG (gallons)	Wood (cords)
Type of Housing Unit							
Single-Family Detached	72.1	13,159	73	770	58	477	1.5
Single-Family Attached	7.6	9,240	68	649	Q	Q	0.5
Apartments in 2-4 Unit Buildings	7.8	7,460	66	687	N	Q	Q
Apartments in 5 or More Unit Buildings	16.7	7,001	41	721	Q	361	Q
Mobile Homes	6.9	11,787	53	476	140	395	1.6
Ownership of Housing Unit							
Owned	78.1	12,656	73	746	77	460	1.5
Single-Family Detached	64.1	13,311	74	765	60	475	1.5
Single-Family Attached	4.2	8,994	69	651	Q	Q	0.5
Apartments in 2-4 Unit Buildings	1.8	7,348	86	732	N	Q	Q
Apartments in 5 or More Unit Buildings	2.3	6,959	51	Q	N	Q	N
Mobile Homes	5.7	11,981	51	418	135	386	1.6
Rented	33.0	8,695	54	732	66	431	1.5
Single-Family Detached	8.0	11,940	67	821	Q	503	1.9
Single-Family Attached	3.4	9,539	65	Q	N	Q	Q
Apartments in 2-4 Unit Buildings	5.9	7,495	59	666	N	Q	Q
Apartments in 5 or More Unit Buildings	14.4	7,008	40	735	Q	363	Q
Mobile Homes	1.2	10,857	60	Q	Q	458	Q
Year of Construction							
Before 1940	14.7	9,114	84	789	48	443	2.3
1940 to 1949	7.4	8,741	69	744	Q	615	1.6
1950 to 1959	12.5	9,534	68	708	Q	445	1.4
1960 to 1969	12.5	10,703	67	736	Q	362	1.5
1970 to 1979	18.9	11,402	61	735	149	416	1.7
1980 to 1989	18.6	12,453	56	684	62	400	1.0
1990 to 1999	17.3	14,337	66	731	Q	459	1.1
2000 to 2005	9.2	13,969	64	616	Q	609	1.8
Total Floorspace (Square Feet)							
Fewer than 500	3.2	5,819	48	Q	Q	314	Q
500 to 999	23.8	7,881	46	654	89	362	1.8
1,000 to 1,499	20.8	10,520	62	716	Q	472	1.3
1,500 to 1,999	15.4	12,164	67	603	68	468	1.8
2,000 to 2,499	12.2	12,299	70	672	Q	541	1.1
2,500 to 2,999	10.3	12,679	73	798	Q	459	1.4
3,000 to 3,499	6.7	12,885	80	754	Q	378	1.5
3,500 to 3,999	5.2	13,623	84	817	Q	540	2.5
4,000 or More	13.3	16,754	91	871	Q	480	1.4

Table US8. Average Consumption by Fuels Used, 2005
Physical Units per Household

	U.S. Households (millions)	Fuels Used (physical units of consumption per household using the fuel)					
		Electricity (kWh)	Natural Gas (thousand cf)	Fuel Oil (gallons)	Kerosene[4] (gallons)	LPG (gallons)	Wood (cords)
Ethnic Origin of Householder							
Hispanic Descent	14.8	9,626	55	683	Q	400	1.4
Non-Hispanic Descent	96.3	11,765	69	751	77	463	1.5
Race of Householder[3]							
White	79.1	11,941	69	745	73	459	1.5
Hispanic	5.0	9,793	49	578	Q	472	1.4
Non-Hispanic	74.1	12,087	71	753	73	458	1.5
Black	13.4	11,071	70	733	94	457	1.3
Hispanic	0.3	9,680	54	Q	N	Q	Q
Non-Hispanic	13.1	11,106	71	752	94	451	1.3
Asian	3.3	8,449	57	Q	N	Q	Q
Multi-Racial	1.3	11,808	62	Q	Q	Q	Q
Other	7.1	10,193	52	785	Q	623	1.1
Undetermined (Race Reported as Hispanic)	6.9	9,739	60	715	N	252	1.5

1 One of five climatically distinct areas, determined according to the 30-year average (1971-2000) of the annual heating and cooling degree-days. A household is assigned to a climate zone according to the 30-year average annual degree-days for an appropriate nearby weather station.

2 Below 150 percent of poverty line or 60 percent of median state income.

3 Respondents were permitted to select more than one racial category to describe themselves. The "Other" category includes Native Americans, Native Alaskans, and Pacific Islanders.

4 Kerosene consumption and expenditure estimates could only be calculated for space heating since too few cases in the sample had viable data for water heating and appliances. Therefore, total estimates for kerosene equal space heating estimates for kerosene.

Q = Data withheld either because the Relative Standard Error (RSE) was greater than 50 percent or fewer than 10 households were sampled.

N = No cases in the reporting sample.

(*) Number less than 0.5, 0.05, or 0.005 depending on the number of significant digits in the column, rounded to zero.

Notes: • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Class Cost Of Service Study Results

Line		Formula	TOTAL	Residential	Small General Service	Large General Service	Large Volume
1	O & M Expenses		$ 98,038,417	$ 73,853,977	$ 17,252,285	$ 979,675	$ 5,952,480
2	Depreciation and Amortization Expenses		$ 29,688,581	$ 22,785,873	$ 4,886,757	$ 236,180	$ 1,779,771
3	Taxes		$ 23,398,589	$ 17,261,680	$ 4,272,444	$ 255,873	$ 1,608,592
4	TOTAL - Expenses and Taxes	(a)	$ 151,125,587	$ 113,901,530	$ 26,411,486	$ 1,471,728	$ 9,340,843
5							
6	Current Revenue						
7	Rate Revenue		$ 183,013,016	$ 131,062,754	$ 35,889,208	$ 2,122,169	$ 13,938,884
8	Other Revenue		$ 4,789,682	$ 3,430,078	$ 939,266	$ 55,540	$ 364,798
9	TOTAL - Current Revenues	(b)	$ 187,802,698	$ 134,492,832	$ 36,828,474	$ 2,177,709	$ 14,303,682
10	Current Revenue Percentage		100.00%	71.61%	19.61%	1.16%	7.62%
11							
12	OPERATING INCOME	(c) = (b) - (a)	$ 36,677,111	$ 20,591,302	$ 10,416,988	$ 705,981	$ 4,962,840
13							
14	TOTAL RATE BASE	(d)	$ 619,181,554	$ 456,564,191	$ 114,434,499	$ 7,239,383	$ 40,943,480
15							
16	Current Rate Of Return	(e) = (c) ÷ (d)	5.92%	4.51%	9.10%	9.75%	12.12%
17							
18	Operating Income Needed To Equalize Class Returns	(f) = 5.92 × (d)	$ 36,677,111	$ 27,044,500	$ 6,778,507	$ 428,824	$ 2,425,280
19							
20	Revenue Percentage Needed To Equalized Class Returns	(g) = (f) +(a)	$ 187,802,698	$ 140,946,030	$ 33,189,994	$ 1,900,552	$ 11,766,122
21			100.00%	75.05%	17.67%	1.01%	6.27%
22							
23	Rev. Neutral Shift to Equalize Class ROR	(h) = (g) - (b)		$ 6,453,198	$ (3,638,480)	$ (277,158)	$ (2,537,560)
24	**Rev. Neutral Shift Percentage to Equalize Class ROR**			**4.80%**	**-9.88%**	**-12.73%**	**-17.74%**
25							
26	Recommended Revenue Neutral Shift = 1/2 Indicated Shift	(i) = (h) ÷ 2		$ 3,226,599	$ (1,819,240)	$ (138,579)	$ (1,268,780)
27	**OPC Recommended Revenue Neutral Shift Percentage**			**2.46%**	**-5.07%**	**-6.53%**	**-9.10%**
28	Class Revenue Percentages After Rec. Rev. Neutral Shift			73.33%	18.64%	1.09%	6.94%

Example of Class Revenue Adjustments

Line		TOTAL	Residential	Small General Service	Large General Service	Large Volume
1	Current Revenue	$ 187,802,698	$ 134,492,832	$ 36,828,474	$ 2,177,709	$ 14,303,682
2	Current Class Revenue Percentages		71.61%	19.61%	1.16%	7.62%
3						
4	COS Indicated Class Revenue Percentages		75.05%	17.67%	1.01%	6.27%
5	Revenue Neutral Shifts to Equalize Class Rates of Return (ROR)	$ -	$ 6,453,198	$ (3,638,480)	$ (277,158)	$ (2,537,560)
6	Percentage Revenue Change to Equalize Class ROR		4.80%	-9.88%	-12.73%	-17.74%
7						
8	OPC's Recommended Revenue Neutral Shifts = 1/2 the Shift Required to Equalize Returns		$ 3,226,599	$ (1,819,240)	$ (138,579)	$ (1,268,780)
9	Revenue Percentages Including 1/2 Revenue Neutral Shift		73.33%	18.64%	1.09%	6.94%
10						
11	Rate Design Example- $15M Revenue Requirement Increase					
12	Spread of Revenue Requirement Increases Based on OPC Recommended Revenue Percentages	$ 15,000,000	$ 10,999,797	$ 2,796,225	$ 162,868	$ 1,041,111
13						
14	Combined Impact of Revenue Increase and OPC's Revenue Neutral Shift		$ 14,226,395	$ 976,984	$ 24,289	$ (227,668)
15	Class Share of Combined Impact		94.84%	6.51%	0.16%	-1.52%
16						
17						
18	**Adjustments to the Combined Impact**					
19	Combined Impact of Revenue Increase and OPC's Revenue Neutral Shift		$ 14,226,395	$ 976,984	$ 24,289	$ (227,668)
20	Adjusted to Ensure No Class Receives A Reduction If Another Class Receives an Increase		$ (212,698)	$ (14,607)	$ (363)	$ 227,668
21	Adjusted Combined Increase		$ 14,013,697	$ 962,378	$ 23,926	$ -
22	Class Share of Adjusted Increase		93.42%	6.42%	0.16%	0.00%
23						
24	Resulting Revenue	$ 202,802,698	$ 148,506,529	$ 37,790,851	$ 2,201,635	$ 14,303,682
25	Resulting Revenue Percentage		73.23%	18.63%	1.09%	7.05%

Example of Class Revenue Adjustments

Line		TOTAL	Residential	Small General Service	Large General Service	Large Volume
1	Current Revenue	$ 187,802,698	$ 134,492,832	$ 36,828,474	$ 2,177,709	$ 14,303,682
2	Current Class Revenue Percentages		71.61%	19.61%	1.16%	7.62%
3						
4	COS Indicated Class Revenue Percentages		75.05%	17.67%	1.01%	6.27%
5	Revenue Neutral Shifts to Equalize Class Rates of Return (ROR)	$ -	$ 6,453,198	$ (3,638,480)	$ (277,158)	$ (2,537,560)
6	Percentage Revenue Change to Equalize Class ROR		4.80%	-9.88%	-12.73%	-17.74%
7						
8	OPC's Recommended Revenue Neutral Shifts = 1/2 the Shift Required to Equalize Returns		$ 3,226,599	$ (1,819,240)	$ (138,579)	$ (1,268,780)
9	Revenue Percentages Including 1/2 Revenue Neutral Shift		73.33%	18.64%	1.09%	6.94%
10						
11	Rate Design Example- $15M Revenue Requirement Increase					
12	Spread of Revenue Requirement Increases Based on OPC Recommended Revenue Percentages	$ 15,000,000	$ 10,999,797	$ 2,796,225	$ 162,868	$ 1,041,111
13						
14	Combined Impact of Revenue Increase and OPC's Revenue Neutral Shift		$ 14,226,395	$ 976,984	$ 24,289	$ (227,668)
15	Class Share of Combined Impact		94.84%	6.51%	0.16%	-1.52%
16						
17						
18	**Adjustments to the Combined Impact**					
19	Combined Impact of Revenue Increase and OPC's Revenue Neutral Shift		$ 14,226,395	$ 976,984	$ 24,289	$ (227,668)
20	Adjusted to Ensure No Class Receives A Reduction If Another Class Receives an Increase		$ (212,698)	$ (14,607)	$ (363)	$ 227,668
21	Adjusted Combined Increase		$ 14,013,697	$ 962,378	$ 23,926	$ -
22	Class Share of Adjusted Increase		93.42%	6.42%	0.16%	0.00%
23						
24	Resulting Revenue	$ 202,802,698	$ 148,506,529	$ 37,790,851	$ 2,201,635	$ 14,303,682
25	Resulting Revenue Percentage		73.23%	18.63%	1.09%	7.05%

Labor Allocator Calculation (Cont.)

		FACTOR DESCRIPTION	FACTOR NO.	LABOR	Residential	Small General Service	Large General Service	Large Volume
	Distribution							
	Sales							
911	Supervision		7	-	-	-	-	-
912	Demonstrating and Selling	Dem & Sell	28	265,243	79,573	53,049	26,524	106,097
913	Advertising	Bills	7	-	-	-	-	-
916	Miscellaneous	Bills	7	-	-	-	-	-
	Total Sales			265,243	79,573	53,049	26,524	106,097
	Administrative & General							
	Operations							
920	Salaries	Labor	21	5,635,935	4,119,329	1,073,004	61,020	382,581
921	Office Supplies & Expense	Labor	21	7,705	5,632	1,467	83	523
922	Administrative Expense Transferred	Labor	21	-	-	-	-	-
923	Outside Services	Labor	21	-	-	-	-	-
924	Property Insurance	Net Non-General Plant	17	-	-	-	-	-
925	Injuries and Damages	Labor	21	2,693,749	1,968,873	512,853	29,165	182,858
926	Employee Pensions & Benefits	Labor	21	-	-	-	-	-
928	Regulatory Commission	Cost of Service	20		-	-	-	-
930.0	General Advertising		20		-	-	-	-
930.2	Miscellaneous General	Cost of Service	20		-	-	-	-
930.6	A/C 930 Trasferred to Construction	Cost of Service	20		-	-	-	-
931	Rents	Cost of Service	20		-	-	-	-
	Maintenance				-	-	-	-
932	General Plant							
	Total Administrative & General			8,337,389	6,093,833	1,587,324	90,269	565,963
				34,044,371	24,883,177	6,481,578	368,599	2,311,017
TOTAL Labor				34,044,371				

OPC Updated Class Cost of Service Study
MISSOURI GAS ENERGY
GR-2009-0355

	I. RATE BASE	FACTOR DESCRIPTION	FACTOR NO.	TOTAL	Residential	Small General Service	Large General Service	Large Volume
	A. GAS PLANT - Gross							
	Intangible							
301.00	Organization	Cost of Service	20	15,600	11,573	2,830	166	1,031
302.00	Franchise & Consents	Cost of Service	20	13,823	10,254	2,508	147	913
303.00	Miscellaneous	Cost of Service	20	30,041,604	22,286,092	5,450,800	319,868	1,984,845
	Total Intangible			30,071,027	22,307,919	5,456,138	320,181	1,986,789
				30,071,027				
	Production Plant - Manufactured							
304.00	Land & Land Rights		4	-	-	-	-	-
305.00	Structures & Improvements		4	-	-	-	-	-
307.00	Other Power Equip		4	-	-	-	-	-
311.00	Liquified Petrol Gas Equip		4	-	-	-	-	-
311.10	LP Gas Storage Cavern		4	-	-	-	-	-
	Total Prod Plant - Mfg			-	-	-	-	-
				-				
	Transmission Plant							
365.00	Land & Land Rights		5	-	-	-	-	-
367.00	Mains		5	-	-	-	-	-
369.00	Meas & Reg Sta Equip		5	-	-	-	-	-
	Total Transmission Plant			-	-	-	-	-
				-				
	Distribution Plant							
374.00	Land & Land Rights	Mains	5	2,331,922	1,595,797	431,175	28,690	276,260
375.00	Structures & Improvements	Mains	5	8,583,960	5,874,236	1,587,185	105,608	1,016,930
376.00	Mains	Mains	5	382,811,425	261,968,227	70,782,317	4,709,731	45,351,151
378.00	Meas & Reg Sta Equip	Annual Throughput Ccf	2	12,368,768	5,700,133	2,370,298	224,116	4,074,221
379.00	M&R Sta Equip - City Gate	Annual Throughput Ccf	2	3,411,645	1,572,253	653,793	61,817	1,123,782
380.00	Services	Weighted Services	10	316,610,835	275,790,924	38,708,167	553,748	1,557,996
381.00	Meters	Weighted Meters	11	32,658,905	19,635,083	11,104,439	378,902	1,540,481
382.00	Meter Installation	Weighted Meter Installaion	6	77,160,334	54,164,110	16,113,511	1,552,597	5,330,116
383.00	House Regulators	Weighted Regulators	12	12,733,549	8,694,329	3,375,101	152,776	511,343
385.00	EGM	ElectronicGas Meters	13	390,663	-	-	-	390,663
387.00	Other Equip		16	-	-	-	-	-
	Total Distribution Plant			849,062,006	634,995,092	145,125,986	7,767,986	61,172,941
				849,062,006				
	General Plant							
	Other General Plant	Net Non-General Plant	17	32,714,754	24,074,216	5,807,239	323,367	2,509,931
	Communications AMR	Meter Reading (Bills- LV)	9	38,190,850	33,393,522	4,775,637	21,690	-
	Total General Plant			70,905,604	57,467,739	10,582,877	345,057	2,509,931
				70,905,604				
	Total Plant In Service			950,038,637	714,770,750	161,165,001	8,433,225	65,669,661
				950,038,637				
				950,038,637				

B. ACCUMULATED DEPRECIATION & AMORTIZATION

	Intangible							
301.00	Organization		20	-	-	-	-	-
302.00	Franchise & Consents		20	-	-	-	-	-
303.00	Miscellaneous	Cost of Service	20	22,749,719	16,876,673	4,127,748	242,228	1,503,071
	Total Intangible			22,749,719	16,876,673	4,127,748	242,228	1,503,071
				22,749,719				
	Production Plant - Manufactured							
304.00	Land & Land Rights		4	-	-	-	-	-
305.00	Structures & Improvements		4	-	-	-	-	-
307.00	Other Power Equip		4	-	-	-	-	-
311.00	Liquified Petrol Gas Equip		4	-	-	-	-	-
311.10	LP Gas Storage Cavern		4	-	-	-	-	-
	Total Prod Plant - Mfg			-	-	-	-	-
				-				
	Transmission Plant							
365.00	Land & Land Rights		5	-	-	-	-	-
367.00	Mains		5	-	-	-	-	-
369.00	Meas & Reg Sta Equip		5	-	-	-	-	-
	Total Transmission Plant			-	-	-	-	-
	Distribution Plant			-				
374.00	Land & Land Rights	Mains	5	514,651	352,190	95,160	6,332	60,970
375.00	Structures & Improvements	Mains	5	462,654	316,607	85,545	5,692	54,810
376.00	Mains	Mains	5	127,905,050	87,528,890	23,649,806	1,573,616	15,152,738
378.00	Meas & Reg Sta Equip	Annual Throughput Ccf	2	4,221,300	1,945,381	808,952	76,488	1,390,479
379.00	M&R Sta Equip - City Gate	Annual Throughput Ccf	2	957,607	441,312	183,512	17,351	315,432
380.00	Services	Weighted Services	10	146,085,284	127,250,843	17,860,076	255,501	718,865
381.00	Meters	Weighted Meters	11	3,874,062	2,329,151	1,317,230	44,946	182,735
382.00	Meter Installation	Weighted Meter Installaion	6	19,901,850	13,970,468	4,156,134	400,459	1,374,789
383.00	House Regulators	Weighted Regulators	12	2,903,461	1,982,452	769,579	34,836	116,595
385.00	EGM	ElectronicGas Meters	13	136,769	-	-	-	136,769
387.00	Other Equip		16	-	-	-	-	-
	Total Distribution Plant			306,962,688	236,117,293	48,925,993	2,415,221	19,504,180
				306,962,688				
	General Plant							
	Other General Plant	Net Non-General Plant	17	8,590,033	6,321,255	1,524,828	84,908	659,042
	Communications AMR	Meter Reading (Bills- LV)	9	17,827,009	15,587,677	2,229,208	10,125	-
	Total General Plant			26,417,042	21,908,932	3,754,036	95,032	659,042
				26,417,042				
Total Depreciation & Amortization Reserve				356,129,449	274,902,898	56,807,776	2,752,481	21,666,293
				356,129,449				

C. GAS PLANT - NET

	Intangible							
301.00	Organization	Cost of Service	20	15,600	11,573	2,830	166	1,031
302.00	Franchise & Consents	Cost of Service	20	13,823	10,254	2,508	147	913
303.00	Miscellaneous	Cost of Service	20	7,291,885	5,409,419	1,323,052	77,640	481,774
	Total Intangible			7,321,308	5,431,246	1,328,391	77,954	483,718
				7,321,308				
	Production Plant - Manufactured							
304.00	Land & Land Rights		4	-	-	-	-	-
305.00	Structures & Improvements		4	-	-	-	-	-
307.00	Other Power Equip		4	-	-	-	-	-
311.00	Liquified Petrol Gas Equip		4	-	-	-	-	-
311.10	LP Gas Storage Cavern		4	-	-	-	-	-
	Total Prod Plant - Mfg			-	-	-	-	-
	Transmission Plant							
365.00	Land & Land Rights		5	-	-	-	-	-
367.00	Mains		5	-	-	-	-	-
369.00	Meas & Reg Sta Equip		5	-	-	-	-	-
	Total Transmission Plant			-	-	-	-	-
	Distribution Plant			-				
374.00	Land & Land Rights	Mains	5	1,817,271	1,243,608	336,016	22,358	215,290
375.00	Structures & Improvements	Mains	5	8,121,306	5,557,630	1,501,640	99,916	962,120
376.00	Mains	Mains	5	254,906,375	174,439,337	47,132,511	3,136,114	30,198,413
378.00	Meas & Reg Sta Equip	Annual Throughput Ccf	2	8,147,468	3,754,751	1,561,346	147,628	2,683,742
379.00	M&R Sta Equip - City Gate	Annual Throughput Ccf	2	2,454,038	1,130,941	470,281	44,466	808,350
380.00	Services	Weighted Services	10	170,525,551	148,540,082	20,848,091	298,247	839,132
381.00	Meters	Weighted Meters	11	28,784,843	17,305,932	9,787,209	333,956	1,357,746
382.00	Meter Installation	Weighted Meter Installaion	6	57,258,484	40,193,642	11,957,377	1,152,138	3,955,327
383.00	House Regulators	Weighted Regulators	12	9,830,088	6,711,877	2,605,522	117,941	394,748
385.00	EGM	ElectronicGas Meters	13	253,894	-	-	-	253,894
387.00	Other Equip		16	-	-	-	-	-
	Total Distribution Plant			542,099,318	398,877,799	96,199,993	5,352,765	41,668,761
				542,099,318				
	General Plant							
	Other General Plant	Net Non-General Plant	17	24,124,721	17,752,961	4,282,411	238,459	1,850,889
	Communications AMR	Meter Reading (Bills- LV)	9	20,363,841	17,805,846	2,546,430	11,566	-
	Total General Plant			44,488,562	35,558,807	6,828,841	250,025	1,850,889
				44,488,562				
	GAS PLANT IN SERVICE - NET			593,909,188	439,867,852	104,357,225	5,680,743	44,003,368
				593,909,188				
	OTHER GAS PLANT							
	Nat. Gas Stored Underground (CUSHIA)		3	-	-	-	-	-
	TOTAL GAS PLANT IN SERVICE - NET			593,909,188	439,867,852	104,357,225	5,680,743	44,003,368
				593,909,188				
				593,909,188				

D. OTHER RATE BASE

Add:							
Cash Working Capital	Cost of Service	20	18,678,923	13,856,790	3,389,135	198,884	1,234,114
Materials and Supplies	Total Net Plant	18	2,939,374	2,176,993	516,485	28,115	217,781
Prepayments	Cost of Service	20	468,642	347,658	85,031	4,990	30,963
Prepaid Pension Asset	Labor	21	14,746,244	10,778,093	2,807,481	159,658	1,001,012
Alternative Minimum Tax Credit	Rate Base	19	5,920,439	4,365,538	1,094,190	69,221	391,490
Net Cost of Removal Reg Asset	Total Net Plant	18	495,981	367,339	87,150	4,744	36,748
Natural Gas Stored Underground	MGE Gas Inventory Factor	3	100,132,701	71,055,042	25,947,055	2,417,675	712,928
Materials Management System Costs Deferred			-	-	-	-	-
Insulation Financing Program Loans			-	-	-	-	-
Energy Wise			-	-	-	-	-
Total Additions To Net Plant In Service			143,382,304	102,947,453	33,926,528	2,883,287	3,625,037
			143,382,304				
Less:							
~~Interest Offset~~	~~Cost of Service~~	~~20~~	~~1,485,980~~	~~1,102,361~~	~~269,619~~	~~15,822~~	~~98,178~~
Federal Income Tax Offset	Rate Base	19	631,430	465,596	116,698	7,383	41,753
State Income Tax Offset	Rate Base	19	99,225	73,165	18,338	1,160	6,561
City Tax Offset	Rate Base	19	218,855	161,377	40,448	2,559	14,472
Customer Advances For Construction	Bills	7	12,773,726	11,159,121	1,595,876	7,248	11,481
Customer Deposits	Cust Dep	25	4,572,625	785,577	3,635,694	140,837	10,517
Deferred Income Taxes	Rate Base	19	98,328,097	72,503,917	18,172,580	1,149,638	6,501,961
Total Deductions To Net Plant In Service			118,109,938	86,251,113	23,849,253	1,324,647	6,684,924
			118,109,938				
Subtotal - Other Rate Base			25,272,366	16,696,340	10,077,274	1,558,640	(3,059,888)
			25,272,366				
TOTAL RATE BASE ----------			619,181,554	456,564,191	114,434,499	7,239,383	40,943,480
			619,181,554				

II. OPERATION and MAINTENANCE EXPENSES	FACTOR DESCRIPTION	FACTOR NO.	TOTAL	Residential	Small General Service	Large General Service	Large Volume
Natural Gas Supply Expense							
804 Nat. Gas City Gate & LP Purchases			-	-	-	-	-
808 Gas Withdrawn from Storage			-	-	-	-	-
809 Gas Delivered to Storage			-	-	-	-	-
810&812 Company Use			-	-	-	-	-
Total Natural Gas Expense			-				
Manufactured Gas Production							
Operations							
710 Supervision			-	-	-	-	-
712 Other Power Expenses			-	-	-	-	-
717 LP Expense			-	-	-	-	-
723 Fuel for Vapor LPG			-	-	-	-	-
728 LP Gas			-	-	-	-	-
735 Miscellaneous			-	-	-	-	-
Maintenance							
740 Supervision			-	-	-	-	-
741 Structures & Improvements			-	-	-	-	-
742 Production Equipment			-	-	-	-	-
Total Manufactured Gas			-	-	-	-	-
Transmission			-				
Operations							
850 Supervision & Engineering			-	-	-	-	-
851 Load Dispatch			-	-	-	-	-
856 Mains			-	-	-	-	-
857 Measuring & Regulating Exp			-	-	-	-	-
859 Other Expenses			-	-	-	-	-
860 Rents			-	-	-	-	-
820 Measuring & Regulating			-	-	-	-	-
821 Purification			-	-	-	-	-
822 Exploration & Developement			-	-	-	-	-
823 Losses			-	-	-	-	-
824 Other Expenses			-	-	-	-	-
825 Storage Well Royalty			-	-	-	-	-
Maintenance							
861 Supervision & Engineering			-	-	-	-	-
862 Structures & Improvements			-	-	-	-	-
863 Mains			-	-	-	-	-
865 Measuring & Regulating Exp			-	-	-	-	-
867 Other Equipment			-	-	-	-	-
835 Meter & Regulating Station Equipment			-	-	-	-	-
836 Purification Equipment			-	-	-	-	-
837 Other Equipment			-	-	-	-	-
Total Transmission			-	-	-	-	-

	II. OPERATION and MAINTENANCE EXPENSES (continue)	FACTOR DESCRIPTION	FACTOR NO.	TOTAL	Residential	Small General Service	Large General Service	Large Volume
	Distribution							
	Operations							
870	Supervision & Engineering	Net Distribution Plant	16	679,441	499,934	120,572	6,709	52,226
871	Load Dispatch	Annual Throughput Ccf	2	27,765	12,795	5,321	503	9,146
874	Mains and services	Net Mains/Services Plant	15	3,124,294	2,371,902	499,237	25,221	227,934
875	Measuring & Regulating Stations	Annual Throughput Ccf	2	827,368	381,292	158,553	14,992	272,532
876	Measuring & Regulating Commercial	Large Ind. Bills	8	(2,934)	-	-	(1,135)	(1,799)
877	Measuring & Regulating City Gate	Annual Throughput Ccf	2	8,419	3,880	1,613	153	2,773
878	Meter & House Regulating	Weighted Meters	11	6,534,966	3,928,932	2,221,971	75,817	308,246
879	Customer Installations	Bills	7	3,146,297	2,748,604	393,080	1,785	2,828
880	Other Expenses	Net Distribution Plant	16	(857,127)	(630,676)	(152,104)	(8,463)	(65,884)
881	Rents	Net Distribution Plant	16	186,376	137,136	33,074	1,840	14,326
	Maintenance							
885	Supervision & Engineering	Net Distribution Plant	16	1,212,531	892,183	215,174	11,973	93,202
886	Structures and Improvements	Net Distribution Plant	16	115,407	84,917	20,480	1,140	8,871
887	Mains	Mains	5	9,722,969	6,653,691	1,797,789	119,622	1,151,867
889	Measuring & Regulating Stations	Annual Throughput Ccf	2	708,413	326,471	135,757	12,836	233,348
890	Measuring & Regulating Commercial	Large Ind. Bills	8	252,669	-	-	97,783	154,886
891	Measuring & Regulating City Gate	Annual Throughput Ccf	2	26,703	12,306	5,117	484	8,796
892	Services	Weighted Services	10	942,508	820,993	115,229	1,648	4,638
893	Meters & House Regulators	Weighted Meters	11	334,446	201,075	113,716	3,880	15,775
894	Other Equipment	Net Distribution Plant	16	174,278	128,234	30,927	1,721	13,396
	Total Distribution			27,164,789	18,573,667	5,715,507	368,508	2,507,107
	Customer Accounts			27,164,789				
901	Supervision	Weighted Meters	11	249,689	150,117	84,897	2,897	11,778
902	Meter reading	Met Read	29	962,369	842,265	118,564	577	962
903	Customer Records and Collection	Cust Accts	30	13,023,279	11,333,991	1,648,912	16,932	23,444
904	Uncollectible Accounts	Uncollectibles	27	9,843,534	9,030,458	809,138	3,937	-
905	Miscellaneous	Customer Acct. Expense	14	43,424	38,645	4,695	39	44
	Total Customer Accounts			24,122,295	21,395,477	2,666,207	24,383	36,229
				24,122,295				

II. OPERATION and MAINTENANCE EXPENSES (continue)		FACTOR DESCRIPTION	FACTOR NO.	TOTAL	Residential	Small General Service	Large General Service	Large Volume
Customer Service & Information								
907	Supervision		7	-	-	-	-	-
908	Customer Assistance	Bills	7	1,103,451	963,974	137,859	626	992
909	Informational & Instruct Advertising	Bills	7	78,181	68,299	9,767	44	70
910	Miscellaneous Expense		7	-	-	-	-	-
Total Customer Svc & Info				1,181,632	1,032,273	147,626	670	1,062
				1,181,632				
Sales								
911	Supervision		7	-	-	-	-	-
912	Demonstrating and Selling	Dem & Sell	28	1,018,243	305,473	203,649	101,824	407,297
913	Advertising	Bills	7	20	17	2	0	0
916	Miscellaneous	Bills	7	1,646	1,438	206	1	1
Total Sales				1,019,909	306,928	203,857	101,825	407,299
				1,019,909				
Administrative & General								
Operations								
920	Salaries	Labor	21	6,872,132	5,022,871	1,308,359	74,405	466,498
921	Office Supplies & Expense	Labor	21	2,609,323	1,907,165	496,779	28,251	177,127
922	Administrative Expense Transferred	Labor	21	(525,286)	(383,934)	(100,007)	(5,687)	(35,658)
923	Outside Services	Labor	21	4,394,612	3,212,041	836,673	47,581	298,317
924	Property Insurance	Net Non-General Plant	17	31,359	23,077	5,567	310	2,406
925	Injuries and Damages	Labor	21	2,693,749	1,968,873	512,853	29,165	182,858
926	Employee Pensions & Benefits	Labor	21	21,646,470	15,821,498	4,121,189	234,367	1,469,417
928	Regulatory Commission	Cost of Service	20	1,771,826	1,314,413	321,483	18,866	117,064
930.0	General Advertising		20	-	-	-	-	-
930.2	Miscellaneous General	Cost of Service	20	2,080,326	1,543,271	377,458	22,150	137,447
930.6	A/C 930 Trasferred to Construction	Cost of Service	20	1,635,884	1,213,566	296,818	17,418	108,083
931	Rents	Cost of Service	20	1,162,951	862,725	211,008	12,383	76,836
Maintenance								
932	General Plant							
Total Administrative & General				44,373,346	32,505,565	8,388,178	479,207	3,000,395
				44,373,346				
TOTAL O & M EXPENSES				97,861,971	73,813,910	17,121,375	974,594	5,952,092
				97,861,971				

III. DEPRECIATION and AMORTIZATION		FACTOR DESCRIPTION	FACTOR NO.	TOTAL	Residential	Small General Service	Large General Service	Large Volume
	Intangible							
301.00	Organization		20	-	-	-	-	-
302.00	Franchise & Consents		20	-	-	-	-	-
303.00	Miscellaneous		20	-	-	-	-	-
	Total Intangible			-	-	-	-	-
				-				
	Production Plant - Manufactured							
304.00	Land & Land Rights		4	-	-	-	-	-
305.00	Structures & Improvements		4	-	-	-	-	-
307.00	Other Power Equip		4	-	-	-	-	-
311.00	Liquified Petrol Gas Equip		4	-	-	-	-	-
311.10	LP Gas Storage Cavern		4	-	-	-	-	-
	Total Prod Plant - Mfg			-	-	-	-	-
				-				
	Transmission Plant							
365.00	Land & Land Rights		5	-	-	-	-	-
367.00	Mains		5	-	-	-	-	-
369.00	Meas & Reg Sta Equip		5	-	-	-	-	-
	Total Transmission Plant			-	-	-	-	-
	Distribution Plant			-				
374.00	Land & Land Rights		5	-	-	-	-	-
375.00	Structures & Improvements	Mains	5	127,901	87,526	23,649	1,574	15,152
376.00	Mains	Mains	5	8,268,727	5,658,514	1,528,898	101,730	979,585
378.00	Meas & Reg Sta Equip	Annual Throughput Ccf	2	353,747	163,024	67,791	6,410	116,523
379.00	M&R Sta Equip - City Gate	Annual Throughput Ccf	2	72,668	33,489	13,926	1,317	23,937
380.00	Services	Weighted Services	10	9,909,919	8,632,256	1,211,566	17,332	48,765
381.00	Meters	Weighted Meters	11	943,842	567,454	320,918	10,950	44,520
382.00	Meter Installation	Weighted Meter Installaion	6	2,206,786	1,549,094	460,847	44,404	152,441
383.00	House Regulators	Weighted Regulators	12	310,699	212,142	82,353	3,728	12,477
385.00	EGM	ElectronicGas Meters	13	13,009	-	-	-	13,009
387.00	Other Equip		16	-	-	-	-	-
	Total Distribution Plant			22,207,298	16,903,498	3,709,946	187,445	1,406,409
				22,207,298				
	General Plant							
	Other General Plant	Net Non-General Plant	17	2,107,526	1,550,892	374,110	20,832	161,693
	Communications AMR	Meter Reading (Bills- LV)	9	1,909,543	1,669,677	238,782	1,085	-
	Total General Plant			4,017,069	3,220,568	612,892	21,916	161,693
				4,017,069				
	ANNUALIZED CAPITALIZED DEP							
	Total Depreciation			26,224,367	20,124,066	4,322,838	209,361	1,568,102
	Amortization Expense	SLR	22	1619054	1,303,986	236,382	8,581	70,105
		Net Non-General Plant	17	1845160	1,357,821	327,537	18,238	141,564
	Total Depreciation and Amortization			29,688,581	22,785,873	4,886,757	236,180	1,779,771
				29,688,581				
OTHER OPERATING EXPENSES								
	Exploration & Development, Net							
	Other							
	Interst on Deposits	Interest on Dep	26	176,446	40,067	130,910	5,081	388
				-				
TOTAL OPERATING EXPENSE WO/ TAXES				127,726,998	96,639,850	22,139,042	1,215,855	7,732,251
				127,726,998				

IV. TAXES

1. Taxes Other Than Income Taxes (TOTIT)							
RE&PP	Total Net Plant	18	7,146,564	5,292,970	1,255,740	68,357	529,497
Franchise	Rate Base	19	54,675	40,316	10,105	639	3,615
KC Income Tax	Rate Base	19	30,319	22,356	5,603	354	2,005
Gross Receipts (del. from staff run)			-	-	-	-	-
Payroll	Labor	21	2,528,792	1,848,305	481,447	27,379	171,661
Other	Cost of Service	20	300,036	222,579	54,439	3,195	19,823
Subtotal - TOTIT			10,060,386	7,426,526	1,807,334	99,925	726,601
			10,060,386				
2. Income Taxes							
Current Income Tax Expense	Rate Base	19	13,338,203	9,835,154	2,465,110	155,948	881,991
Deferred Income Tax Expense		19	-	-	-	-	-
Total Income Taxes			13,338,203	9,835,154	2,465,110	155,948	881,991
			13,338,203				
TOTAL TAXES			23,398,589	17,261,680	4,272,444	255,873	1,608,592
			23,398,589				

Line	TOTAL COST OF SERVICE SUMMARY	TOTAL	Residential	Small General Service	Large General Service	Large Volume
1	O & M Expenses	98,038,417	73,853,977	17,252,285	979,675	5,952,480
2	Depreciation and Amortization Expenses	29,688,581	22,785,873	4,886,757	236,180	1,779,771
3	Taxes	23,398,589	17,261,680	4,272,444	255,873	1,608,592
4						
5	TOTAL - Expenses and Taxes	151,125,587	113,901,530	26,411,486	1,471,728	9,340,843
6		151,125,587				
7	Current Revenue					
8	Rate Revenue	183,013,016	131,062,754	35,889,208	2,122,169	13,938,884
9						
10	Other Revenue	4,789,682	3,430,078	939,266	55,540	364,798
11						
12	TOTAL - Current Revenues	187,802,698	134,492,832	36,828,474	2,177,709	14,303,682
13	Current Revenue Percentage	100.00%	71.61%	19.61%	1.16%	7.62%
14						
15	OPERATING INCOME	36,677,111	20,591,302	10,416,988	705,981	4,962,840
16		36,677,111				
17	TOTAL RATE BASE	619,181,554	456,564,191	114,434,499	7,239,383	40,943,480
18		619,181,554				
19	Implicit Rate of Return (ROR)	5.92%	4.51%	9.10%	9.75%	12.12%

Customer Charge		TOTAL	Residential	Small General Service	Large General Service	Large Volume
RATE BASE			212,751,533	45,198,199	1,902,281	6,800,847
RETURN	9.8000%		34,401,923	7,308,549	307,599	1,099,697
O & M	(OPC return grossed up for Fed and State income tax)		21,155,236	5,047,197	126,608	589,488
DEPR. + OTHER			10,960,945	2,075,683	76,415	271,212
CUSTOMER CHARGE COSTS			66,518,104	14,431,429	510,621	1,960,397
CUSTOMER BILLS			5,380,779	769,510	3,495	5,536
MONTHLY CUSTOMER CHARGE			12.36	18.75	146.10	354.12

ALLOCATORS

		TOTAL	Residential	Small General Service	Large General Service	Large Volume
		TOTAL	ONE	TWO	THREE	FOUR
1	Rate Revenue	1.00000	0.71614	0.19610	0.01160	0.07616
2	Annual Throughput Ccf	1.00000	0.46085	0.19164	0.01812	0.32940
3	MGE Gas Inventory Factor	1.00000	0.70961	0.25913	0.02414	0.00712
4	Coincident Peak Demand	1.00000	0.56627	0.22230	0.01962	0.19180
5	Mains	1.00000	0.68433	0.18490	0.01230	0.11847
6	Weighted Meter Installaion	1.00000	0.70197	0.20883	0.02012	0.06908
7	Bills	1.00000	0.87360	0.12493	0.00057	0.00090
8	Large Ind. Bills	1.00000	-	-	0.38700	0.61300
9	Meter Reading (Bills- LV)	1.00000	0.87439	0.12505	0.00057	-
10	Weighted Services	1.00000	0.87107	0.12226	0.00175	0.00492
11	Weighted Meters	1.00000	0.60122	0.34001	0.01160	0.04717
12	Weighted Regulators	1.00000	0.68279	0.26506	0.01200	0.04016
13	ElectronicGas Meters	1.00000	-	-	-	1.00000
14	Customer Acct. Expense	1.00000	0.88995	0.10813	0.00090	0.00102
15	Net Mains/Services Plant	1.00000	0.75918	0.15979	0.00807	0.07296
16	Net Distribution Plant	1.00000	0.73580	0.17746	0.00987	0.07687
17	Net Non-General Plant	1.00000	0.73588	0.17751	0.00988	0.07672
18	Total Net Plant	1.00000	0.74063	0.17571	0.00957	0.07409
19	Rate Base	1.00000	0.73737	0.18482	0.01169	0.06613
20	Cost of Service	1.00000	0.74184	0.18144	0.01065	0.06607
21	Labor	1.00000	0.73090	0.19039	0.01083	0.06788
22	SLR	1.00000	0.80540	0.14600	0.00530	0.04330
23	Misc Int Un	1.00000	0.84542	0.13319	0.00250	0.01890
24	Misc Int Am	1.00000	0.81370	0.15760	0.00470	0.02400
25	Cust Dep	1.00000	0.17180	0.79510	0.03080	0.00230
26	Interest on Dep	1.00000	0.22708	0.74193	0.02880	0.00220
27	Uncollectibles	1.00000	0.91740	0.08220	0.00040	-
28	Dem & Sell	1.00000	0.30000	0.20000	0.10000	0.40000
29	Met Read	1.00000	0.87520	0.12320	0.00060	0.00100
30	Cust Accts	1.00000	0.87029	0.12661	0.00130	0.00180

COS Allocator Calculation

totals exclude accounts allocated based on COS

	TOTAL	Residential	Small General Service	Large General Service	Large Volume
O & M EXPENSES	81,367,450	59,849,477	15,105,471	899,840	5,512,662
DEPREC. & AMORT. EXPENSE	27,843,421	21,428,052	4,559,220	217,942	1,638,207
TAXES	23,098,553	17,039,101	4,218,005	252,678	1,588,768
Subtotal - Expenses and Taxes	132,309,424	98,316,631	23,882,696	1,370,460	8,739,637
	132,309,424				
TOTAL RATE BASE	594,198,661	438,030,858	109,901,561	6,973,378	39,292,864
	594,198,661				
RATE OF RETURN	5.923%	5.923%	5.923%	5.923%	5.923%
REQUIRED OPERATING INCOME	35,197,253	25,946,681	6,510,000	413,067	2,327,506
TOTAL COST OF SERVICE	167,506,677	124,263,312	30,392,695	1,783,527	11,067,143

Labor Allocator Calculation

		FACTOR DESCRIPTION	FACTOR NO.	LABOR	Residential	Small General Service	Large General Service	Large Volume
Distribution								
Operations								
870	Supervision & Engineering	Net Distribution Plant	16	657,834	484,036	116,738	6,496	50,565
871	Load Dispatch	Annual Throughput Ccf	2	28,022	12,914	5,370	508	9,230
874	Mains and services	Net Mains/Services Plant	15	554,269	420,790	88,568	4,474	40,437
875	Measuring & Regulating Stations	Annual Throughput Ccf	2	519,842	239,569	99,620	9,419	171,234
876	Measuring & Regulating Commercial	Large Ind. Bills	8	(830)	-	-	(321)	(509)
877	Measuring & Regulating City Gate	Annual Throughput Ccf	2	3,429	1,580	657	62	1,129
878	Meter & House Regulating	Weighted Meters	11	4,494,475	2,702,154	1,528,178	52,144	211,999
879	Customer Installations	Bills	7	2,327,011	2,032,876	290,723	1,320	2,092
880	Other Expenses	Net Distribution Plant	16	1,450,304	1,067,137	257,368	14,321	111,478
881	Rents	Net Distribution Plant	16	-	-	-	-	-
Maintenance								
885	Supervision & Engineering	Net Distribution Plant	16	1,217,372	895,745	216,033	12,021	93,574
886	Structures and Improvements	Net Distribution Plant	16	69,370	51,043	12,310	685	5,332
887	Mains	Mains	5	5,689,102	3,893,207	1,051,922	69,993	673,980
889	Measuring & Regulating Stations	Annual Throughput Ccf	2	404,051	186,206	77,421	7,321	133,093
890	Measuring & Regulating Commercial	Large Ind. Bills	8	150,020	-	-	58,058	91,962
891	Measuring & Regulating City Gate	Annual Throughput Ccf	2	11,079	5,106	2,123	201	3,649
892	Services	Weighted Services	10	564,086	491,360	68,964	987	2,776
893	Meters & House Regulators	Weighted Meters	11	222,156	133,564	75,536	2,577	10,479
894	Other Equipment	Net Distribution Plant	16	39,478	29,048	7,006	390	3,034
Total Distribution				18,401,070	12,646,333	3,898,547	240,655	1,615,535
Customer Accounts								
901	Supervision	Weighted Meters	11	252,305	151,690	85,787	2,927	11,901
902	Meter reading	Met Read	29	686,555	600,873	84,584	412	687
903	Customer Records and Collection	Cust Accts	30	5,935,762	5,165,817	751,543	7,717	10,685
904	Uncollectible Accounts	Uncollectibles	27	-	-	-	-	-
905	Miscellaneous	Customer Acct. Expense	14	-	-	-	-	-
Total Customer Accounts				6,874,622	5,918,380	921,913	11,056	23,273
Customer Service & Information								
907	Supervision		7	-	-	-	-	-
908	Customer Assistance	Bills	7	166,047	145,059	20,745	94	149
909	Informational & Instruct Advertising	Bills	7	-	-	-	-	-
910	Miscellaneous Expense		7	-	-	-	-	-
Total Customer Svc & Info				166,047	145,059	20,745	94	149